TETRA TECH

July 13, 2016

Mr. Bradley Vann
Remedial Project Manager
U.S. Environmental Protection Agency, Region 7
11201 Renner Boulevard
Lenexa, Kansas 66219

Subject: **Radon Emanation Coefficient Study**
West Lake Landfill Site, Bridgeton, Missouri
CERCLIS ID: MOD079900932
EPA Region 7, START 4, Contract No. EP-S7-13-06, Task Order No. 0007
Task Monitor: Bradley Vann, Remedial Project Manager

Dear Mr. Vann:

Tetra Tech, Inc. is submitting electronically, on the enclosed CD, the analytical laboratory report with associated data validation report regarding a study evaluating radon emanation coefficient of core samples collected at the West Lake Landfill Site (WLLS) in Bridgeton, Missouri. If you have any questions or comments, please contact Robert Monnig at (816) 412-1775.

Sincerely,

Robert Monnig, PE
START Project Manager

Ted Faile, PG, CHMM
START Program Manager

Enclosures

cc: Debra Dorsey, START Project Officer (cover letter only)

415 Oak Street, Kansas City, MO 64106
Tel 816.412.1741 Fax 816.410.1748 www.tetratech.com

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Tetra Tech, Inc.
DATA VALIDATION REPORT
LEVEL IV

Site:	West Lake Landfill Site, Bridgeton, Missouri
Laboratory:	Southwest Research Institute (SwRI). (San Antonio, Texas)
Data Reviewer:	Harry Ellis, Tetra Tech, Inc. (Tetra Tech)
Review Date	May 4, 2016
Sample Delivery Group (SDG):	588049
Sample Numbers:	1D7-84-85, A2-S1, A1-AC-1, A1-AC-3, A2-AC-21, and WL-234CT
Matrix / Number of Samples:	Six Landfill Samples

The data were qualified according to the U.S. Environmental Protection Agency (EPA) Region 7 documents entitled "Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review" (9355.0-131), August 2014. In addition, the Tetra Tech document “Review of Data Packages from Subcontracted Laboratories” (February 2002), the project-specific “Quality Assurance Project Plan (QAPP) for Radon Emanation Coefficient Study” dated 29 October 2015, and the EPA and others document “Multi-Agency Radiological Laboratory Analytical Protocols Manual” (July 2004) were used along with other criteria specified in the applicable methods.

The review was intended to identify problems and quality control (QC) deficiencies that were readily apparent from the summary data package. The following sections discuss any problems or deficiencies that were found, and data qualifications applied because of non-compliant QC. The data review was limited to the available field and laboratory QC information submitted with the project-specific data package.

I, Harry Ellis, certify that all data validation criteria outlined in the above-referenced documents were assessed, and any qualifications made to the data accorded with those documents.

Harry N. Ellis III

4 May 2016

Certified by Harry Ellis, Chemist — Date

DATA VALIDATION QUALIFIERS

U — The analyte was not detected above the reported sample quantitation limit.

J — The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ — The analyte was not detected above the reported sample quantitation limit, which is estimated.

R — The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet QC criteria. Presence or absence of the analyte cannot be verified.

DATA ASSESSMENT

Sample delivery group (SDG) 588049 included six (6) environmental landfill samples and no QC samples. Samples were analyzed by (1) thermogravimetric analysis (TGA) to determine the effects of heating, (2) inductively-coupled plasma (ICP) mass spectroscopy (MS) for uranium isotopes, (3) ICP atomic emission spectroscopy for non-radioactive metals, (4) alpha spectroscopy for thorium isotopes, (5) gamma spectroscopy for various thorium and uranium decay products, and (6) radon emanation coefficients. SwRI used their own methods that, where practical, followed the equivalent EPA SW-846 Methods. The following summarizes the data validation that was performed. Note that all holding time and chain of custody requirements were met.

THERMOGRAVIMETRIC ANALYSES

I. Method Description and Specific Objectives

Thermogravimetric analysis involves weighing a sample and heating it at a specified temperature for a specified period of time. During (and for while after) the heating period the sample weight is monitored and suitable thermal detectors are used to determine the presence of endothermic or exothermic reactions. The temperature versus time curve is useful for indicating reactions occurring within the sample. Therefore this technique is frequently used with known or presumed reactive materials, including flammable and explosive materials. For these tests, thermogravimetric analyses were used to prepare sub-samples (called “conditions”) for radon emanation tests as well as to determine moisture levels. Therefore few QC measures are taken.

II. Overall Assessment of Data

The analyses were performed as required in the QAPP. The only effect obvious from the results was evaporation of sample water, leaving a final residue with a mass of 60 to 86 percent of the original, wet sample.

ICP-MASS SPECTRAL ANALYSES

I. Method Description and Specific Objectives

These analyses were a variant of the standard EPA SW-846 6020 analyses, modified to measure uranium isotopes (234, 235, 236, and 238, with uranium-233 added as an internal standard) only. It was used to characterize the uranium content of the samples.

II. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

MS and sample duplicate analyses were performed on sample A2-S1. Recoveries could not be determined for isotopes (except uranium-234) because the unspiked sample contained much more of the isotope than the spike. No qualifications were applied for these data gaps. The sample duplicate analysis was within QC limit, so no qualifications were applied.

III. Blanks

The laboratory (method) blank yielded no detectable concentrations of the analytes. No qualifications were applied.

IV. Laboratory Control Sample (LCS)

All percent recoveries from the LCS analyses were within established control limits. No qualifications were applied.

V. Surrogates

Surrogates are not used in this analysis. Internal standard recoveries were well within their QC limits. No qualifications were applied.

VI. Other Quality Control Measures.

All calibration (initial, continuing, and low-concentration continuing) results were within their various QC limits. There were no irregularities with instrument performance checks, interference check samples, and the serial dilution analysis performed on sample A2-S1. No qualifications were applied.

VII. Comments

All analytes except uranium-236 in all samples were analyzed at dilutions, from 2- to 1,000-fold, to bring the results within calibration range. All samples were “natural uranium”, with 0.7 percent uranium-235 and negligible uranium-236.

VIII. Overall Assessment of Data

Overall data quality is acceptable, with no qualifications applied. All data are usable as reported for their intended purposes.

ICP-ATOMIC EMISSION SPECTROSCOPY ANALYSES

I. Method Description and Specific Objectives

These analyses were essentially identical to the standard EPA SW-846 Method 6010 analyses, intended to characterize the samples for their contents of numerous metals, from aluminum to zirconium alphabetically and from lithium to bismuth in mass.

II. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

MSMSD and sample duplicate analyses were performed on sample A2-S1. Spike recoveries could not be determined for aluminum, calcium, cobalt, copper, iron, magnesium, manganese, molybdenum, nickel, potassium, vanadium, and zinc because the field sample concentrations were much higher than the spike concentrations. No qualifications were applied for these data gaps. However, lanthanum recoveries were 59 and 46 percent, well below their QC limits of 75 to 125 percent. The lanthanum results for all samples were qualified as estimated, possibly biased low, and flagged "J". In addition, the only result outside the QC limit of an RPD of 20 percent for the sample duplicate analysis was for tin, with an RPD of 30.5 percent, indicating a heterogeneous distribution of the metal. Due to this uncertainty, the result for tin in sample A2-S1 was qualified as estimated and flagged "J".

III. Blanks

The laboratory (method) blank yielded no reportable concentrations of the analytes. No qualifications were applied.

IV. Laboratory Control Sample (LCS)

The LCS included two standard reference materials (basalt rock and obsidian rock) from the National Institute of Standards and Technology (NIST), plus the customary laboratory-generated ones. All percent recoveries from all LCS analyses were within established control limits. No qualifications were applied.

V. Surrogates

Surrogates are not used in this analysis. Internal standard recoveries wee within established control limits. No qualifications were applied.

VI. Other Quality Control Measures

Almost all (initial, continuing, and low-concentration continuing) calibration results were within their various QC limits. The only exceptions were the low-concentration continuing calibration results for boron, which exceeded QC limits with concentrations of 201 to 205 percent. Boron was not detected in any field samples, so no qualifications were applied. In addition, there were no irregularities with interference check samples and the serial dilution performed on sample A2-S1. Again, no qualifications were applied.

VII. Comments

Many analytes in all field samples were reported from re-analyses at 10- or 100-fold dilutions, to bring the results within linear calibration range and minimize matrix interference. No qualifications were applied.

VIII. Overall Assessment of Data

Overall data quality is acceptable, with no significant qualifications applied. All data are usable as qualified for their intended purposes.

ALPHA SPECTROSCOPY ANALYSES

I. Method Description and Specific Objectives

These analyses, using standard alpha spectroscopy methods are intended to help characterize the thorium isotopes (228, 230, and 232) in the field samples.

II. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

MS/MSD analyses were not performed. The sample duplicate analysis was performed on sample A2-S1 and yielded satisfactory results. No qualifications were applied.

III. Blanks

The laboratory (method) blank yielded low activities for thorium-228 and -230. Field sample results for thorium-230 (a daughter of uranium-238) were considerably higher than the blank concentration, so no qualifications were applied. However the field sample results for thorium-228 (a daughter of thorium-232) were only slightly greater than the blank. Therefore the field sample results for thorium-228 were qualified as estimated, possibly biased high, and flagged "J".

IV. Laboratory Control Sample (LCS)

All percent recoveries from the LCS analyses were within established control limits. No qualifications were applied.

V. Surrogates

Surrogates are not used in this method. A "tracer" if thorium-229 was included in sample preparation and provides the same information as a surrogate. All recoveries were within QC limits so no qualifications were applied.

VI. Comments

Calibration results were within their QC limits.

VII. Overall Assessment of Data

Overall data quality is acceptable, with no significant qualifications applied. All data are usable as qualified for their intended purposes.

GAMMA SPECTROSCOPY ANALYSES

I. Method Description and Specific Objectives

Gamma spectroscopy was used to characterize a variety of daughters of the naturally occurring uranium and thorium already discussed. The method is the standard one of putting a sample in an air-tight can (to

retain radon until it decays) and placing that in a suitable counting instrument. In these reports, total propagated uncertainty (TPU) is given as the "one-sigma" level (range of 68 percent about the reported activity) instead of the "two-sigma" results (range of 95 percent) more generally used.

II. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

No MS/MSD analyses were included. Laboratory duplicate analysis yielded results well within QC limits. No qualifications were applied.

III. Blanks

The laboratory blank yielded no detectable analyses. No qualifications were applied.

IV. Laboratory Control Sample (LCS)

All percent recoveries from the LCS analysis were within established control limits. No qualifications were applied.

V. Surrogates

Surrogates are not used in this radioanalytical method.

VI. Comments

Calibration results were within their QC limits.

VII. Overall Assessment of Data

Overall data quality is acceptable, with no qualifications applied. All data are usable as reported for their intended purposes.

RADON EMANATION ANALYSES

I. Method Description and Specific Objectives

SwRI used 1-liter gas-tight "emanation chambers" for testing nine portions of each field sample after appropriate heat treatment and, if called for, re-hydration. After a suitable ingrowth period (5 days or more), each emanation chamber was connected to a 98-milliliter "Lucas Cell", which has a lining that flashes when alpha radiation hits it. Gamma spectroscopy was also used to determine some isotopes. The Lucas Cell is a standard technique for determining radon emanations from various materials, including drinking water and mine tailings. Determination of these radon emanation coefficients (the equilibrium radon activity divided by the radium-226 activity) under the various "conditions" is the primary objective of the study.

II. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

No MS/MSD analyses are included. No qualifications were applied for the data gap. Most laboratory duplicate results were well within QC limits. The exceptions were Condition 5 (heated at 250 °C for 48 hours) for sample ID7-84-85 and Condition 6 (Condition 5 followed by re-hydration to 10 percent moisture) for sample A2-S1. Those two results are qualified as estimated, apparently due to heterogeneity in the field samples, and flagged "J". Similar irregularities may exist in non-tested samples.

III. Blanks

The laboratory (method) blank yielded no detectable analytes. No qualifications were applied.

IV. Laboratory Control Sample (LCS)

All percent recoveries from the LCS analyses were within established control limits. LCS were created from both a "radon generator" designed to interface directly with a Lucas Cell and with capsules of a suitable solid-phase standard placed in an emanation cell and treated as a field sample. No qualifications were applied.

V. Surrogates

Surrogates are not used in these radioanalytical methods.

VI. Comments

None.

VII. Overall Assessment of Data

Overall data quality is acceptable, with no significant qualifications applied. All data are usable as qualified for their intended purposes.

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6220 CULEBRA ROAD 78238-5166 • P.O. DRAWER 28510 78228-0510 • SAN ANTONIO, TEXAS, USA • (210) 684-5111 • WWW.SWRI.ORG

CHEMISTRY AND CHEMICAL ENGINEERING DIVISION
DEPARTMENT OF ANALYTICAL AND ENVIRONMENTAL CHEMISTRY

April 27, 2016

Tetra Tech
415 Oak Street
Kansas City, Missouri 64106

Attention: Rob Monnig

Subject:		
	Case:	1116399
	SwRI Project Number:	21431.01.001
	SDG:	588049
	SwRI Task Order Number:	160115-1
	SwRI Sample Receipt Number:	56591, 56639, 56785, 56876
	Samples Received:	11.20.15, 12.01.15, 12.29.15, 01.15.16
	Fraction:	Various Analyses

Dear Mr. Monnig:

Please find the enclosed results for the six (6) overall solid samples received on the above referenced date. Should you have any questions, please feel free to contact me at 210-522-3320, jacqueline.ranger@swri.org.

Sincerely,

Jackie Ranger
Manager

APPROVED:

Michael J. Dammann
Director

JR: aa
Encl

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SOUTHWEST RESEARCH INSTITUTE
CLIENT: Tetra Tech
TASK ORDER#: 160115-1
SRR#: 56591, 56639, 56785, 56876
SDG: 588049
VTSR: 11.20.15, 12.01.15, 12.01.15, 01.15.16
PROJECT#: 21431.01.001

FINAL REPORT

Analytical Report

Evaluation of the West Lake Smolder Event

Prepared by
Jackie Ranger

Prepared for
Tetra Tech
SwRI Project Number 21431.01.001
SwRI Task Order Number 160115-1

INTRODUCTION

Six solid samples were received at SwRI in four shipments for support of the West Lake Smolder Event to determine the potential for radioisotope release under various conditions. The samples were logged into SwRI's Laboratory Information Management System (LIMS) under Sample Receipt Records (SRR) #56591, 56639, 56785, and 56876. The samples were assigned to task order #160115-1. Table 1 contains the sample information. Photographs of each sample ("as received") are presented in Appendix A.

Table 1 Sample Information

SwRI SRR#	Sample Receipt Date	SwRI System ID	Customer Sample ID
56591	11/20/2015	588049	1D7-84-85
56639	12/01/2015	588556	A2-S1
56785	12/29/2015	590212	A1-AC-1
56785	12/29/2015	590213	A1-AC-3
56785	12/29/2015	590214	A2-AC-21
56876	1/15/2016	591000	WL-234CT

EXPERIMENTAL

Multiple analytical techniques were used for the project. They were Radon Emanation, Gamma Spectrometry, Thermogravimetric Analysis (TGA), Inductively Coupled Plasma – Mass Spectrometry (ICP-MS), Alpha Spectrometry, and Inductively Coupled Plasma – Atomic Emission Spectrometry (ICP-AES)

TGA

The six samples were analyzed "as received" via TGA. This technique uses a highly sensitive balance to monitor the weight loss of a sample versus temperature. TGA also simultaneously collects heat flow information to determine whether events are endothermic or exothermic. The TGA graphs are provided in Appendix B. The moisture release curves of the samples aided in determining which moisture contents the samples were tested.

ICP-MS

The six samples "as received" were homogenized, and aliquots of each were dried. The dried samples were ground to fine powder with a mortar and pestle. One gram aliquots were then digested in open vessels with concentrated nitric, perchloric, hydrofluoric, and hydrochloric acids. The resulting digestates were analyzed for isotopic uranium by ICP-MS, using SW-846 Method 6020 as a guide. The isotopic uranium results are included in Appendix C. The reported results are on a dry weight basis.

For ICP-MS analysis, a sample is acid digested to solubilize the desired analyte. The digestate is introduced by nebulization into an inductively coupled plasma, which decomposes any compounds into their molecular or elemental state. During decomposition, the elements are ionized, i.e. $UO_2 \rightarrow U \rightarrow U^+$, and the ions are passed into a mass spectrometer where the signal is proportional to concentration. By comparing the signal of the sample to the signal from reference standards, the amount of the analyte can be calculated. It should be noted that since the technique uses a mass spectrometer for detection, the instrument measures individual isotope concentrations, not total elemental concentrations. This allows the determination of not just the elemental concentration, but also the isotopic composition. For example, it allows the measurement of four uranium isotopes (U-234, U-235, U-236, and U-238), not only the total uranium concentration.

All instrument QC criteria were met. The percent recoveries were within 90-110% for the initial and continuing calibration verifications. No analytes were detected above SwRI's reporting limits in the initial and continuing calibration blanks. The low level check standard recoveries were within 50-150%. The percent recoveries for the ICSAB interference check samples were within 80-120%. The limits were met for the ICSA interference check samples. The ICSA limits are the ICSA true value ± 2 times the reporting limit. The internal standard recoveries were within 30-120% for all reported samples.

A few qualifiers were used in the isotopic uranium report. "U" indicates that an analyte was not detected above SwRI's reporting limit. "D" indicates that the result was reported from a dilution.

Results for the preparation/digestion blank (ID: PB16A26KE3), laboratory control samples (IDs: LCS16A26KE5, LCS16A26KE6, LCS16A26KE7, and LCS16A26KE8), and Sample A2-S1 matrix spike and duplicate, which were prepared with the samples, are also included. No analytes were detected above their respective reporting limits in the preparation blank. The recoveries for the laboratory control samples were within 80-120% for the spiked analytes. For the matrix spike analysis, the U-236 recovery was 74.8%, which rounds to 75% and meets the laboratory's 75-125% control limits. The matrix spike recoveries were not within 75-125% for the other uranium isotopes. However, since the parent sample results were more than four times greater than the spike added amounts, no limits were applied and the results were not flagged with a data qualifier. For the sample duplicate, the relative percent differences (RPDs) were less than 20% for all analytes.

ALPHA SPECTROMETRY

Five hundred milligram aliquots of the dried, ground samples were digested in open vessels with concentrated nitric, perchloric, and hydrofluoric acids. The resulting digestates were analyzed for isotopic thorium by alpha spectrometry. The isotopic thorium (Th-228, Th-230, and Th-232) results are provided in Appendix D. The reported results are on a dry weight basis. The actual calculated activity results are reported for all samples including non-detects.

For alpha spectrometry, a sample is acid digested to solubilize the desired analyte. The target analyte is chemically separated and purified via ion exchange. The purified analyte is prepared for counting via a process called mounting, where the analyte is put in a preferred geometry

designed to allow the alpha particles to quantitatively escape, to be vacuum stable, and in a size optimized for the equipment being used. The mounted sample is placed in close proximity to the alpha detector. Both the sample and detector are in a vacuum chamber, which is evacuated during counting. The close proximity to the detector, vacuum, and special mounting procedures are necessary due to the nature of alpha particles being very easy to shield, even by a small amount of air. The alpha particles interact with the detector and generate a distribution based on kinetic energy of the alpha particle and number of alpha particles at that energy. Since the energy of an alpha particle is diagnostic of the isotope from which it came, measuring the number of detections from a given energy allows the determination of the activity of that isotope in the sample.

Thorium-229 was used as a tracer to follow chemical separation efficiency and losses. All tracer FWHM (Full Width at Half Maximum) were within the control limits of 100keV. All reported results for the tracer were within the control limits of 30-110%. The reported results are "U" flagged if the result was less than two times the TPU. "U" indicates that the result was statistically not detected. TPU was calculated using 1 sigma counting error.

A preparation blank (ID: PBWB11KE2) was processed and analyzed with the samples. Th-232 was not detected in the preparation blank, and is "U" flagged. Th-228 and Th-230 were detected in the preparation blank. For Th-230, since all associated samples contained greater than five times the preparation blank level of Th-230, the Th-230 results are not flagged with a qualifier. The Th-228 preparation blank result is "B" flagged due to its elevated activity. For the associated samples, the Th-228 results are also flagged with "B". The Th-232 result for the laboratory control sample was within the control limits of 75-125% recovery. Sample A2-S1 was prepared and analyzed as a duplicate. The duplicate error ratios (DER) were less than three for all three isotopes.

ICP-AES

Aliquots of the dried, ground samples were readied for total metals analysis using three techniques. The first technique was a closed vessel digestion using concentrated nitric, hydrochloric and hydrofluoric acids (Prep Batch 20160127-P003). Boron, lead, and sulfur were reported from this digestion. The second technique was a lithium metaborate/tetraborate fusion (Prep Batch 20160127-P004). Barium, chromium, strontium, titanium, zirconium, and silicon were reported from this fusion. The third technique (Prep Batch 20160126-P004) was performed using concentrated nitric, perchloric, hydrofluoric and hydrochloric acids in an open vessel. The remaining metals were reported from this digestion. All analytes were reported by ICP-AES, SW-846 Method 6010B.

The total metals results are provided in Appendix E. The reported results are on a dry weight basis. In the "Total Metals as Oxides Summary" table, any analyte sample concentration greater than 0.05% was calculated and reported as an oxide. Loss on ignition at 1000^{o}C was determined on the original, dried, ground samples. The reported "Sums" were calculated by adding the oxide concentrations and the LOIs. The sums for the samples ranged from 90-100%

For ICP-AES, a sample is acid digested to solubilize the desired analyte. The digestate is introduced by nebulization into an inductively coupled plasma, which decomposes any compounds into their molecular or elemental state. During decomposition, the elements are ionized, and the ions give off their characteristic wavelength of light. The intensity of this light is proportional to the concentration of the element in the sample. By comparing the signal of the sample to the signal from reference standards, the amount of the analyte can be calculated.

All instrument QC criteria were evaluated. The recoveries were within 90-110% for the initial and continuing calibration verifications. The low level check standard recoveries were within 50-150% with the exceptions of boron, which ranged from 50-205%. Since boron was not detected in the associated samples, no reruns were performed. No analytes were detected above SwRI's reporting limits in the initial and continuing calibration blanks. The percent recoveries for the ICSAB interference check samples were within 80-120% for the spiked analytes. The limits were met for the ICSA interference check samples. The ICSA limits are the greater of either the ICSA true value ± 2 times the reporting limit, or 80-120% of the true value. There are no internal standard criteria defined in ICP-AES Method 6010B; however, the internal standard recoveries were within 80-120% for all reported samples.

A number of qualifiers were used in the total metals report. "U" indicates that an analyte was not detected above SwRI's reporting limit. "D" indicates that the result was reported from a dilution. "*" indicates that the duplicate RPD is greater than 20%. "N" indicates that the matrix spike recovery was not within 75-125%.

No analytes were detected in the Prep Blanks (Sample IDs PB16A26KE3, PB16A27KE1, and PB16A27KE2) above SwRI's reporting limits. Two solid laboratory control samples (NIST SRM 278 Obsidian Rock and NIST SRM 688 Basalt Rock) were utilized during the total metals sample preparation techniques. The sample IDs for SRM 278 are LCS16A26KE7 and LCS16A27KE3. The sample IDs for SRM 688 are LCS16A26KE8 and LCS16A27KE4. The recoveries were within 80-120% for the analytes with certified values with the exception of thorium for SRM 278 (at 133.9%). It should be noted that the SRM certified value is not greater than 10 times the reporting limit for thorium in the associated prep. Aqueous laboratory control samples (Sample IDs LCS16A26KE3 and LCS16A26KE4) were also digested during the mixed acid, open vessel digestion (Prep Batch 20160126-P004). The recoveries were within 80-120% for the spiked analytes.

Sample A2-S1 was QC'd. The results are "N" flagged for lanthanum and tin due to low matrix spike (MS) recoveries at 59.0% and 46.2%, respectively. Most of the other MS recoveries were within 75-125% with exceptions. The exceptions included aluminum, calcium, cobalt, copper, iron, magnesium, manganese, nickel, and potassium. The exceptions were not flagged, since the parent sample results were more than four times greater than the spike added amounts. The results are "*" flagged for tin, due to the high duplicate RPD at 30.5%. For the remaining analytes, the duplicate RPDs were less than 20% or the control limit of +/- the reporting limit was met.

RADON EMANATION

The radon emanation coefficients were measured on sample aliquots that had been subjected to many different thermal treatments, and at several different moisture contents. The samples "as received" were carefully homogenized before any aliquots are taken. A description of the treatment and moisture contents are shown in Table 2.

The radon emanation in-growth and measurements were performed with the samples at laboratory temperature after any pre-treatment. Approximately 50 gram sample aliquots were weighed into the emanation chamber (a 1 liter wide mouth jar fitted with gas valves and an internal fan, see Figure 1). The emanation chambers were then purged for a minimum of ten minutes with nitrogen. The purge gas was dry for any sample run at a saturation point less than 30%, and the purge gas was humidified by running it through a bubbler for saturations greater 30%. The relative humidity of the purge gas was adjusted to fit the moisture saturation of the samples in order to prevent gross changes in the soil moisture content during the purging period prior to in-growth.

Following purging, the sealed chambers were left to in-grow for at least five days. After the in-growth period, the soil contents were lightly shaken to mix. The headspace gas was well mixed for at least thirty minutes with the internal fan. A gas aliquot of ten milliliters was pulled from the chamber and introduced into an evacuated, 98 milliliter Lucas cell under vacuum using the radon emanation apparatus (see Figures 2 and 3). A Lucas cell is a vacuum chamber with an optical window, and all other surfaces coated with a special substance that glows when hit by alpha radiation. The flashes of light are counted by a photomultiplier tube, and are proportional to the amount of radon in the gas sample. Three Lucas cells were utilized. The efficiencies were determined for each Lucas cell. The efficiencies ranged from 62-66%. The Lucas cell standardizations were performed using a Pylon radon generator (Model RN-1025). The radon generator was verified via gamma spectrometry. It was verified to be 95-105% recovery within one sigma error of the true value supplied by the manufacturer.

The Lucas cell was held for at least one hour for radon daughter in-growth. It was then counted for thirty minutes to determine the radon activity. A Ludlum Model 2000 Scaler with a Model 182 Radon Flask Detector (see Figure 4) was used. After counting, the Lucas cell was sparged multiple times with helium to ready for the next sample.

The results for the nine thermal test conditions are provided in Appendix F for the Equilibrium Radon (Rn-222) Concentrations and the Radon Emanation Coefficients. The results "as tested" and on a "dry weight" basis are included. The Radon Emanation Coefficient is calculated as the Equilibrium Radon Concentration divided by the Ra-226 result. TPU was calculated using 1 sigma counting error. The actual calculated activity results are reported for all samples including non-detects.

One preparation blank (or bottle blank) was prepared with the samples. It was analyzed twice. Both results were less than two times the TPU, and are "U" flagged. "U" indicates that the result was statistically not detected. A laboratory control sample (LCS) was prepared and analyzed every analysis day. The daily LCSs were generated from a Pylon radon generator (Model RN-

1025). Another type of LCS was prepared from a radium standard. An aliquot of the standard was added to a polyethylene capsule, placed in an emanation chamber, and allowed to in-grow prior to analysis. All laboratory control sample recoveries were within the control limits of 75-125%. The QC results are provided in Appendix F.

One duplicate sample was prepared and analyzed for each thermal test condition. The majority of the RPDs (relative percent differences) were less than 25% for the equilibrium radon concentrations (Rn-222). The exceptions were Sample 1D7-84-85 for Condition 5 at 49.9% (and 43.9% for the re-analysis); and Sample A2-S1 for Condition 6 at 85.6% (and 87.1% for the re-analysis). Some samples were analyzed multiple times. The replicate analyses are summarized on the Duplicate/Replicate Analysis Data Sheets, which are provided in Appendix F. The RPDs for the replicates were less than 25%.

The duplicate analyses were also evaluated using the duplicate error ratio (DER) between the original sample and it's duplicate. Most of the duplicate error ratios were less than three for the equilibrium radon concentrations (Rn-222) and the radon emanation coefficients. Exceptions were Sample 1D7-84-85 for Condition 5 (at 6.9 and 5.7, respectively) and Sample A2-S1 for Condition 6 (at 11.0 and 6.8, respectively).

Table 2 - Thermal Test Conditions

Thermal Test Condition	Sample Treatment	Moisture Saturation (relative)
1	None ("As Received")	"As Received"
2	Heated at 105°C for 16 hours	"As Found" After Treatment
3	Heated at 250°C for 16 hours	"As Found" After Treatment
4	Heated at 250°C for 48 hours	"As Found" After Treatment
5	Heated at 250°C for 48 hours	"As Received"
6	Heated at 250°C for 48 hours	10%
7	None ("As Received")	Saturated
8	Heated at 60°C until at or below desired saturation	Approximately 2% (Ranges from 0.7-2%)
9	Heated at 60°C until at or below desired saturation	Approximately 10% (Ranges from 7-13%)

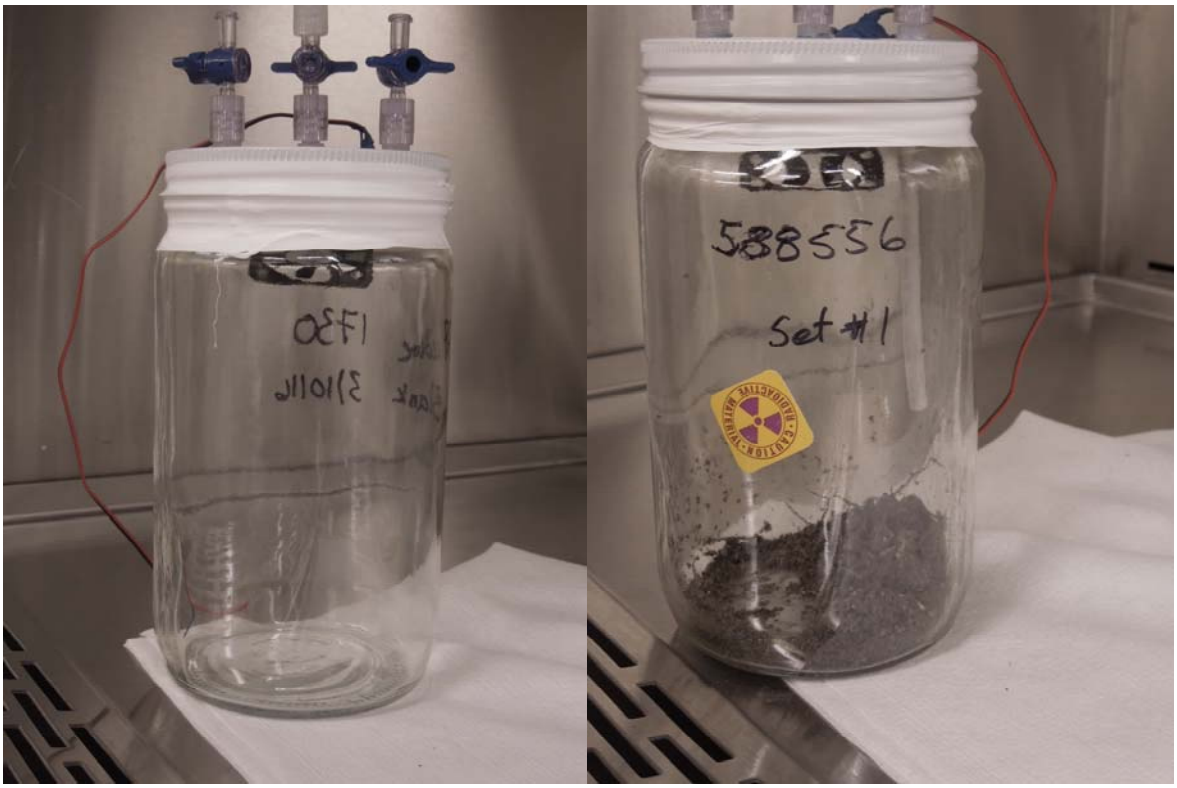


Figure 1. Emanation Chambers of the Preparation Blank and one Sample



Figure 2. Lucas cell (on the right) and the vacuum gauge



Figure 3. Radon Emanation Apparatus

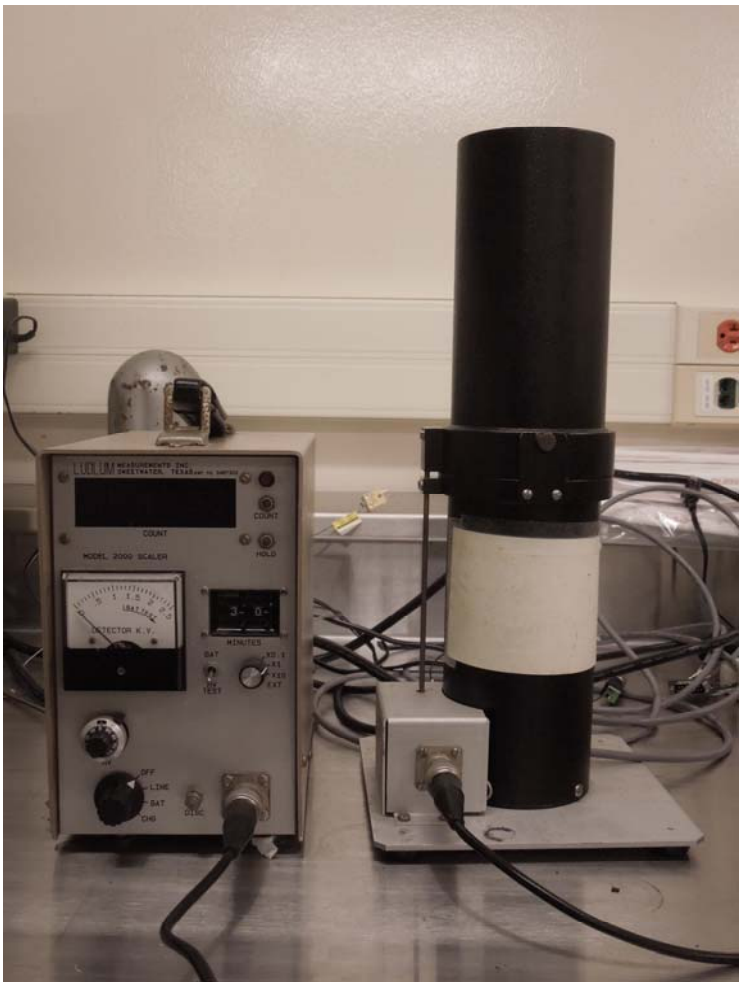


Figure 4. Ludlum Model 2000 Scaler with a Model 182 Radon Flask Detector

GAMMA SPECTROMETRY

Aliquots of the "as received" samples were analyzed via gamma spectrometry. The Radium-226 (reported as Ra-226 Bulk) results are provided in Appendix F. The results "as tested" (which are equivalent to "as received" for this parameter) and on a "dry weight" basis are included. The Ra-226 results were calculated as the averages of its daughters, Bismuth-214 (609, 1120, and 1764 keV lines used for quantitation) and Lead-214 (295 and 351 keV lines used for quantitation). TPU was calculated using 1 sigma counting error.

The gamma spec results for the isotopes of the uranium 238, uranium 235, and thorium 232 decay series (with the exception of Radium-226) are provided in Appendix G for the bulk samples. The results are reported on a "dry weight" basis. The reported results are "U" flagged if the result was less than two times the TPU, less than the MDA, or considered "not identified". "U" indicates that the result was statistically not detected. TPU was calculated using 1 sigma counting error. The actual calculated activity results are reported for all samples including non-detects. Sample A2-S1 was analyzed in duplicate. The duplicate analyses were evaluated using

the duplicate error ratio (DER). Most of the duplicate error ratios were less than three. One exception was Radium-223 at 3.9. DER was not calculated for "U" flagged isotopes.

Gamma spectrometry was also performed on the samples remaining in the emanation chambers after all radon measurements were completed to confirm the Radium-226 content. The Ra-226 results were calculated as the averages of its daughters, Bismuth-214 (609, 1120, and 1764 keV lines used for quantitation) and Lead-214 (295 and 351 keV lines used for quantitation). The Bi-214, Pb-214, and Ra-226 results are provided in Appendix F. The thermal test condition results "as tested" and on a "dry weight" basis are included. One duplicate sample was prepared and analyzed for each thermal test condition. The duplicates were evaluated using the duplicate error ratio (DER). The majority of the duplicate error ratios were less than three for Bi-214, Pb-214, and Ra-226. One exception was Sample 1D7-84-85 for Condition 5 for Bi-214 at 3.6.

For gamma spectrometry, solid samples are placed in gas-tight containers to prevent radon gas from escaping, and allowing the in-growth of radon daughters. The samples are placed directly, in close proximity to the gamma detector. The gamma photons interact with the detector and generate a distribution based on the energy of the photon and number of photons at that energy. Since the energy of a gamma photon is diagnostic of the isotope from which it came, measuring the number of detections from a given energy allows the determination of the activity of that isotope in the sample.

Appendix A
Sample Photographs



SwRI System ID 588049, 1D7-84-85



SwRI System ID 588556, A2-S1



SwRI System ID 590212, A1-AC-1



SwRI System ID 590213, A1-AC-3



SwRI System ID 590214, A2-AC-21



SwRI System ID 591000, WL-234CT

Appendix B
TGA Graphs

Customer Sample ID: 1D7-84-85

<< TG/DTA >>

Data Name:160210_588049

Date: 16/ 2/10 13:25

Sample: 588049

52.2702 mg

Reference: mt pan

0 mg

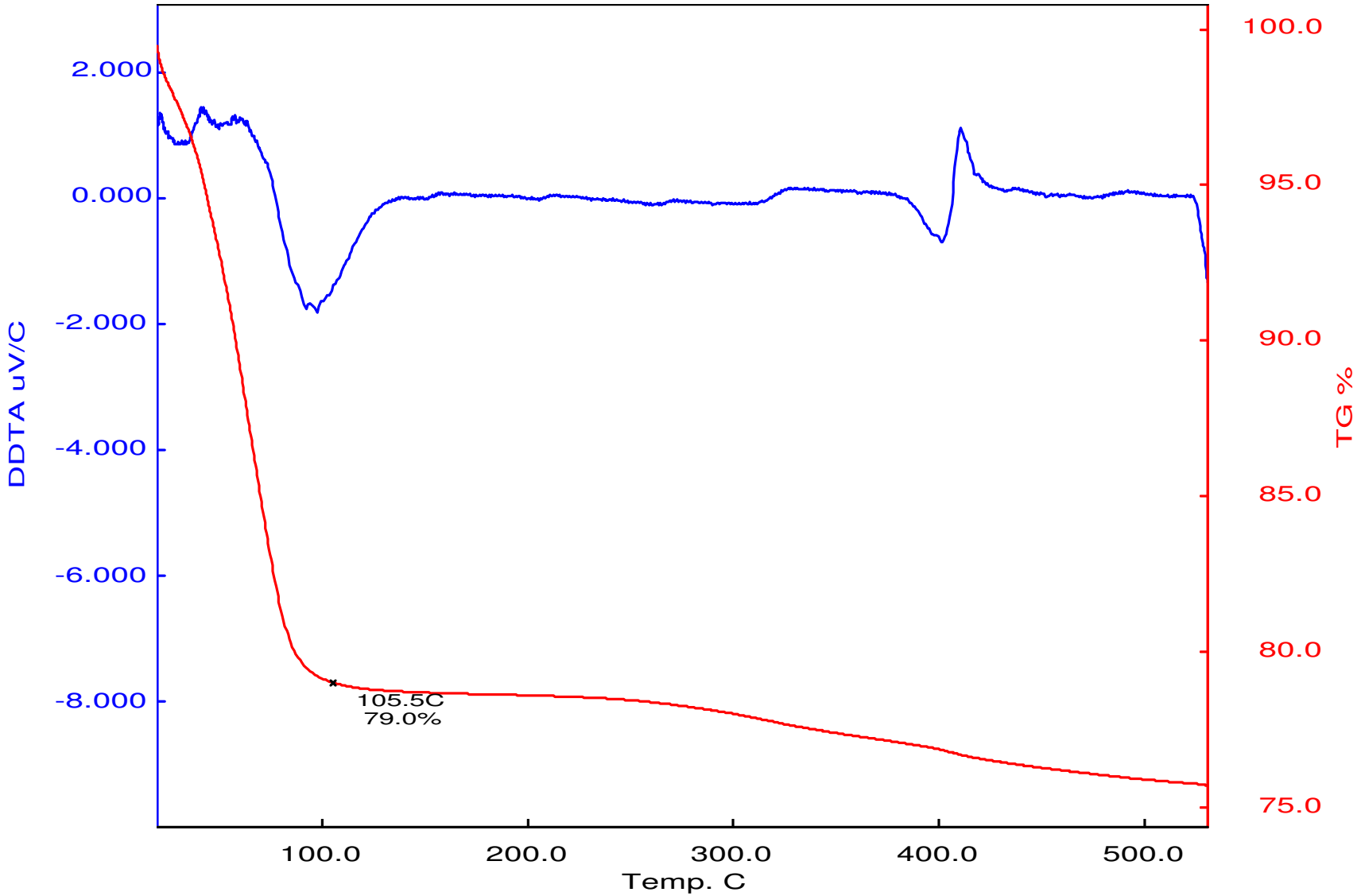
Temperature Program:

			[C]	[C/min]	[min]	[sec]
1	25	-	25	40	1	0.2
2*	25	-	590	10	2	0.2

Comments:

Operator rss

AL PAN, AIR



SwRI

Customer Sample ID: A2-S1

000019

<< TG/DTA >>

Data Name:160210_588556

Date: 16/ 2/10 10:23

Sample: 588556

39.2759 mg

Reference: mt pan

0 mg

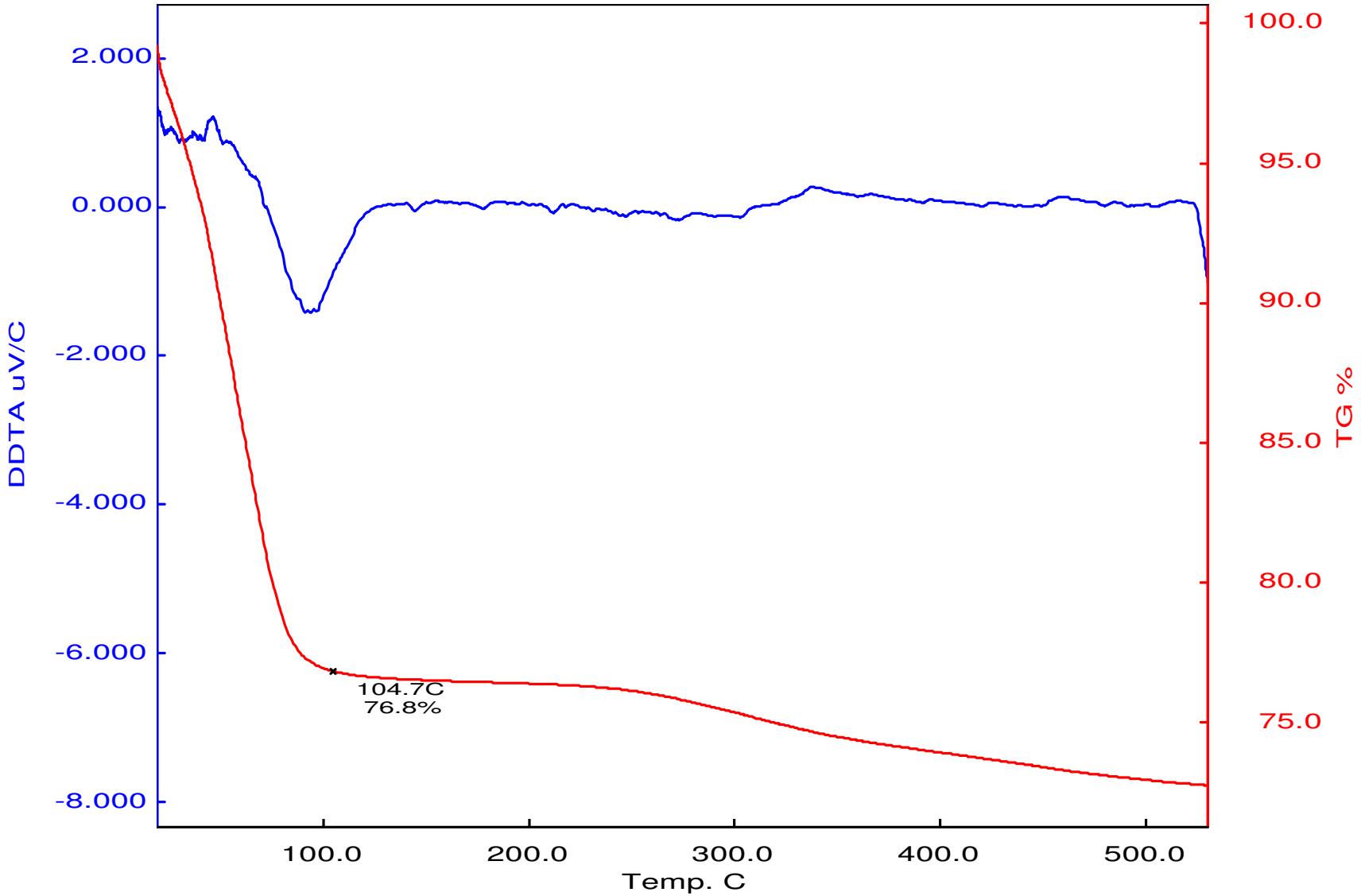
Temperature Program:

			[C]	[C/min]	[min]	[sec]
1	25	-	25	40	1	0.2
2*	25	-	590	10	2	0.2

Comments:

Operator rss

AL PAN, AIR



SwRI

Customer Sample ID: A2-S1 Duplicate

000020

<< TG/DTA >>

Data Name:160210_588556D

Date: 16/ 2/10 11:58

Sample: 588556D

42.724 mg

Reference: mt pan

0 mg

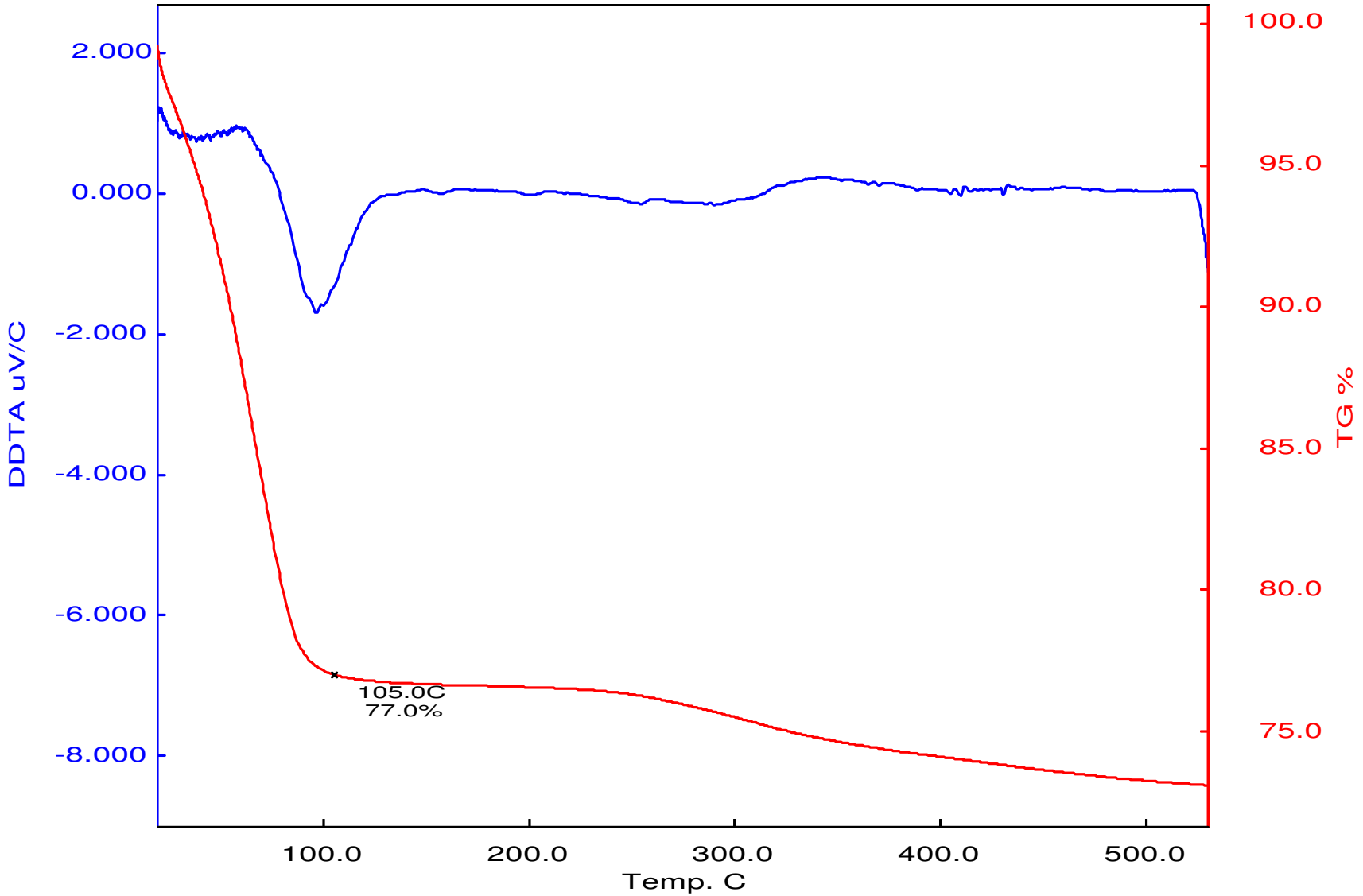
Temperature Program:

			[C]	[C/min]	[min]	[sec]
1	25	-	25	40	1	0.2
2*	25	-	590	10	2	0.2

Comments:

Operator rss

AL PAN, AIR



SwRI

Customer Sample ID: A1-AC-1

000021

<< TG/DTA >>

Data Name:160210_590212

Date: 16/ 2/10 15:10

Sample: 590212

38.7914 mg

Reference: mt pan

0 mg

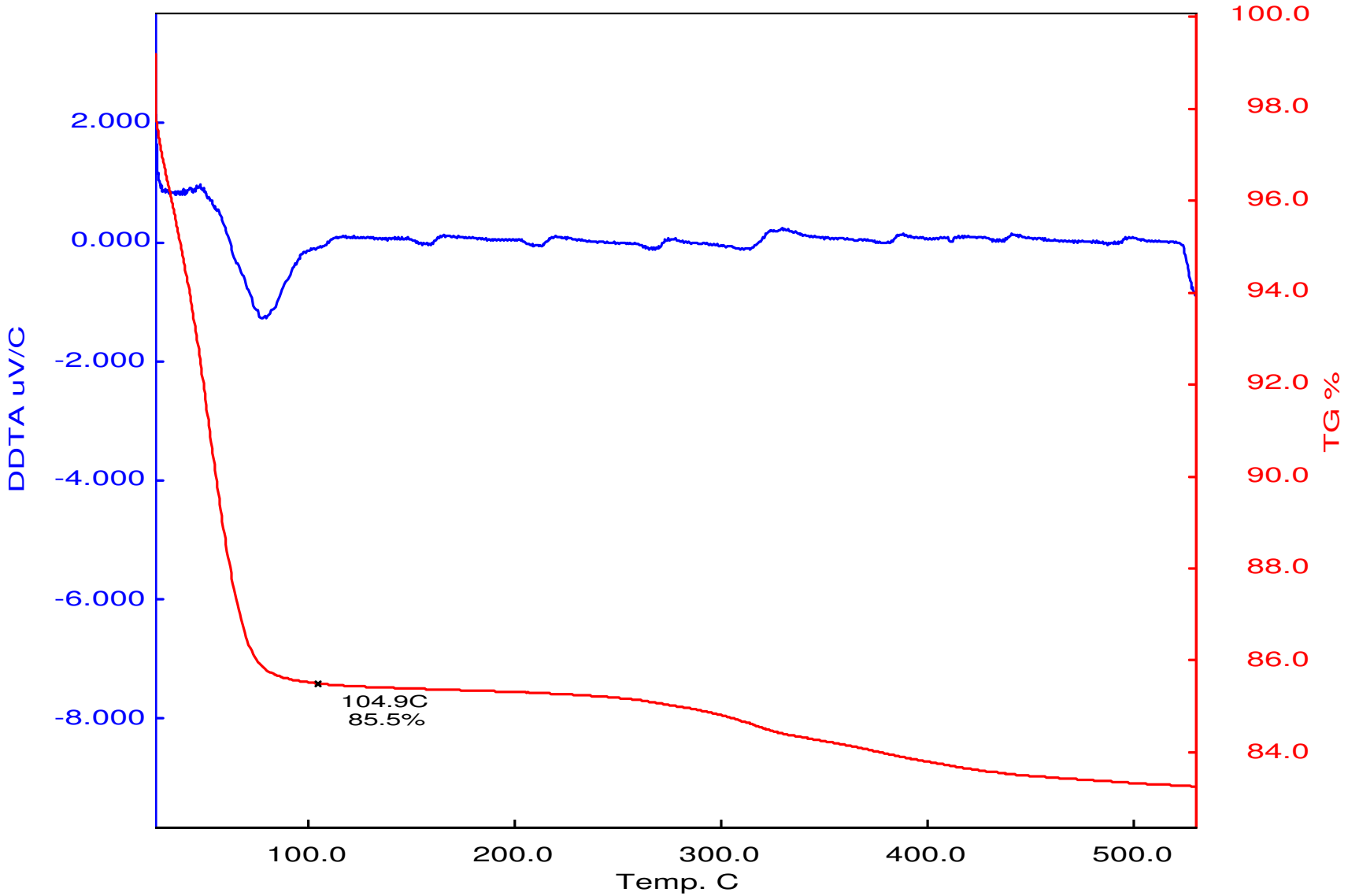
Temperature Program:

			[C]	[C/min]	[min]	[sec]
1	25	-	25	40	1	0.2
2*	25	-	590	10	2	0.2

Comments:

Operator rss

AL PAN, AIR



SwRI

Customer Sample ID: A1-AC-3

000022

<< TG/DTA >>

Data Name:160210_590213

Date: 16/ 2/11 8:20

Sample: 590213

34.8037 mg

Reference: mt pan

0 mg

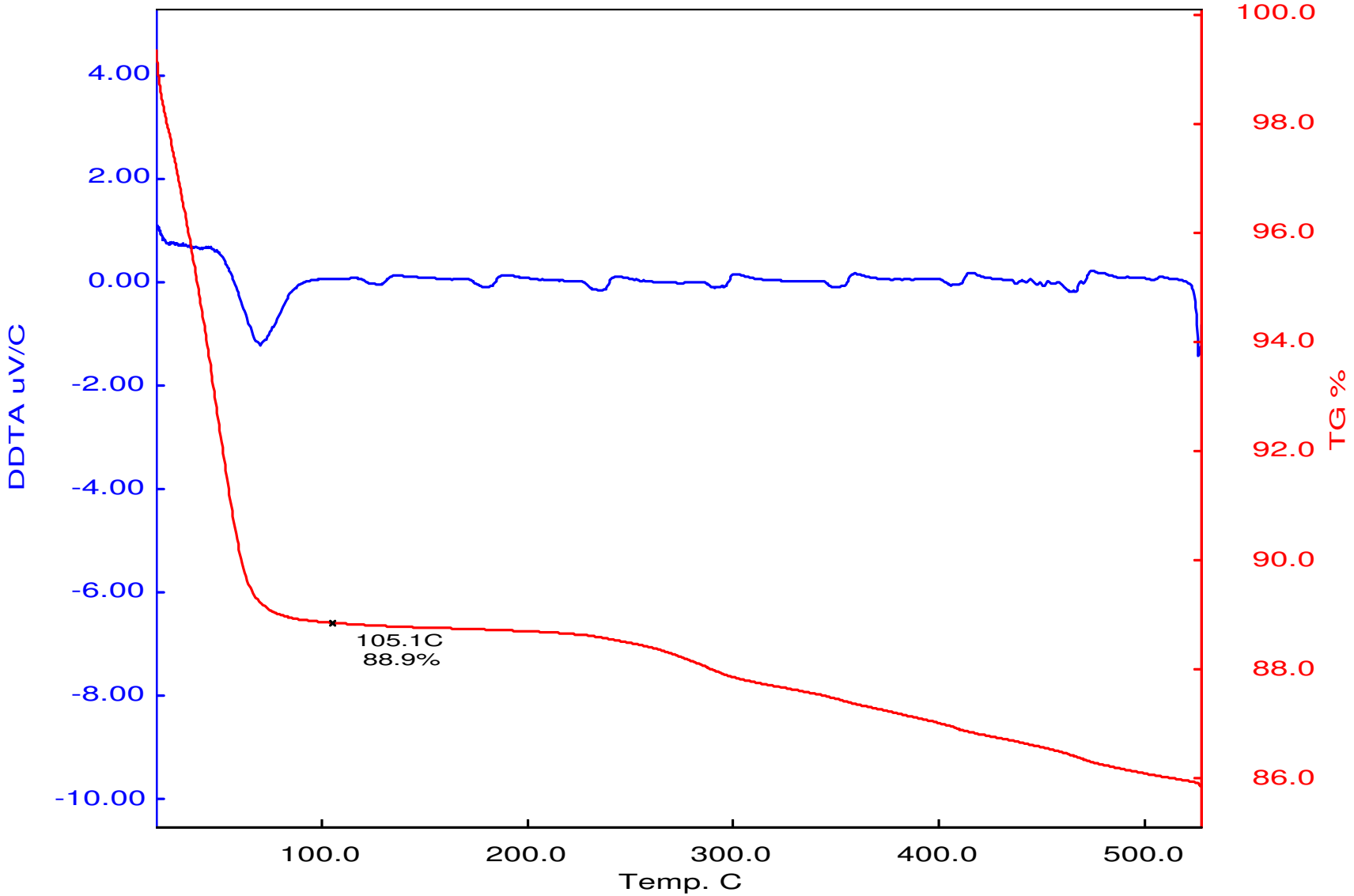
Temperature Program:

			[C]	[C/min]	[min]	[sec]
1	25	-	25	40	1	0.2
2*	25	-	590	10	2	0.2

Comments:

Operator rss

AL PAN, AIR



SwRI

Customer Sample ID: A2-AC-21

<< TG/DTA >>

Data Name:160210_590214

Date: 16/ 2/10 17:42

Sample: 590214

39.267 mg

Reference: mt pan

0 mg

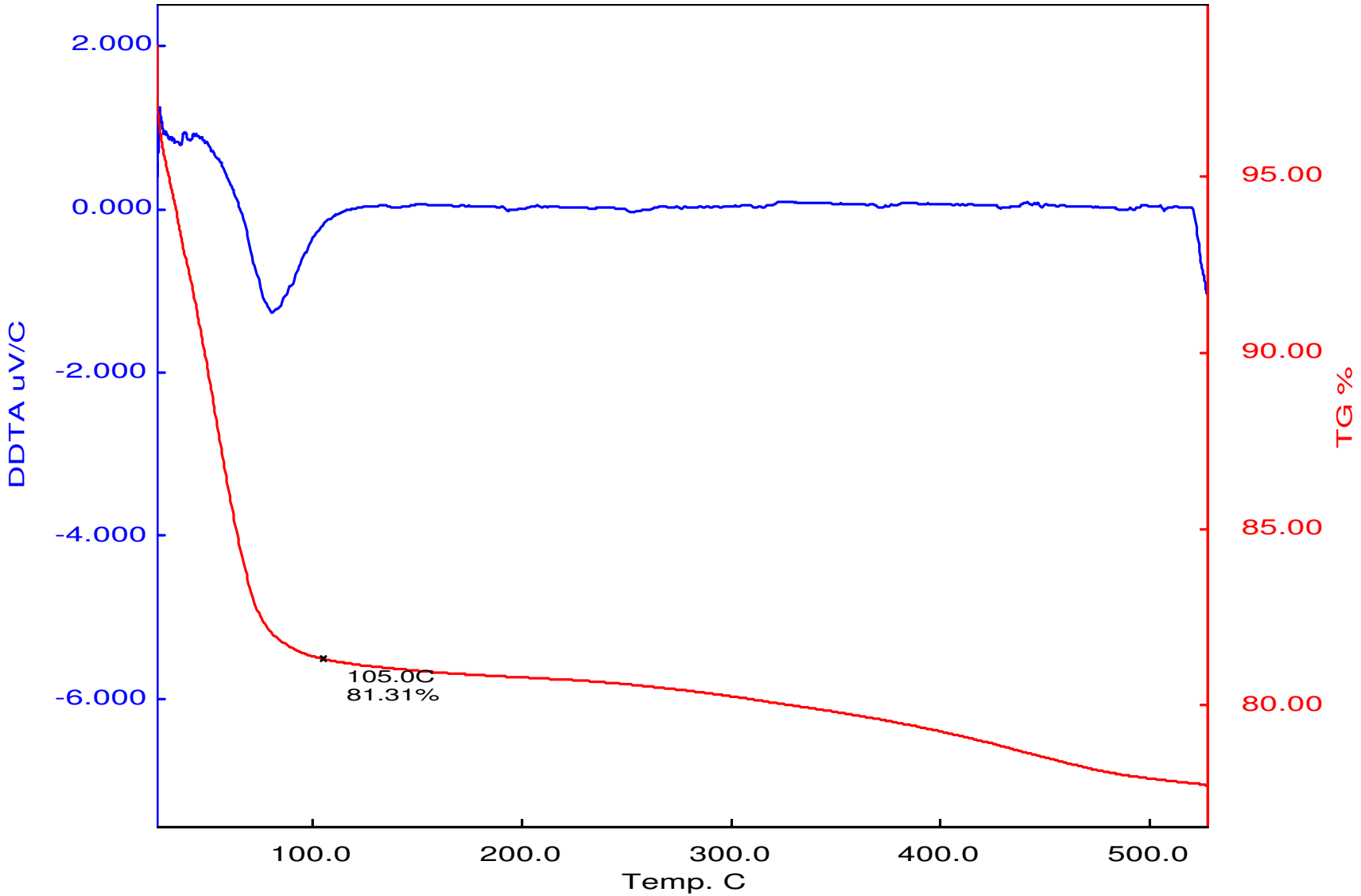
Temperature Program:

			[C]	[C/min]	[min]	[sec]
1	25	-	25	40	1	0.2
2*	25	-	590	10	2	0.2

Comments:

Operator rss

AL PAN, AIR



SwRI

Customer Sample ID: WL-234CT

<< TG/DTA >>

Data Name:160210_591000

Date: 16/ 2/10 16:27

Sample: 591000

36.6993 mg

Reference: mt pan

0 mg

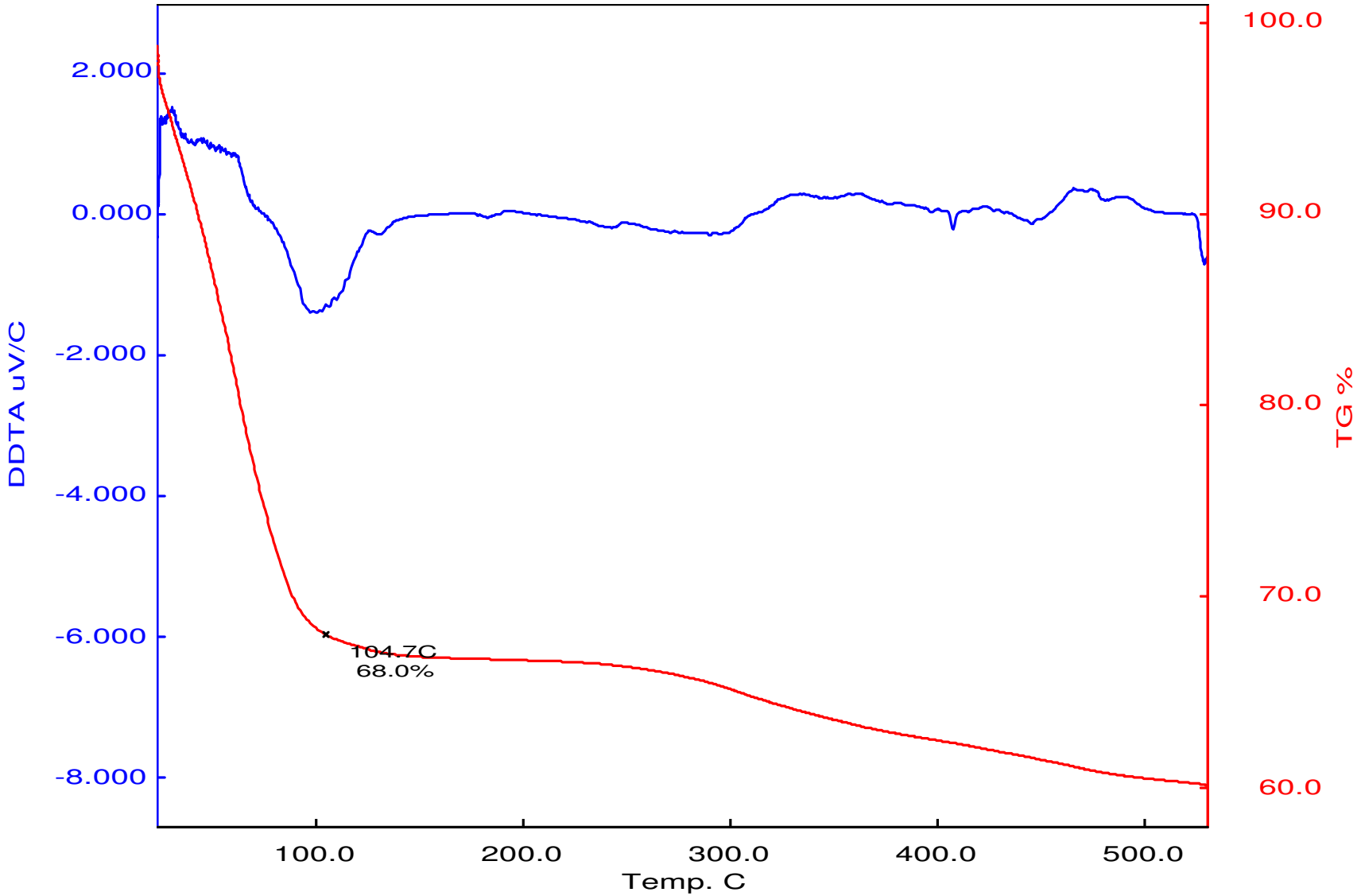
Temperature Program:

			[C]	[C/min]	[min]	[sec]
1	25	-	25	40	1	0.2
2*	25	-	590	10	2	0.2

Comments:

Operator rss

AL PAN, AIR



SwRI

Appendix C
Isotopic Uranium Results for Bulk Samples

SOUTHWEST RESEARCH INSTITUTE

ISOTOPIC URANIUM SUMMARY

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Customer ID	1D7-84-85	A1-AC-1	A1-AC-3	A2-AC-21	A2-S1	WL-234CT
SwRI System ID	588049	590212	590213	590214	588556	591000
Analyte	mg/Kg, Dry Wt. Basis	mg/Kg, Dry Wt. Basis	mg/Kg, Dry Wt. Basis	mg/Kg, Dry Wt. Basis	mg/Kg, Dry Wt. Basis	mg/Kg, Dry Wt. Basis
%U235	0.726%	0.702%	0.703%	0.718%	0.722%	0.704%
Uranium Total	584	584	290	2410	460	216
Uranium-234	0.0322	0.0311	0.0146	0.127	0.0246	0.0109
Uranium-235	4.24	4.10	2.04	17.3	3.32	1.52
Uranium-236	<0.000990	<0.000941	<0.000937	0.00138	<0.000999	<0.000989
Uranium-238	580	580	288	2400	456	215

Note: The %U235 units are wt%, not mg/Kg.

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Metals Report - Form I

Inorganic Analyses Data Sheet

000027

Client Sample ID

1D7-84-85

Type: Unknown

Client: Tetra Tech
Task Order: 160115-1
Lab ID: 588049
Result Units: mg/Kg, dry wt. basis

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Matrix: Solid
% Solids: NA

Case: 1116399
Project: 21431.01.001
Receipt Date: 11/20/2015
Collection Date: NA

CAS No.	Analyte	Result	Qual	M	RL	DF	Prep Batch	Analysis Date/Time
NA	%U235	0.726%	D	MS1	-	100	20160126-P004	02/09/2016 15:19
7440-61-1	Uranium Total	584	D	MS1	0.396	100	20160126-P004	02/09/2016 15:19
13966-29-5	Uranium-234	0.0322	D	MS2	0.00198	10	20160126-P004	02/10/2016 11:37
15117-96-1	Uranium-235	4.24	D	MS1	0.0495	100	20160126-P004	02/09/2016 15:19
13982-70-2	Uranium-236	0.000990	U	MS2	0.000990	1	20160126-P004	02/10/2016 16:27
7440-61-1	Uranium-238	580	D	MS1	0.396	100	20160126-P004	02/09/2016 15:19

Data Reporting Qualifiers (Qual)	***Columns***	***Instruments/Methods (M)***
U - Result is less than the SwRI Reporting Limit (RL)	RL - SwRI Reporting Limit	MS1 - ICP-MS PE DRC II/SW-846 Method 6020
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	MS2 - ICP-MS PE NexION/SW-846 Method 6020
X - Analytical spike criteria was not met	M - Instrument	NA - Not Applicable
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

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Metals Report - Form I

Inorganic Analyses Data Sheet

000028

Client Sample ID

A1-AC-1

Type: Unknown

Client: Tetra Tech
Task Order: 160115-1
Lab ID: 590212
Result Units: mg/Kg, dry wt. basis

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Matrix: Soil
% Solids: NA

Case: 1116399
Project: 21431.01.001
Receipt Date: 12/29/2015
Collection Date: NA

CAS No.	Analyte	Result	Qual	M	RL	DF	Prep Batch	Analysis Date/Time
NA	%U235	0.702%	D	MS1	-	100	20160126-P004	02/09/2016 15:33
7440-61-1	Uranium Total	584	D	MS1	0.377	100	20160126-P004	02/09/2016 15:33
13966-29-5	Uranium-234	0.0311	D	MS2	0.00188	10	20160126-P004	02/10/2016 11:42
15117-96-1	Uranium-235	4.10	D	MS1	0.0471	100	20160126-P004	02/09/2016 15:33
13982-70-2	Uranium-236	0.000941	U	MS2	0.000941	1	20160126-P004	02/10/2016 16:46
7440-61-1	Uranium-238	580	D	MS1	0.377	100	20160126-P004	02/09/2016 15:33

Data Reporting Qualifiers (Qual)	***Columns***	***Instruments/Methods (M)***
U - Result is less than the SwRI Reporting Limit (RL)	RL - SwRI Reporting Limit	MS1 - ICP-MS PE DRC II/SW-846 Method 6020
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	MS2 - ICP-MS PE NexION/SW-846 Method 6020
X - Analytical spike criteria was not met	M - Instrument	NA - Not Applicable
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

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Metals Report - Form I

Inorganic Analyses Data Sheet

000029

Client Sample ID

A1-AC-3

Type: Unknown

Client: Tetra Tech
Task Order: 160115-1
Lab ID: 590213
Result Units: mg/Kg, dry wt. basis

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Matrix: Soil
% Solids: NA

Case: 1116399
Project: 21431.01.001
Receipt Date: 12/29/2015
Collection Date: NA

CAS No.	Analyte	Result	Qual	M	RL	DF	Prep Batch	Analysis Date/Time
NA	%U235	0.703%	D	MS1	-	100	20160126-P004	02/09/2016 15:35
7440-61-1	Uranium Total	290	D	MS1	0.375	100	20160126-P004	02/09/2016 15:35
13966-29-5	Uranium-234	0.0146	D	MS2	0.000937	5	20160126-P004	02/10/2016 11:45
15117-96-1	Uranium-235	2.04	D	MS1	0.0469	100	20160126-P004	02/09/2016 15:35
13982-70-2	Uranium-236	0.000937	U	MS2	0.000937	1	20160126-P004	02/10/2016 16:49
7440-61-1	Uranium-238	288	D	MS1	0.375	100	20160126-P004	02/09/2016 15:35

Data Reporting Qualifiers (Qual)	***Columns***	***Instruments/Methods (M)***
U - Result is less than the SwRI Reporting Limit (RL)	RL - SwRI Reporting Limit	MS1 - ICP-MS PE DRC II/SW-846 Method 6020
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	MS2 - ICP-MS PE NexION/SW-846 Method 6020
X - Analytical spike criteria was not met	M - Instrument	NA - Not Applicable
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

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Metals Report - Form I

Inorganic Analyses Data Sheet

000030

Client Sample ID

A2-AC-21

Type: Unknown

Client: Tetra Tech
Task Order: 160115-1
Lab ID: 590214
Result Units: mg/Kg, dry wt. basis

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Matrix: Soil
% Solids: NA

Case: 1116399
Project: 21431.01.001
Receipt Date: 12/29/2015
Collection Date: NA

CAS No.	Analyte	Result	Qual	M	RL	DF	Prep Batch	Analysis Date/Time
NA	%U235	0.718%	D	MS1	-	1000	20160126-P004	02/09/2016 15:16
7440-61-1	Uranium Total	2,410	D	MS1	3.75	1000	20160126-P004	02/09/2016 15:16
13966-29-5	Uranium-234	0.127	D	MS2	0.00939	50	20160126-P004	02/10/2016 11:35
15117-96-1	Uranium-235	17.3	D	MS1	0.469	1000	20160126-P004	02/09/2016 15:16
13982-70-2	Uranium-236	0.00138		MS2	0.000939	1	20160126-P004	02/10/2016 16:51
7440-61-1	Uranium-238	2,400	D	MS1	3.75	1000	20160126-P004	02/09/2016 15:16

Data Reporting Qualifiers (Qual)	***Columns***	***Instruments/Methods (M)***
U - Result is less than the SwRI Reporting Limit (RL)	RL - SwRI Reporting Limit	MS1 - ICP-MS PE DRC II/SW-846 Method 6020
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	MS2 - ICP-MS PE NexION/SW-846 Method 6020
X - Analytical spike criteria was not met	M - Instrument	NA - Not Applicable
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

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Metals Report - Form I

Inorganic Analyses Data Sheet

000031

Client Sample ID

A2-S1

Type: Unknown

Client: Tetra Tech
Task Order: 160115-1
Lab ID: 588556
Result Units: mg/Kg, dry wt. basis

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Matrix: Soil
% Solids: NA

Case: 1116399
Project: 21431.01.001
Receipt Date: 12/01/2015
Collection Date: NA

CAS No.	Analyte	Result	Qual	M	RL	DF	Prep Batch	Analysis Date/Time
NA	%U235	0.722%	D	MS1	-	100	20160126-P004	02/09/2016 15:23
7440-61-1	Uranium Total	460	D	MS1	0.399	100	20160126-P004	02/09/2016 15:23
13966-29-5	Uranium-234	0.0246	D	MS2	0.00200	10	20160126-P004	02/10/2016 11:40
15117-96-1	Uranium-235	3.32	D	MS1	0.0499	100	20160126-P004	02/09/2016 15:23
13982-70-2	Uranium-236	0.000999	U	MS2	0.000999	1	20160126-P004	02/10/2016 16:29
7440-61-1	Uranium-238	456	D	MS1	0.399	100	20160126-P004	02/09/2016 15:23

Data Reporting Qualifiers (Qual)	***Columns***	***Instruments/Methods (M)***
U - Result is less than the SwRI Reporting Limit (RL)	RL - SwRI Reporting Limit	MS1 - ICP-MS PE DRC II/SW-846 Method 6020
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	MS2 - ICP-MS PE NexION/SW-846 Method 6020
X - Analytical spike criteria was not met	M - Instrument	NA - Not Applicable
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

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Metals Report - Form I

Inorganic Analyses Data Sheet

000032

Client Sample ID

WL-234CT

Type: Unknown

Client: Tetra Tech
Task Order: 160115-1
Lab ID: 591000
Result Units: mg/Kg, dry wt. basis

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Matrix: Soil
% Solids: NA

Case: 1116399
Project: 21431.01.001
Receipt Date: 01/15/2016
Collection Date: NA

CAS No.	Analyte	Result	Qual	M	RL	DF	Prep Batch	Analysis Date/Time
NA	%U235	0.704%	D	MS1	-	100	20160126-P004	02/09/2016 15:38
7440-61-1	Uranium Total	216	D	MS1	0.396	100	20160126-P004	02/09/2016 15:38
13966-29-5	Uranium-234	0.0109	D	MS2	0.000396	2	20160126-P004	02/10/2016 11:47
15117-96-1	Uranium-235	1.52	D	MS1	0.0495	100	20160126-P004	02/09/2016 15:38
13982-70-2	Uranium-236	0.000989	U	MS2	0.000989	1	20160126-P004	02/10/2016 16:53
7440-61-1	Uranium-238	215	D	MS1	0.396	100	20160126-P004	02/09/2016 15:38

Data Reporting Qualifiers (Qual)	***Columns***	***Instruments/Methods (M)***
U - Result is less than the SwRI Reporting Limit (RL)	RL - SwRI Reporting Limit	MS1 - ICP-MS PE DRC II/SW-846 Method 6020
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	MS2 - ICP-MS PE NexION/SW-846 Method 6020
X - Analytical spike criteria was not met	M - Instrument	NA - Not Applicable
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

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Metals Report - Form I

Inorganic Analyses Data Sheet

000033 **SwRI ID**

PB16A26KE3

Type: Blank

Client: Tetra Tech
Task Order: 160115-1
Lab ID: PB16A26KE3
Result Units: mg/Kg

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Matrix: Soil, Solid
% Solids: NA

Case: 1116399
Project: 21431.01.001
Receipt Date: NA
Collection Date: NA

CAS No.	Analyte	Result	Qual	M	RL	DF	Prep Batch	Analysis Date/Time
NA	%U235	-	-	-	-	-	-	-
7440-61-1	Uranium Total	0.400	UD	MS1	0.400	100	20160126-P004	02/09/2016 15:48
13966-29-5	Uranium-234	0.000400	UD	MS2	0.000400	2	20160126-P004	02/10/2016 12:12
15117-96-1	Uranium-235	0.0495	UD	MS1	0.0500	100	20160126-P004	02/09/2016 15:48
13982-70-2	Uranium-236	0.00100	U	MS2	0.00100	1	20160126-P004	02/10/2016 16:17
7440-61-1	Uranium-238	0.397	UD	MS1	0.400	100	20160126-P004	02/09/2016 15:48

Data Reporting Qualifiers (Qual)	***Columns***	***Instruments/Methods (M)***
U - Result is less than the SwRI Reporting Limit (RL)	RL - SwRI Reporting Limit	MS1 - ICP-MS PE DRC II/SW-846 Method 6020
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	MS2 - ICP-MS PE NexION/SW-846 Method 6020
X - Analytical spike criteria was not met	M - Instrument	NA - Not Applicable
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

SOUTHWEST RESEARCH INSTITUTE

000034

Client Sample ID

A2-S1MS

Metals Report - Form VA

Matrix Spike/Matrix Spike Duplicate Sample Recovery

Client: Tetra Tech
Task Order: 160115-1
Lab ID: 588556TFMS
Result Units: mg/Kg, dry wt. basis

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Matrix: Soil, Solid
% Solids: NA

Case: 1116399
Project: 21431.01.001

Analyte	Parent Sample Result	Qual	MS Result	MS Spike Added	MS %Rec	MSD Result	MSD Spike Added	MSD %Rec	%RPD	Control Limit %Rec	Control Limit %RPD	M	Note
%U235	-		-	-	-	-	-	-	-	-	-	NA	
Uranium Total	460	D	502	7.40	567.6%	-	-	-	-	75%-125%	-	MS1	#
Uranium-234	0.0246	D	0.0269	0.000400	575.0%	-	-	-	-	75%-125%	-	MS2	#
Uranium-235	3.32	D	3.52	0.0526	380.2%	-	-	-	-	75%-125%	-	MS1	#
Uranium-236	0.000999	U	0.119	0.159	74.8%	-	-	-	-	75%-125%	-	MS2	
Uranium-238	456	D	499	7.35	585.0%	-	-	-	-	75%-125%	-	MS1	#

Parent value exceeded 4 times the spike added, therefore MS/MSD %Recovery and %RPD are not required for evaluation.

Data Reporting Qualifiers (Qual)	***Columns***	***Instruments/Methods (M)***
U - Result is less than the SwRI Reporting Limit (RL)	M - Instrument	MS1 - ICP-MS PE DRC II/SW-846 Method 6020
N - Matrix spike and/or matrix spike duplicate criteria was not met	MS - Matrix Spike	MS2 - ICP-MS PE NexION/SW-846 Method 6020
X - Analytical spike criteria was not met	MSD - Matrix Spike Duplicate	NA - Not Applicable
E - Result is estimated due to interferences	Q - Qualifier	
D - Result is reported from a dilution	RPD - Relative Percent Difference	
* - Duplicate criteria was not met		

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Metals Report - Form VI

Duplicates

000035

Client Sample ID

A2-S1D

Client: Tetra Tech
Task Order: 160115-1
Lab ID: 588556D
Result Units: wt%, mg/Kg, dry wt. basis

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Matrix: Soil, Solid
% Solids: NA

Case: 1116399
Project: 21431.01.001

Analyte	Parent Sample Result	Qual	Duplicate Result	Qual	RPD	RPD Limit	Control Limit	M	Note
%U235	0.7220	D	0.7080	D	4.4%	-	-	MS1	
Uranium Total	460	D	490	D	6.3%	20%	-	MS1	
Uranium-234	0.0246	D	0.0261	D	5.9%	20%	-	MS2	
Uranium-235	3.320	D	3.470	D	4.4%	20%	-	MS1	
Uranium-236	0.000999	U	0.000971	U	-	-	-	MS2	#
Uranium-238	456	D	487	D	6.6%	20%	-	MS1	

# indicates that both the parent and duplicate sample results are below the RL, therefore no RPD limit or control limit is applicable.

Data Reporting Qualifiers (Qual)	***Columns***	***Instruments/Method (M)***
U - Result is less than the SwRI Reporting Limit (RL) N - Matrix spike and/or matrix spike duplicate criteria was not met X - Analytical spike criteria was not met E - Result is estimated due to interferences D - Result is reported from a dilution * - Duplicate criteria was not met	M - Instrument RPD - Relative Percent Difference	MS1 - ICP-MS PE DRC II/SW-846 Method 6020 MS2 - ICP-MS PE NexION/SW-846 Method 6020 NA - Not Applicable

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Metals Report - Form VII

Laboratory Control Sample

000036 **SwRI ID**

LCS16A26KE5

Client: Tetra Tech
Task Order: 160115-1
Lab ID: LCS16A26KE5
Result Units: mg/Kg

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Matrix: Soil, Solid
Associated Prep Batches: 20160126-P004

Case: 1116399
Project: 21431.01.001
LCS Source: Eckert&Ziegler Isotopes

Analyte	True	Found	Qual	%Rec.	Limit	M	Analysis Date/Time
%U235	-	-	-	-	-	NA	-
Uranium Total	15.0	15.3	D	102.0%	80%-120%	MS1	02/09/2016 15:50
Uranium-234	0.000811	0.000818		100.9%	80%-120%	MS2	02/10/2016 12:15
Uranium-235	0.107	0.0998	D	93.3%	80%-120%	MS1	02/09/2016 15:50
Uranium-236	-	-	-	-	-	NA	-
Uranium-238	14.9	15.2	D	102.0%	80%-120%	MS1	02/09/2016 15:50

Instruments/Methods (M)

MS1 - ICP-MS PE DRC II/SW-846 Method 6020
MS2 - ICP-MS PE NexION/SW-846 Method 6020
NA - Not Applicable

Form VII-IN

SOUTHWEST RESEARCH INSTITUTE

Metals Report - Form VII

Laboratory Control Sample

SwRI ID

LCS16A26KE7

Client: Tetra Tech
Task Order: 160115-1
Lab ID: LCS16A26KE7
Result Units: mg/Kg

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Matrix: Soil, Solid
Associated Prep Batches: 20160126-P004

Case: 1116399
Project: 21431.01.001
LCS Source: NIST SRM-278

Analyte	True	Found	Qual	%Rec.	Limit	M	Analysis Date/Time
%U235	-	-	-	-	-	NA	-
Uranium Total	4.58	4.21	D	91.9%	80%-120%	MS1	02/09/2016 15:52
Uranium-234	-	-	-	-	-	NA	-
Uranium-235	-	-	-	-	-	NA	-
Uranium-236	-	-	-	-	-	NA	-
Uranium-238	-	-	-	-	-	NA	-

Instruments/Methods (M)

MS1 - ICP-MS PE DRC II/SW-846 Method 6020
MS2 - ICP-MS PE NexION/SW-846 Method 6020
NA - Not Applicable

Form VII-IN

SOUTHWEST RESEARCH INSTITUTE

000038 **SwRI ID**

LCS16A26KE8

Metals Report - Form VII

Laboratory Control Sample

Client: Tetra Tech
Task Order: 160115-1
Lab ID: LCS16A26KE8
Result Units: mg/Kg

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Matrix: Soil, Solid
Associated Prep Batches: 20160126-P004

Case: 1116399
Project: 21431.01.001
LCS Source: NIST SRM-688

Analyte	True	Found	Qual	%Rec.	Limit	M	Analysis Date/Time
%U235	-	-	-	-	-	NA	-
Uranium Total +	0.370	0.329	D	88.9%	-	MS1	02/09/2016 15:55
Uranium-234	-	-	-	-	-	NA	-
Uranium-235	-	-	-	-	-	NA	-
Uranium-236	-	-	-	-	-	NA	-
Uranium-238	-	-	-	-	-	NA	-

+ The true value for this analyte is a reference/information value only; it is not a certified value.

Instruments/Methods (M)

MS1 - ICP-MS PE DRC II/SW-846 Method 6020
MS2 - ICP-MS PE NexION/SW-846 Method 6020
NA - Not Applicable

Form VII-IN

SOUTHWEST RESEARCH INSTITUTE

000039 **SwRI ID**

LCS16A26KE6

Metals Report - Form VII

Laboratory Control Sample

Client: Tetra Tech
Task Order: 160115-1
Lab ID: LCS16A26KE6
Result Units: mg/Kg

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Matrix: Soil, Solid
Associated Prep Batches: 20160126-P004

Case: 1116399
Project: 21431.01.001
LCS Source: Oak Ridge National Lab.

Analyte	True	Found	Qual	%Rec.	Limit	M	Analysis Date/Time
%U235	-	-	-	-	-	NA	-
Uranium Total	-	-	-	-	-	NA	-
Uranium-234	-	-	-	-	-	NA	-
Uranium-235	-	-	-	-	-	NA	-
Uranium-236	0.323	0.310		96.0%	80%-120%	MS2	02/10/2016 16:20
Uranium-238	-	-	-	-	-	NA	-

Instruments/Methods (M)

MS1 - ICP-MS PE DRC II/SW-846 Method 6020
MS2 - ICP-MS PE NexION/SW-846 Method 6020
NA - Not Applicable

Form VII-IN

Appendix D
Isotopic Thorium Results for Bulk Samples

SOUTHWEST RESEARCH INSTITUTE

ALPHA SPECTROMETRY ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thorium-228, 230, 232

Sample ID	Lab System ID	Analyte	Results (pCi/g, dry wt. basis)	Q	TPU (1s) (pCi/g)	MDA (pCi/g)	^{229}Th Tracer Rec.	Date Analyzed
Prep Blank	PBWB11KE2	^{228}Th	1.04E+02	B	2.41E+01	4.54E+01	92.0%	3/30/2016
	PBWB11KE2	^{230}Th	1.81E+02		3.10E+01	3.47E+01	92.0%	3/30/2016
	PBWB11KE2	^{232}Th	1.36E+01	U	1.01E+01	4.33E+01	92.0%	3/30/2016
Lab Control	LCSWB11KE2	^{228}Th	1.37E+04		8.77E+02	1.07E+02	75.6%	3/30/2016
	LCSWB11KE2	^{230}Th	3.23E+03		2.36E+02	4.08E+01	75.6%	3/30/2016
	LCSWB11KE2	^{232}Th	2.02E+04		1.27E+03	4.07E+01	75.6%	3/30/2016
True Value	-----	^{228}Th	-----		-----	-----	-----	-----
	-----	^{230}Th	-----		-----	-----	-----	-----
	-----	^{232}Th	2.00E+04		-----	-----	-----	-----
Recovery	-----	^{228}Th	-----		-----	-----	-----	-----
	-----	^{230}Th	-----		-----	-----	-----	-----
	-----	^{232}Th	101%		-----	-----	-----	-----
1D7-84-85	588049R	^{228}Th	1.06E+02	BJ	2.55E+01	5.95E+01	88.7%	3/30/2016
	588049R	^{230}Th	5.74E+04		3.49E+03	3.45E+01	88.7%	3/30/2016
	588049R	^{232}Th	2.61E+02		3.79E+01	3.44E+01	88.7%	3/30/2016
A2-S1	588556R	^{228}Th	7.56E+01	BJ	2.36E+01	7.64E+01	89.4%	3/30/2016
	588556R	^{230}Th	5.18E+04		3.15E+03	3.37E+01	89.4%	3/30/2016
	588556R	^{232}Th	1.18E+02		2.43E+01	3.36E+01	89.4%	3/30/2016
Duplicate result	588556DR	^{228}Th	1.55E+02	B	3.33E+01	8.84E+01	88.8%	3/30/2016
	588556DR	^{230}Th	5.02E+04		3.07E+03	4.45E+01	88.8%	3/30/2016
	588556DR	^{232}Th	1.90E+02		3.22E+01	3.55E+01	88.8%	3/30/2016
Dup Evaluation	-----	^{228}Th	1.9		-----	-----	-----	-----
	-----	^{230}Th	0.4		-----	-----	-----	-----
	-----	^{232}Th	1.8		-----	-----	-----	-----
A1-AC-1	590212R	^{228}Th	1.04E+02	BJ	2.58E+01	6.81E+01	88.7%	3/30/2016
	590212R	^{230}Th	5.88E+04		3.58E+03	4.22E+01	88.7%	3/30/2016
	590212R	^{232}Th	1.19E+02		2.43E+01	3.36E+01	88.7%	3/30/2016
A1-AC-3	590213R	^{228}Th	5.15E+01	BJ	2.06E+01	7.55E+01	90.0%	3/30/2016
	590213R	^{230}Th	3.82E+04		2.33E+03	3.33E+01	90.0%	3/30/2016
	590213R	^{232}Th	6.08E+01		1.72E+01	3.32E+01	90.0%	3/30/2016
A2-AC-21	590214R	^{228}Th	3.57E+01	BJ	6.68E+00	1.39E+01	88.1%	3/30/2016
	590214R	^{230}Th	6.68E+03		4.10E+02	1.45E+01	88.1%	3/30/2016
	590214R	^{232}Th	9.85E+00		3.16E+00	6.85E+00	88.1%	3/30/2016
WL-234CT	591000R	^{228}Th	8.58E+01	BJ	2.49E+01	7.70E+01	90.4%	3/30/2016
	591000R	^{230}Th	2.62E+04		1.61E+03	3.40E+01	90.4%	3/30/2016
	591000R	^{232}Th	4.87E+01		1.56E+01	3.39E+01	90.4%	3/30/2016

Q - Data Qualifier. TPU - Total Propagated Uncertainty.

U - less than 2 times TPU. B - detected in preparation blank.

U - Statistically not detected.

REM for HVE 04 May 2016

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Appendix E
ICP-AES Results for Bulk Samples

SOUTHWEST RESEARCH INSTITUTE

TOTAL METALS SUMMARY

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Customer ID	1D7-84-85	A1-AC-1	A1-AC-3	A2-AC-21	A2-S1	WL-234CT
SwRI System ID	588049	590212	590213	590214	588556	591000
Analyte	mg/Kg, Dry Wt. Basis	mg/Kg, Dry Wt. Basis	mg/Kg, Dry Wt. Basis	mg/Kg, Dry Wt. Basis	mg/Kg, Dry Wt. Basis	mg/Kg, Dry Wt. Basis
Aluminum	22200	14300	30800	44900	25400	43700
Antimony	<4.95	18.2	19.6	<4.69	<4.99	<4.95
Arsenic	26.3	11.8	8.96	68.8	31.3	11.0
Barium	224000	322000	123000	3880	154000	103000
Beryllium	0.850	<0.471	0.827	1.86	1.12	1.37
Bismuth	<1.98	<1.88	3.11	2.82	2.06	7.85
Boron	<743	<622	<645	<792	<638	<764
Cadmium	1.44	0.739	1.00	3.12	1.76	0.688
Calcium	27200	13700	76700	35200	62800	15700
Chromium	43.8	<48.8	50.0	73.1	56.0	70.7
Cobalt	472	414	173	1130	930	126
Copper	298	613	1380	679	602	146
Iron	12600	9320	12800	26300	17500	29400
Lanthanum	19.9	12.5	28.2	30.7	37.0	16.1
Lead	6480	5690	2360	220	4230	2440
Lithium	12.2	7.80	16.3	24.0	23.6	25.9
Magnesium	6070	3760	12500	9400	10100	6920
Manganese	334	173	445	1150	696	1060
Molybdenum	114	127	40.5	70.5	113	53.0
Nickel	642	585	246	1530	1220	189
Palladium	<1.98	<1.88	<1.87	<1.88	<2.00	<1.98
Phosphorus	428	271	468	923	460	624
Potassium	6090	3690	8960	14800	5840	13500
Selenium	49.8	47.9	22.5	93.4	48.3	25.4
Silicon	128000	98200	186000	274000	126000	225000
Silver	<0.990	<0.941	<0.937	<0.939	<0.999	<0.989
Sodium	4080	2660	5740	8210	3060	5370
Strontium	2420	3200	1280	174	1850	928
Sulfur	57000	48400	26900	1870	42500	20000
Thallium	<4.95	<4.71	<4.69	<4.69	<4.99	<4.95
Thorium	71.8	62.8	25.8	31.5	61.8	26.8
Tin	4.97	27.9	33.1	2.09	20.0	10.2
Titanium	1430	992	1870	3330	1610	2850
Tungsten	3.50	2.65	2.53	3.96	4.74	3.54
Vanadium	160	69.5	58.8	412	191	121
Yttrium	13.4	7.69	13.2	32.0	17.1	11.3
Zinc	88.3	76.1	152	115	175	130
Zirconium	187	182	241	2700	212	230

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SOUTHWEST RESEARCH INSTITUTE

TOTAL METALS AS OXIDES SUMMARY

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Customer ID	1D7-84-85	A1-AC-1	A1-AC-3	A2-AC-21	A2-S1	WL-234CT
SwRI System ID	588049	590212	590213	590214	588556	591000
Analyte	wt%, Dry Wt. Basis	wt%, Dry Wt. Basis	wt%, Dry Wt. Basis	wt%, Dry Wt. Basis	wt%, Dry Wt. Basis	wt%, Dry Wt. Basis
Aluminum as Al2O3	4.195%	2.702%	5.820%	8.484%	4.799%	8.257%
Barium as BaO	25.010%	35.951%	13.733%	0.433%	17.194%	11.500%
Calcium as CaO	3.806%	1.917%	10.732%	4.925%	8.787%	2.197%
Cobalt as CoO	0.060%	0.053%	0.022%	0.144%	0.118%	0.016%
Copper as CuO	0.037%	0.077%	0.173%	0.085%	0.075%	0.018%
Iron as Fe2O3	1.801%	1.332%	1.830%	3.760%	2.502%	4.203%
Lead as PbO	0.698%	0.613%	0.254%	0.024%	0.456%	0.263%
Magnesium as MgO	1.007%	0.623%	2.073%	1.559%	1.675%	1.147%
Manganese as MnO	0.043%	0.022%	0.057%	0.148%	0.090%	0.137%
Nickel as NiO	0.082%	0.074%	0.031%	0.195%	0.155%	0.024%
Phosphorus as P2O5	0.098%	0.062%	0.107%	0.212%	0.105%	0.143%
Potassium as K2O	0.734%	0.444%	1.079%	1.783%	0.703%	1.626%
Silicon as SiO2	27.382%	21.007%	39.789%	58.614%	26.954%	48.132%
Sodium as Na2O	0.550%	0.359%	0.774%	1.107%	0.412%	0.724%
Strontium as SrO	0.286%	0.378%	0.151%	0.021%	0.219%	0.110%
Sulfur as SO3	14.234%	12.086%	6.717%	0.467%	10.613%	4.994%
Titanium as TiO2	0.239%	0.165%	0.312%	0.555%	0.269%	0.475%
Zirconium as ZrO2	0.025%	0.025%	0.033%	0.365%	0.029%	0.031%
Loss on Ignition	13.7%	12.2%	16.2%	8.75%	16.3%	14.7%
SUM	94.0%	90.1%	99.9%	91.6%	91.5%	98.7%

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000045

Client Sample ID

1D7-84-85

Type: Unknown

Metals Report - Form I

Inorganic Analyses Data Sheet

Client: Tetra Tech
Task Order: 160115-1
Lab ID: 588049
Result Units: mg/Kg, dry wt. basis

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Matrix: Solid
% Solids: NA

Case: 1116399
Project: 21431.01.001
Receipt Date: 11/20/2015
Collection Date: NA

CAS No.	Analyte	Result	Qual	M	RL	DF	Prep Batch	Analysis Date/Time
7429-90-5	Aluminum	22,200	D	P1	99.0	10	20160126-P004	02/05/2016 19:15
7440-36-0	Antimony	4.95	U	P2	4.95	1	20160126-P004	02/05/2016 20:54
7440-38-2	Arsenic	26.3		P2	0.990	1	20160126-P004	02/05/2016 20:54
7440-39-3	Barium	2.24E+05	D	P2	407	100	20160127-P004	02/08/2016 15:55
7440-41-7	Beryllium	0.850		P2	0.495	1	20160126-P004	02/05/2016 20:54
7440-69-9	Bismuth	1.98	U	P2	1.98	1	20160126-P004	02/05/2016 20:54
7440-42-8	Boron	743	UD	P1	743	10	20160127-P003	02/06/2016 00:36
7440-43-9	Cadmium	1.44		P2	0.495	1	20160126-P004	02/05/2016 20:54
7440-70-2	Calcium	27,200	D	P2	99.0	10	20160126-P004	02/05/2016 19:17
7440-47-3	Chromium	43.8	D	P2	40.7	10	20160127-P004	02/08/2016 17:39
7440-48-4	Cobalt	472	D	P2	4.95	10	20160126-P004	02/05/2016 19:17
7440-50-8	Copper	298	D	P2	4.95	10	20160126-P004	02/05/2016 19:17
7439-89-6	Iron	12,600	D	P2	99.0	10	20160126-P004	02/05/2016 19:17
7439-91-0	Lanthanum	19.9	NJ	P1	0.990	1	20160126-P004	02/05/2016 20:55
7439-92-1	Lead	6,480	D	P1	46.4	10	20160127-P003	02/06/2016 00:36
7439-93-2	Lithium	12.2		P3	0.990	1	20160126-P004	02/08/2016 18:55
7439-95-4	Magnesium	6,070	D	P2	49.5	10	20160126-P004	02/05/2016 19:17
7439-96-5	Manganese	334	D	P2	4.95	10	20160126-P004	02/05/2016 19:17
7439-98-7	Molybdenum	114	D	P2	4.95	10	20160126-P004	02/05/2016 19:17
7440-02-0	Nickel	642	D	P2	4.95	10	20160126-P004	02/05/2016 19:17
7440-05-3	Palladium	1.98	U	P1	1.98	1	20160126-P004	02/05/2016 20:55
7723-14-0	Phosphorus	428		P1	4.95	1	20160126-P004	02/05/2016 20:55
7440-09-7	Potassium	6,090	D	P3	495	10	20160126-P004	02/08/2016 18:22
7782-49-2	Selenium	49.8	D	P2	9.90	10	20160126-P004	02/05/2016 19:17
7440-21-3	Silicon	1.28E+05	D	P2	8,130	100	20160127-P004	03/30/2016 18:29
7440-22-4	Silver	0.990	U	P1	0.990	1	20160126-P004	02/05/2016 20:55
7440-23-5	Sodium	4,080	D	P3	247	10	20160126-P004	02/08/2016 18:22
7440-24-6	Strontium	2,420	D	P2	40.7	10	20160127-P004	02/08/2016 17:39
7704-34-9	Sulfur	57,000	D	P1	929	10	20160127-P003	02/06/2016 00:36
7440-28-0	Thallium	4.95	U	P2	4.95	1	20160126-P004	02/05/2016 20:54
7440-29-1	Thorium	71.8	D	P2	19.8	10	20160126-P004	02/05/2016 19:17
7440-31-5	Tin	4.97	*N	P1	1.98	1	20160126-P004	02/05/2016 20:55
7440-32-6	Titanium	1,430	D	P2	40.7	10	20160127-P004	02/08/2016 17:39
7440-33-7	Tungsten	3.50		P1	1.98	1	20160126-P004	02/05/2016 20:55
7440-62-2	Vanadium	160	D	P2	4.95	10	20160126-P004	02/05/2016 19:17
7440-65-5	Yttrium	13.4		P2	0.495	1	20160126-P004	02/05/2016 20:54
7440-66-6	Zinc	88.3	D	P2	4.95	10	20160126-P004	02/05/2016 19:17
7440-67-7	Zirconium	187	D	P2	40.7	10	20160127-P004	02/08/2016 17:39

REM for HVE
04 May 2016

Data Reporting Qualifiers (Qual)	*Columns*	*Instruments/Methods (M)*
U - Result is less than the SwRI Reporting Limit (RL)	RL - SwRI Reporting Limit	P3 - ICP PE Optima 7300DV/SW846 Method 6010B
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	P2 - ICP TJA Trace 2/SW846 Method 6010B
X - Analytical spike criteria was not met	M - Instrument	P1 - ICP TJA Trace 1/SW846 Method 6010B
E - Result is estimated due to interferences		NA - Not Applicable
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

SOUTHWEST RESEARCH INSTITUTE

000046

Client Sample ID

A1-AC-1

Type: Unknown

Metals Report - Form I

Inorganic Analyses Data Sheet

Client: Tetra Tech
Task Order: 160115-1
Lab ID: 590212
Result Units: mg/Kg, dry wt. basis

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Matrix: Soil
% Solids: NA

Case: 1116399
Project: 21431.01.001
Receipt Date: 12/29/2015
Collection Date: NA

CAS No.	Analyte	Result	Qual	M	RL	DF	Prep Batch	Analysis Date/Time
7429-90-5	Aluminum	14,300	D	P1	94.1	10	20160126-P004	02/05/2016 20:02
7440-36-0	Antimony	18.2		P2	4.71	1	20160126-P004	02/05/2016 21:30
7440-38-2	Arsenic	11.8		P2	0.941	1	20160126-P004	02/05/2016 21:30
7440-39-3	Barium	3.22E+05	D	P2	488	100	20160127-P004	02/08/2016 16:22
7440-41-7	Beryllium	0.471	U	P2	0.471	1	20160126-P004	02/05/2016 21:30
7440-69-9	Bismuth	1.88	U	P2	1.88	1	20160126-P004	02/05/2016 21:30
7440-42-8	Boron	622	UD	P1	622	10	20160127-P003	02/06/2016 01:03
7440-43-9	Cadmium	0.739		P2	0.471	1	20160126-P004	02/05/2016 21:30
7440-70-2	Calcium	13,700	D	P2	94.1	10	20160126-P004	02/05/2016 20:03
7440-47-3	Chromium	48.8	UD	P2	48.8	10	20160127-P004	02/08/2016 18:04
7440-48-4	Cobalt	414	D	P2	4.71	10	20160126-P004	02/05/2016 20:03
7440-50-8	Copper	613	D	P2	4.71	10	20160126-P004	02/05/2016 20:03
7439-89-6	Iron	9,320	D	P2	94.1	10	20160126-P004	02/05/2016 20:03
7439-91-0	Lanthanum	12.5	NJ	P1	0.941	1	20160126-P004	02/05/2016 21:32
7439-92-1	Lead	5,690	D	P1	38.9	10	20160127-P003	02/06/2016 01:03
7439-93-2	Lithium	7.80		P3	0.941	1	20160126-P004	02/08/2016 19:08
7439-95-4	Magnesium	3,760	D	P2	47.1	10	20160126-P004	02/05/2016 20:03
7439-96-5	Manganese	173	D	P2	4.71	10	20160126-P004	02/05/2016 20:03
7439-98-7	Molybdenum	127	D	P2	4.71	10	20160126-P004	02/05/2016 20:03
7440-02-0	Nickel	585	D	P2	4.71	10	20160126-P004	02/05/2016 20:03
7440-05-3	Palladium	1.88	U	P1	1.88	1	20160126-P004	02/05/2016 21:32
7723-14-0	Phosphorus	271		P1	4.71	1	20160126-P004	02/05/2016 21:32
7440-09-7	Potassium	3,690	D	P3	471	10	20160126-P004	02/08/2016 18:38
7782-49-2	Selenium	47.9	D	P2	9.41	10	20160126-P004	02/05/2016 20:03
7440-21-3	Silicon	98,200	D	P2	9,760	100	20160127-P004	03/30/2016 18:55
7440-22-4	Silver	0.941	U	P1	0.941	1	20160126-P004	02/05/2016 21:32
7440-23-5	Sodium	2,660	D	P3	235	10	20160126-P004	02/08/2016 18:38
7440-24-6	Strontium	3,200	D	P2	48.8	10	20160127-P004	02/08/2016 18:04
7704-34-9	Sulfur	48,400	D	P1	778	10	20160127-P003	02/06/2016 01:03
7440-28-0	Thallium	4.71	U	P2	4.71	1	20160126-P004	02/05/2016 21:30
7440-29-1	Thorium	62.8	D	P2	18.8	10	20160126-P004	02/05/2016 20:03
7440-31-5	Tin	27.9	*N	P1	1.88	1	20160126-P004	02/05/2016 21:32
7440-32-6	Titanium	992	D	P2	48.8	10	20160127-P004	02/08/2016 18:04
7440-33-7	Tungsten	2.65		P1	1.88	1	20160126-P004	02/05/2016 21:32
7440-62-2	Vanadium	69.5	D	P2	4.71	10	20160126-P004	02/05/2016 20:03
7440-65-5	Yttrium	7.69		P2	0.471	1	20160126-P004	02/05/2016 21:30
7440-66-6	Zinc	76.1	D	P2	4.71	10	20160126-P004	02/05/2016 20:03
7440-67-7	Zirconium	182	D	P2	48.8	10	20160127-P004	02/08/2016 18:04

REM For HVE

04 May 2016

Data Reporting Qualifiers (Qual)	*Columns*	*Instruments/Methods (M)*
U - Result is less than the SwRI Reporting Limit (RL)	RL - SwRI Reporting Limit	P3 - ICP PE Optima 7300DV/SW846 Method 6010B
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	P2 - ICP TJA Trace 2/SW846 Method 6010B
X - Analytical spike criteria was not met	M - Instrument	P1 - ICP TJA Trace 1/SW846 Method 6010B
E - Result is estimated due to interferences		NA - Not Applicable
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

SOUTHWEST RESEARCH INSTITUTE

000047

Client Sample ID

A1-AC-3

Type: Unknown

Metals Report - Form I

Inorganic Analyses Data Sheet

Client: Tetra Tech
Task Order: 160115-1
Lab ID: 590213
Result Units: mg/Kg, dry wt. basis

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Matrix: Soil
% Solids: NA

Case: 1116399
Project: 21431.01.001
Receipt Date: 12/29/2015
Collection Date: NA

CAS No.	Analyte	Result	Qual	M	RL	DF	Prep Batch	Analysis Date/Time
7429-90-5	Aluminum	30,800	D	P1	93.7	10	20160126-P004	02/05/2016 20:07
7440-36-0	Antimony	19.6		P2	4.69	1	20160126-P004	02/05/2016 21:35
7440-38-2	Arsenic	8.96		P2	0.937	1	20160126-P004	02/05/2016 21:35
7440-39-3	Barium	1.23E+05	D	P2	482	100	20160127-P004	02/08/2016 16:27
7440-41-7	Beryllium	0.827		P2	0.469	1	20160126-P004	02/05/2016 21:35
7440-69-9	Bismuth	3.11		P2	1.87	1	20160126-P004	02/05/2016 21:35
7440-42-8	Boron	645	UD	P1	645	10	20160127-P003	02/06/2016 01:08
7440-43-9	Cadmium	1.00		P2	0.469	1	20160126-P004	02/05/2016 21:35
7440-70-2	Calcium	76,700	D	P2	93.7	10	20160126-P004	02/05/2016 20:08
7440-47-3	Chromium	50.0	D	P2	48.2	10	20160127-P004	02/08/2016 18:09
7440-48-4	Cobalt	173	D	P2	4.69	10	20160126-P004	02/05/2016 20:08
7440-50-8	Copper	1,380	D	P2	4.69	10	20160126-P004	02/05/2016 20:08
7439-89-6	Iron	12,800	D	P2	93.7	10	20160126-P004	02/05/2016 20:08
7439-91-0	Lanthanum	28.2	NJ	P1	0.937	1	20160126-P004	02/05/2016 21:37
7439-92-1	Lead	2,360	D	P1	40.3	10	20160127-P003	02/06/2016 01:08
7439-93-2	Lithium	16.3		P3	0.937	1	20160126-P004	02/08/2016 19:10
7439-95-4	Magnesium	12,500	D	P2	46.9	10	20160126-P004	02/05/2016 20:08
7439-96-5	Manganese	445	D	P2	4.69	10	20160126-P004	02/05/2016 20:08
7439-98-7	Molybdenum	40.5	D	P2	4.69	10	20160126-P004	02/05/2016 20:08
7440-02-0	Nickel	246	D	P2	4.69	10	20160126-P004	02/05/2016 20:08
7440-05-3	Palladium	1.87	U	P1	1.87	1	20160126-P004	02/05/2016 21:37
7723-14-0	Phosphorus	468		P1	4.69	1	20160126-P004	02/05/2016 21:37
7440-09-7	Potassium	8,960	D	P3	469	10	20160126-P004	02/08/2016 18:40
7782-49-2	Selenium	22.5	D	P2	9.37	10	20160126-P004	02/05/2016 20:08
7440-21-3	Silicon	1.86E+05	D	P2	9,640	100	20160127-P004	03/30/2016 19:00
7440-22-4	Silver	0.937	U	P1	0.937	1	20160126-P004	02/05/2016 21:37
7440-23-5	Sodium	5,740	D	P3	234	10	20160126-P004	02/08/2016 18:40
7440-24-6	Strontium	1,280	D	P2	48.2	10	20160127-P004	02/08/2016 18:09
7704-34-9	Sulfur	26,900	D	P1	806	10	20160127-P003	02/06/2016 01:08
7440-28-0	Thallium	4.69	U	P2	4.69	1	20160126-P004	02/05/2016 21:35
7440-29-1	Thorium	25.8	D	P2	18.7	10	20160126-P004	02/05/2016 20:08
7440-31-5	Tin	33.1	*N	P1	1.87	1	20160126-P004	02/05/2016 21:37
7440-32-6	Titanium	1,870	D	P2	48.2	10	20160127-P004	02/08/2016 18:09
7440-33-7	Tungsten	2.53		P1	1.87	1	20160126-P004	02/05/2016 21:37
7440-62-2	Vanadium	58.8	D	P2	4.69	10	20160126-P004	02/05/2016 20:08
7440-65-5	Yttrium	13.2		P2	0.469	1	20160126-P004	02/05/2016 21:35
7440-66-6	Zinc	152	D	P2	4.69	10	20160126-P004	02/05/2016 20:08
7440-67-7	Zirconium	241	D	P2	48.2	10	20160127-P004	02/08/2016 18:09

REM for HVE
04 May 2016

Data Reporting Qualifiers (Qual)	*Columns*	*Instruments/Methods (M)*
U - Result is less than the SwRI Reporting Limit (RL)	RL - SwRI Reporting Limit	P3 - ICP PE Optima 7300DV/SW846 Method 6010B
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	P2 - ICP TJA Trace 2/SW846 Method 6010B
X - Analytical spike criteria was not met	M - Instrument	P1 - ICP TJA Trace 1/SW846 Method 6010B
E - Result is estimated due to interferences		NA - Not Applicable
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

SOUTHWEST RESEARCH INSTITUTE

Metals Report - Form I

Inorganic Analyses Data Sheet

000048

Client Sample ID

A2-AC-21

Type: Unknown

Client: Tetra Tech
Task Order: 160115-1
Lab ID: 590214
Result Units: mg/Kg, dry wt. basis

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Matrix: Soil
% Solids: NA

Case: 1116399
Project: 21431.01.001
Receipt Date: 12/29/2015
Collection Date: NA

CAS No.	Analyte	Result	Qual	M	RL	DF	Prep Batch	Analysis Date/Time
7429-90-5	Aluminum	44,900	D	P1	93.9	10	20160126-P004	02/05/2016 20:13
7440-36-0	Antimony	4.69	U	P2	4.69	1	20160126-P004	02/05/2016 21:40
7440-38-2	Arsenic	68.8		P2	0.939	1	20160126-P004	02/05/2016 21:40
7440-39-3	Barium	3,880	D	P2	45.0	10	20160127-P004	02/08/2016 18:25
7440-41-7	Beryllium	1.86		P2	0.469	1	20160126-P004	02/05/2016 21:40
7440-69-9	Bismuth	2.82		P2	1.88	1	20160126-P004	02/05/2016 21:40
7440-42-8	Boron	792	UD	P1	792	10	20160127-P003	02/06/2016 01:24
7440-43-9	Cadmium	3.12		P2	0.469	1	20160126-P004	02/05/2016 21:40
7440-70-2	Calcium	35,200	D	P2	93.9	10	20160126-P004	02/05/2016 20:13
7440-47-3	Chromium	73.1	D	P2	45.0	10	20160127-P004	02/08/2016 18:25
7440-48-4	Cobalt	1,130	D	P2	4.69	10	20160126-P004	02/05/2016 20:13
7440-50-8	Copper	679	D	P2	4.69	10	20160126-P004	02/05/2016 20:13
7439-89-6	Iron	26,300	D	P2	93.9	10	20160126-P004	02/05/2016 20:13
7439-91-0	Lanthanum	30.7	NJ	P1	0.939	1	20160126-P004	02/05/2016 21:42
7439-92-1	Lead	220	D	P1	49.5	10	20160127-P003	02/06/2016 01:24
7439-93-2	Lithium	24.0		P3	0.939	1	20160126-P004	02/08/2016 19:13
7439-95-4	Magnesium	9,400	D	P2	46.9	10	20160126-P004	02/05/2016 20:13
7439-96-5	Manganese	1,150	D	P2	4.69	10	20160126-P004	02/05/2016 20:13
7439-98-7	Molybdenum	70.5	D	P2	4.69	10	20160126-P004	02/05/2016 20:13
7440-02-0	Nickel	1,530	D	P2	4.69	10	20160126-P004	02/05/2016 20:13
7440-05-3	Palladium	1.88	U	P1	1.88	1	20160126-P004	02/05/2016 21:42
7723-14-0	Phosphorus	923		P1	4.69	1	20160126-P004	02/05/2016 21:42
7440-09-7	Potassium	14,800	D	P3	469	10	20160126-P004	02/08/2016 18:41
7782-49-2	Selenium	93.4	D	P2	9.39	10	20160126-P004	02/05/2016 20:13
7440-21-3	Silicon	2.74E+05	D	P2	9,000	100	20160127-P004	03/31/2016 08:56
7440-22-4	Silver	0.939	U	P1	0.939	1	20160126-P004	02/05/2016 21:42
7440-23-5	Sodium	8,210	D	P3	235	10	20160126-P004	02/08/2016 18:41
7440-24-6	Strontium	174	D	P2	45.0	10	20160127-P004	02/08/2016 18:25
7704-34-9	Sulfur	1,870	D	P1	990	10	20160127-P003	02/06/2016 01:24
7440-28-0	Thallium	4.69	U	P2	4.69	1	20160126-P004	02/05/2016 21:40
7440-29-1	Thorium	31.5	D	P2	18.8	10	20160126-P004	02/05/2016 20:13
7440-31-5	Tin	2.09	*N	P1	1.88	1	20160126-P004	02/05/2016 21:42
7440-32-6	Titanium	3,330	D	P2	45.0	10	20160127-P004	02/08/2016 18:25
7440-33-7	Tungsten	3.96		P1	1.88	1	20160126-P004	02/05/2016 21:42
7440-62-2	Vanadium	412	D	P2	4.69	10	20160126-P004	02/05/2016 20:13
7440-65-5	Yttrium	32.0		P2	0.469	1	20160126-P004	02/05/2016 21:40
7440-66-6	Zinc	115	D	P2	4.69	10	20160126-P004	02/05/2016 20:13
7440-67-7	Zirconium	2,700	D	P2	45.0	10	20160127-P004	02/08/2016 18:25

REM for HVE

04 May 2016

Data Reporting Qualifiers (Qual)	*Columns*	*Instruments/Methods (M)*
U - Result is less than the SwRI Reporting Limit (RL)	RL - SwRI Reporting Limit	P3 - ICP PE Optima 7300DV/SW846 Method 6010B
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	P2 - ICP TJA Trace 2/SW846 Method 6010B
X - Analytical spike criteria was not met	M - Instrument	P1 - ICP TJA Trace 1/SW846 Method 6010B
E - Result is estimated due to interferences		NA - Not Applicable
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

SOUTHWEST RESEARCH INSTITUTE

Metals Report - Form I

Inorganic Analyses Data Sheet

000049

Client Sample ID

A2-S1

Type: Unknown

Client: Tetra Tech
Task Order: 160115-1
Lab ID: 588556
Result Units: mg/Kg, dry wt. basis

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Matrix: Soil
% Solids: NA

Case: 1116399
Project: 21431.01.001
Receipt Date: 12/01/2015
Collection Date: NA

CAS No.	Analyte	Result	Qual	M	RL	DF	Prep Batch	Analysis Date/Time
7429-90-5	Aluminum	25,400	D	P1	99.9	10	20160126-P004	02/05/2016 19:20
7440-36-0	Antimony	4.99	U	P2	4.99	1	20160126-P004	02/05/2016 20:59
7440-38-2	Arsenic	31.3		P2	0.999	1	20160126-P004	02/05/2016 20:59
7440-39-3	Barium	1.54E+05	D	P2	491	100	20160127-P004	02/08/2016 16:00
7440-41-7	Beryllium	1.12		P2	0.499	1	20160126-P004	02/05/2016 20:59
7440-69-9	Bismuth	2.06		P2	2.00	1	20160126-P004	02/05/2016 20:59
7440-42-8	Boron	638	UD	P1	638	10	20160127-P003	02/06/2016 00:42
7440-43-9	Cadmium	1.76		P2	0.499	1	20160126-P004	02/05/2016 20:59
7440-70-2	Calcium	62,800	D	P2	99.9	10	20160126-P004	02/05/2016 19:22
7440-47-3	Chromium	56.0	D	P2	49.1	10	20160127-P004	02/08/2016 17:44
7440-48-4	Cobalt	930	D	P2	4.99	10	20160126-P004	02/05/2016 19:22
7440-50-8	Copper	602	D	P2	4.99	10	20160126-P004	02/05/2016 19:22
7439-89-6	Iron	17,500	D	P2	99.9	10	20160126-P004	02/05/2016 19:22
7439-91-0	Lanthanum	37.0	NJ	P1	0.999	1	20160126-P004	02/05/2016 21:00
7439-92-1	Lead	4,230	D	P1	39.9	10	20160127-P003	02/06/2016 00:42
7439-93-2	Lithium	23.6		P3	0.999	1	20160126-P004	02/08/2016 18:57
7439-95-4	Magnesium	10,100	D	P2	49.9	10	20160126-P004	02/05/2016 19:22
7439-96-5	Manganese	696	D	P2	4.99	10	20160126-P004	02/05/2016 19:22
7439-98-7	Molybdenum	113	D	P2	4.99	10	20160126-P004	02/05/2016 19:22
7440-02-0	Nickel	1,220	D	P2	4.99	10	20160126-P004	02/05/2016 19:22
7440-05-3	Palladium	2.00	U	P1	2.00	1	20160126-P004	02/05/2016 21:00
7723-14-0	Phosphorus	460		P1	4.99	1	20160126-P004	02/05/2016 21:00
7440-09-7	Potassium	5,840	D	P3	499	10	20160126-P004	02/08/2016 18:24
7782-49-2	Selenium	48.3	D	P2	9.99	10	20160126-P004	02/05/2016 19:22
7440-21-3	Silicon	1.26E+05	D	P2	9,820	100	20160127-P004	03/30/2016 18:34
7440-22-4	Silver	0.999	U	P1	0.999	1	20160126-P004	02/05/2016 21:00
7440-23-5	Sodium	3,060	D	P3	250	10	20160126-P004	02/08/2016 18:24
7440-24-6	Strontium	1,850	D	P2	49.1	10	20160127-P004	02/08/2016 17:44
7704-34-9	Sulfur	42,500	D	P1	797	10	20160127-P003	02/06/2016 00:42
7440-28-0	Thallium	4.99	U	P2	4.99	1	20160126-P004	02/05/2016 20:59
7440-29-1	Thorium	61.8	D	P2	20.0	10	20160126-P004	02/05/2016 19:22
7440-31-5	Tin	20.0	*NJ	P1	2.00	1	20160126-P004	02/05/2016 21:00
7440-32-6	Titanium	1,610	D	P2	49.1	10	20160127-P004	02/08/2016 17:44
7440-33-7	Tungsten	4.74		P1	2.00	1	20160126-P004	02/05/2016 21:00
7440-62-2	Vanadium	191	D	P2	4.99	10	20160126-P004	02/05/2016 19:22
7440-65-5	Yttrium	17.1		P2	0.499	1	20160126-P004	02/05/2016 20:59
7440-66-6	Zinc	175	D	P2	4.99	10	20160126-P004	02/05/2016 19:22
7440-67-7	Zirconium	212	D	P2	49.1	10	20160127-P004	02/08/2016 17:44

REM for HVE
04 May 2016

Data Reporting Qualifiers (Qual)	*Columns*	*Instruments/Methods (M)*
U - Result is less than the SwRI Reporting Limit (RL)	RL - SwRI Reporting Limit	P3 - ICP PE Optima 7300DV/SW846 Method 6010B
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	P2 - ICP TJA Trace 2/SW846 Method 6010B
X - Analytical spike criteria was not met	M - Instrument	P1 - ICP TJA Trace 1/SW846 Method 6010B
E - Result is estimated due to interferences		NA - Not Applicable
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

SOUTHWEST RESEARCH INSTITUTE

Metals Report - Form I

Inorganic Analyses Data Sheet

000050

Client Sample ID

WL-234CT

Type: Unknown

Client: Tetra Tech
Task Order: 160115-1
Lab ID: 591000
Result Units: mg/Kg, dry wt. basis

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Matrix: Soil
% Solids: NA

Case: 1116399
Project: 21431.01.001
Receipt Date: 01/15/2016
Collection Date: NA

CAS No.	Analyte	Result	Qual	M	RL	DF	Prep Batch	Analysis Date/Time
7429-90-5	Aluminum	43,700	D	P1	98.9	10	20160126-P004	02/05/2016 20:18
7440-36-0	Antimony	4.95	U	P2	4.95	1	20160126-P004	02/05/2016 21:55
7440-38-2	Arsenic	11.0		P2	0.989	1	20160126-P004	02/05/2016 21:55
7440-39-3	Barium	1.03E+05	D	P2	490	100	20160127-P004	02/08/2016 16:48
7440-41-7	Beryllium	1.37		P2	0.495	1	20160126-P004	02/05/2016 21:55
7440-69-9	Bismuth	7.85		P2	1.98	1	20160126-P004	02/05/2016 21:55
7440-42-8	Boron	764	UD	P1	764	10	20160127-P003	02/06/2016 01:29
7440-43-9	Cadmium	0.688		P2	0.495	1	20160126-P004	02/05/2016 21:55
7440-70-2	Calcium	15,700	D	P2	98.9	10	20160126-P004	02/05/2016 20:18
7440-47-3	Chromium	70.7	D	P2	49.0	10	20160127-P004	02/08/2016 18:30
7440-48-4	Cobalt	126	D	P2	4.95	10	20160126-P004	02/05/2016 20:18
7440-50-8	Copper	146	D	P2	4.95	10	20160126-P004	02/05/2016 20:18
7439-89-6	Iron	29,400	D	P2	98.9	10	20160126-P004	02/05/2016 20:18
7439-91-0	Lanthanum	16.1	NJ	P1	0.989	1	20160126-P004	02/05/2016 21:58
7439-92-1	Lead	2,440	D	P1	47.8	10	20160127-P003	02/06/2016 01:29
7439-93-2	Lithium	25.9		P3	0.989	1	20160126-P004	02/08/2016 19:18
7439-95-4	Magnesium	6,920	D	P2	49.5	10	20160126-P004	02/05/2016 20:18
7439-96-5	Manganese	1,060	D	P2	4.95	10	20160126-P004	02/05/2016 20:18
7439-98-7	Molybdenum	53.0	D	P2	4.95	10	20160126-P004	02/05/2016 20:18
7440-02-0	Nickel	189	D	P2	4.95	10	20160126-P004	02/05/2016 20:18
7440-05-3	Palladium	1.98	U	P1	1.98	1	20160126-P004	02/05/2016 21:58
7723-14-0	Phosphorus	624		P1	4.95	1	20160126-P004	02/05/2016 21:58
7440-09-7	Potassium	13,500	D	P3	495	10	20160126-P004	02/08/2016 18:43
7782-49-2	Selenium	25.4	D	P2	9.89	10	20160126-P004	02/05/2016 20:18
7440-21-3	Silicon	2.25E+05	D	P2	9,790	100	20160127-P004	03/31/2016 09:01
7440-22-4	Silver	0.989	U	P1	0.989	1	20160126-P004	02/05/2016 21:58
7440-23-5	Sodium	5,370	D	P3	247	10	20160126-P004	02/08/2016 18:43
7440-24-6	Strontium	928	D	P2	49.0	10	20160127-P004	02/08/2016 18:30
7704-34-9	Sulfur	20,000	D	P1	955	10	20160127-P003	02/06/2016 01:29
7440-28-0	Thallium	4.95	U	P2	4.95	1	20160126-P004	02/05/2016 21:55
7440-29-1	Thorium	26.8	D	P2	19.8	10	20160126-P004	02/05/2016 20:18
7440-31-5	Tin	10.2	*N	P1	1.98	1	20160126-P004	02/05/2016 21:58
7440-32-6	Titanium	2,850	D	P2	49.0	10	20160127-P004	02/08/2016 18:30
7440-33-7	Tungsten	3.54		P1	1.98	1	20160126-P004	02/05/2016 21:58
7440-62-2	Vanadium	121	D	P2	4.95	10	20160126-P004	02/05/2016 20:18
7440-65-5	Yttrium	11.3		P2	0.495	1	20160126-P004	02/05/2016 21:55
7440-66-6	Zinc	130	D	P2	4.95	10	20160126-P004	02/05/2016 20:18
7440-67-7	Zirconium	230	D	P2	49.0	10	20160127-P004	02/08/2016 18:30

REM for HVE
04 May 2016

Data Reporting Qualifiers (Qual)	*Columns*	*Instruments/Methods (M)*
U - Result is less than the SwRI Reporting Limit (RL)	RL - SwRI Reporting Limit	P3 - ICP PE Optima 7300DV/SW846 Method 6010B
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	P2 - ICP TJA Trace 2/SW846 Method 6010B
X - Analytical spike criteria was not met	M - Instrument	P1 - ICP TJA Trace 1/SW846 Method 6010B
E - Result is estimated due to interferences		NA - Not Applicable
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

SOUTHWEST RESEARCH INSTITUTE

Metals Report - Form I

Inorganic Analyses Data Sheet

000051

SwRI ID

PB16A26KE3

Type: Blank

Client: Tetra Tech
Task Order: 160115-1
Lab ID: PB16A26KE3
Result Units: mg/Kg

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Matrix: Soil, Solid
% Solids: NA

Case: 1116399
Project: 21431.01.001
Receipt Date: NA
Collection Date: NA

CAS No.	Analyte	Result	Qual	M	RL	DF	Prep Batch	Analysis Date/Time
7429-90-5	Aluminum	10.0	U	P1	10.0	1	20160126-P004	02/05/2016 18:48
7440-36-0	Antimony	5.00	U	P2	5.00	1	20160126-P004	02/05/2016 18:52
7440-38-2	Arsenic	1.00	U	P2	1.00	1	20160126-P004	02/05/2016 18:52
7440-39-3	Barium	-		NA	-	-	-	-
7440-41-7	Beryllium	0.500	U	P2	0.500	1	20160126-P004	02/05/2016 18:52
7440-69-9	Bismuth	2.00	U	P2	2.00	1	20160126-P004	02/05/2016 18:52
7440-42-8	Boron	-		NA	-	-	-	-
7440-43-9	Cadmium	0.500	U	P2	0.500	1	20160126-P004	02/05/2016 18:52
7440-70-2	Calcium	10.0	U	P2	10.0	1	20160126-P004	02/05/2016 18:52
7440-47-3	Chromium	-		NA	-	-	-	-
7440-48-4	Cobalt	0.500	U	P2	0.500	1	20160126-P004	02/05/2016 18:52
7440-50-8	Copper	0.500	U	P2	0.500	1	20160126-P004	02/05/2016 18:52
7439-89-6	Iron	10.0	U	P2	10.0	1	20160126-P004	02/05/2016 18:52
7439-91-0	Lanthanum	1.00	U	P1	1.00	1	20160126-P004	02/05/2016 18:48
7439-92-1	Lead	-		NA	-	-	-	-
7439-93-2	Lithium	1.00	U	P3	1.00	1	20160126-P004	02/08/2016 18:13
7439-95-4	Magnesium	5.00	U	P2	5.00	1	20160126-P004	02/05/2016 18:52
7439-96-5	Manganese	0.500	U	P2	0.500	1	20160126-P004	02/05/2016 18:52
7439-98-7	Molybdenum	0.500	U	P2	0.500	1	20160126-P004	02/05/2016 18:52
7440-02-0	Nickel	0.500	U	P2	0.500	1	20160126-P004	02/05/2016 18:52
7440-05-3	Palladium	2.00	U	P1	2.00	1	20160126-P004	02/05/2016 18:48
7723-14-0	Phosphorus	5.00	U	P1	5.00	1	20160126-P004	02/05/2016 18:48
7440-09-7	Potassium	50.0	U	P3	50.0	1	20160126-P004	02/08/2016 18:13
7782-49-2	Selenium	1.00	U	P2	1.00	1	20160126-P004	02/05/2016 18:52
7440-21-3	Silicon	-		NA	-	-	-	-
7440-22-4	Silver	1.00	U	P1	1.00	1	20160126-P004	02/05/2016 18:48
7440-23-5	Sodium	25.0	U	P3	25.0	1	20160126-P004	02/08/2016 18:13
7440-24-6	Strontium	-		NA	-	-	-	-
7704-34-9	Sulfur	-		NA	-	-	-	-
7440-28-0	Thallium	5.00	U	P2	5.00	1	20160126-P004	02/05/2016 18:52
7440-29-1	Thorium	2.00	U	P2	2.00	1	20160126-P004	02/05/2016 18:52
7440-31-5	Tin	2.00	U	P1	2.00	1	20160126-P004	02/05/2016 18:48
7440-32-6	Titanium	-		NA	-	-	-	-
7440-33-7	Tungsten	2.00	U	P1	2.00	1	20160126-P004	02/05/2016 18:48
7440-62-2	Vanadium	0.500	U	P2	0.500	1	20160126-P004	02/05/2016 18:52
7440-65-5	Yttrium	0.500	U	P2	0.500	1	20160126-P004	02/05/2016 18:52
7440-66-6	Zinc	0.500	U	P2	0.500	1	20160126-P004	02/05/2016 18:52
7440-67-7	Zirconium	-		NA	-	-	-	-

Data Reporting Qualifiers (Qual)	***Columns***	***Instruments/Methods (M)***
U - Result is less than the SwRI Reporting Limit (RL)	RL - SwRI Reporting Limit	P3 - ICP PE Optima 7300DV/SW846 Method 6010B
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	P2 - ICP TJA Trace 2/SW846 Method 6010B
X - Analytical spike criteria was not met	M - Instrument	P1 - ICP TJA Trace 1/SW846 Method 6010B
E - Result is estimated due to interferences		NA - Not Applicable
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

SOUTHWEST RESEARCH INSTITUTE

Metals Report - Form I

Inorganic Analyses Data Sheet

000052

SwRI ID

PB16A27KE1

Type: Blank

Client: Tetra Tech
Task Order: 160115-1
Lab ID: PB16A27KE1
Result Units: mg/Kg

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Matrix: Soil, Solid
% Solids: NA

Case: 1116399
Project: 21431.01.001
Receipt Date: NA
Collection Date: NA

CAS No.	Analyte	Result	Qual	M	RL	DF	Prep Batch	Analysis Date/Time
7429-90-5	Aluminum	-		NA	-	-	-	-
7440-36-0	Antimony	-		NA	-	-	-	-
7440-38-2	Arsenic	-		NA	-	-	-	-
7440-39-3	Barium	-		NA	-	-	-	-
7440-41-7	Beryllium	-		NA	-	-	-	-
7440-69-9	Bismuth	-		NA	-	-	-	-
7440-42-8	Boron	800	UD	P1	800	10	20160127-P003	02/06/2016 00:20
7440-43-9	Cadmium	-		NA	-	-	-	-
7440-70-2	Calcium	-		NA	-	-	-	-
7440-47-3	Chromium	-		NA	-	-	-	-
7440-48-4	Cobalt	-		NA	-	-	-	-
7440-50-8	Copper	-		NA	-	-	-	-
7439-89-6	Iron	-		NA	-	-	-	-
7439-91-0	Lanthanum	-		NA	-	-	-	-
7439-92-1	Lead	50.0	UD	P1	50.0	10	20160127-P003	02/06/2016 00:20
7439-93-2	Lithium	-		NA	-	-	-	-
7439-95-4	Magnesium	-		NA	-	-	-	-
7439-96-5	Manganese	-		NA	-	-	-	-
7439-98-7	Molybdenum	-		NA	-	-	-	-
7440-02-0	Nickel	-		NA	-	-	-	-
7440-05-3	Palladium	-		NA	-	-	-	-
7723-14-0	Phosphorus	-		NA	-	-	-	-
7440-09-7	Potassium	-		NA	-	-	-	-
7782-49-2	Selenium	-		NA	-	-	-	-
7440-21-3	Silicon	-		NA	-	-	-	-
7440-22-4	Silver	-		NA	-	-	-	-
7440-23-5	Sodium	-		NA	-	-	-	-
7440-24-6	Strontium	-		NA	-	-	-	-
7704-34-9	Sulfur	1,000	UD	P1	1,000	10	20160127-P003	02/06/2016 00:20
7440-28-0	Thallium	-		NA	-	-	-	-
7440-29-1	Thorium	-		NA	-	-	-	-
7440-31-5	Tin	-		NA	-	-	-	-
7440-32-6	Titanium	-		NA	-	-	-	-
7440-33-7	Tungsten	-		NA	-	-	-	-
7440-62-2	Vanadium	-		NA	-	-	-	-
7440-65-5	Yttrium	-		NA	-	-	-	-
7440-66-6	Zinc	-		NA	-	-	-	-
7440-67-7	Zirconium	-		NA	-	-	-	-

Data Reporting Qualifiers (Qual)	***Columns***	***Instruments/Methods (M)***
U - Result is less than the SwRI Reporting Limit (RL)	RL - SwRI Reporting Limit	P3 - ICP PE Optima 7300DV/SW846 Method 6010B
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	P2 - ICP TJA Trace 2/SW846 Method 6010B
X - Analytical spike criteria was not met	M - Instrument	P1 - ICP TJA Trace 1/SW846 Method 6010B
E - Result is estimated due to interferences		NA - Not Applicable
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

SOUTHWEST RESEARCH INSTITUTE

Metals Report - Form I

Inorganic Analyses Data Sheet

000053 **SwRI ID**

PB16A27KE2

Type: Blank

Client: Tetra Tech
Task Order: 160115-1
Lab ID: PB16A27KE2
Result Units: mg/Kg

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Matrix: Soil, Solid
% Solids: NA

Case: 1116399
Project: 21431.01.001
Receipt Date: NA
Collection Date: NA

CAS No.	Analyte	Result	Qual	M	RL	DF	Prep Batch	Analysis Date/Time
7429-90-5	Aluminum	-		NA	-	-	-	-
7440-36-0	Antimony	-		NA	-	-	-	-
7440-38-2	Arsenic	-		NA	-	-	-	-
7440-39-3	Barium	50.0	UD	P2	50.0	10	20160127-P004	02/08/2016 17:23
7440-41-7	Beryllium	-		NA	-	-	-	-
7440-69-9	Bismuth	-		NA	-	-	-	-
7440-42-8	Boron	-		NA	-	-	-	-
7440-43-9	Cadmium	-		NA	-	-	-	-
7440-70-2	Calcium	-		NA	-	-	-	-
7440-47-3	Chromium	50.0	UD	P2	50.0	10	20160127-P004	02/08/2016 17:23
7440-48-4	Cobalt	-		NA	-	-	-	-
7440-50-8	Copper	-		NA	-	-	-	-
7439-89-6	Iron	-		NA	-	-	-	-
7439-91-0	Lanthanum	-		NA	-	-	-	-
7439-92-1	Lead	-		NA	-	-	-	-
7439-93-2	Lithium	-		NA	-	-	-	-
7439-95-4	Magnesium	-		NA	-	-	-	-
7439-96-5	Manganese	-		NA	-	-	-	-
7439-98-7	Molybdenum	-		NA	-	-	-	-
7440-02-0	Nickel	-		NA	-	-	-	-
7440-05-3	Palladium	-		NA	-	-	-	-
7723-14-0	Phosphorus	-		NA	-	-	-	-
7440-09-7	Potassium	-		NA	-	-	-	-
7782-49-2	Selenium	-		NA	-	-	-	-
7440-21-3	Silicon	10,000	UD	P2	10,000	100	20160127-P004	03/30/2016 18:14
7440-22-4	Silver	-		NA	-	-	-	-
7440-23-5	Sodium	-		NA	-	-	-	-
7440-24-6	Strontium	50.0	UD	P2	50.0	10	20160127-P004	02/08/2016 17:23
7704-34-9	Sulfur	-		NA	-	-	-	-
7440-28-0	Thallium	-		NA	-	-	-	-
7440-29-1	Thorium	-		NA	-	-	-	-
7440-31-5	Tin	-		NA	-	-	-	-
7440-32-6	Titanium	50.0	UD	P2	50.0	10	20160127-P004	02/08/2016 17:23
7440-33-7	Tungsten	-		NA	-	-	-	-
7440-62-2	Vanadium	-		NA	-	-	-	-
7440-65-5	Yttrium	-		NA	-	-	-	-
7440-66-6	Zinc	-		NA	-	-	-	-
7440-67-7	Zirconium	50.0	UD	P2	50.0	10	20160127-P004	02/08/2016 17:23

Data Reporting Qualifiers (Qual)	***Columns***	***Instruments/Methods (M)***
U - Result is less than the SwRI Reporting Limit (RL)	RL - SwRI Reporting Limit	P3 - ICP PE Optima 7300DV/SW846 Method 6010B
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	P2 - ICP TJA Trace 2/SW846 Method 6010B
X - Analytical spike criteria was not met	M - Instrument	P1 - ICP TJA Trace 1/SW846 Method 6010B
E - Result is estimated due to interferences		NA - Not Applicable
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

SOUTHWEST RESEARCH INSTITUTE

Metals Report - Form VA

Matrix Spike/Matrix Spike Duplicate Sample Recovery

000054

Client Sample ID

A2-S1MS

Client: Tetra Tech
Task Order: 160115-1
Lab ID: 588556TFMS
Result Units: mg/Kg, dry wt. basis

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Matrix: Soil, Solid
% Solids: NA

Case: 1116399
Project: 21431.01.001

Analyte	Parent Sample Result	Qual	MS Result	MS Spike Added	MS %Rec	MSD Result	MSD Spike Added	MSD %Rec	%RPD	Control Limit %Rec	Control Limit %RPD	M	Note
Aluminum	25400	D	26300	98.4	914.6%	-	-	-	-	75%-125%	-	P1	#
Antimony	4.99	U	26.9	24.6	109.4%	-	-	-	-	75%-125%	-	P2	
Arsenic	31.3		130	98.4	100.3%	-	-	-	-	75%-125%	-	P2	
Barium	-		-	-	-	-	-	-	-	-	-	P2	
Beryllium	1.12		3.29	2.46	88.2%	-	-	-	-	75%-125%	-	P2	
Bismuth	2.06		12.7	11.7	90.9%	-	-	-	-	75%-125%	-	P2	
Boron	-		-	-	-	-	-	-	-	-	-	P1	
Cadmium	1.76		4.03	2.46	92.3%	-	-	-	-	75%-125%	-	P2	
Calcium	62800	D	53300	984	-965.4%	-	-	-	-	75%-125%	-	P2	#
Chromium	-		-	-	-	-	-	-	-	-	-	P2	
Cobalt	930	D	987	24.6	231.7%	-	-	-	-	75%-125%	-	P2	#
Copper	602	D	634	12.3	260.2%	-	-	-	-	75%-125%	-	P2	#
Iron	17500	D	17300	49.2	-406.5%	-	-	-	-	75%-125%	-	P2	#
Lanthanum	37.0	N	43.9	11.7	**59.0%**	-	-	-	-	75%-125%	-	P1	
Lead	-		-	-	-	-	-	-	-	-	-	P1	
Lithium	23.6		36.6	11.7	111.1%	-	-	-	-	75%-125%	-	P3	
Magnesium	10100	D	10300	984	20.3%	-	-	-	-	75%-125%	-	P2	#
Manganese	696	D	703	24.6	28.5%	-	-	-	-	75%-125%	-	P2	#
Molybdenum	113	D	126	11.7	111.1%	-	-	-	-	75%-125%	-	P2	#
Nickel	1220	D	1300	24.6	325.2%	-	-	-	-	75%-125%	-	P2	#
Palladium	2.00	U	11.6	11.7	99.1%	-	-	-	-	75%-125%	-	P1	
Phosphorus	460		550	98.4	91.5%	-	-	-	-	75%-125%	-	P1	#
Potassium	5840	D	7130	984	131.1%	-	-	-	-	75%-125%	-	P3	#
Selenium	48.3	D	143	98.4	96.2%	-	-	-	-	75%-125%	-	P2	
Silicon	-		-	-	-	-	-	-	-	-	-	P2	
Silver	0.999	U	2.18	2.46	88.6%	-	-	-	-	75%-125%	-	P1	
Sodium	3060	D	4220	984	117.9%	-	-	-	-	75%-125%	-	P3	
Strontium	-		-	-	-	-	-	-	-	-	-	P2	
Sulfur	-		-	-	-	-	-	-	-	-	-	P1	
Thallium	4.99	U	98.4	98.4	100.0%	-	-	-	-	75%-125%	-	P2	
Thorium	61.8	D	72.6	11.7	92.3%	-	-	-	-	75%-125%	-	P2	#
Tin	20.0	*N	25.4	11.7	**46.2%**	-	-	-	-	75%-125%	-	P1	
Titanium	-		-	-	-	-	-	-	-	-	-	P2	
Tungsten	4.74		17.2	11.7	106.5%	-	-	-	-	75%-125%	-	P1	
Vanadium	191	D	218	24.6	109.8%	-	-	-	-	75%-125%	-	P2	#
Yttrium	17.1		29.3	11.7	104.3%	-	-	-	-	75%-125%	-	P2	
Zinc	175	D	201	24.6	105.7%	-	-	-	-	75%-125%	-	P2	#
Zirconium	-		-	-	-	-	-	-	-	-	-	P2	

Parent value exceeded 4 times the spike added, therefore MS/MSD %Recovery and %RPD are not required for evaluation.

Data Reporting Qualifiers (Qual)	***Columns***	***Instruments/Methods (M)***
U - Result is less than the SwRI Reporting Limit (RL)	M - Instrument	P3 - ICP PE Optima 7300DV/SW846 Method 6010B
N - Matrix spike and/or matrix spike duplicate criteria was not met	MS - Matrix Spike	P2 - ICP TJA Trace 2/SW846 Method 6010B
X - Analytical spike criteria was not met	MSD - Matrix Spike Duplicate	P1 - ICP TJA Trace 1/SW846 Method 6010B
E - Result is estimated due to interferences	Q - Qualifier	NA - Not Applicable
D - Result is reported from a dilution	RPD - Relative Percent Difference	
* - Duplicate criteria was not met		

SOUTHWEST RESEARCH INSTITUTE

Metals Report - Form VI

Duplicates

000055 **Client Sample ID**

A2-S1D

Client: Tetra Tech
Task Order: 160115-1
Lab ID: 588556D
Result Units: mg/Kg, dry wt. basis

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Matrix: Soil, Solid
% Solids: NA

Case: 1116399
Project: 21431.01.001

Analyte	Parent Sample Result	Qual	Duplicate Result	Qual	RPD	RPD Limit	Control Limit	M	Note
Aluminum	25400	D	25800	D	1.6%	20%	-	P1	
Antimony	4.99	U	4.86	U	-	-	-	P2	#
Arsenic	31.3		33.3		6.2%	20%	-	P2	
Barium	154000	D	163000	D	5.7%	20%	-	P2	
Beryllium	1.12		1.14		1.8%	-	0.499	P2	
Bismuth	2.06		2.22		7.5%	-	2.00	P2	
Boron	638	UD	712	UD	-	-	-	P1	#
Cadmium	1.76		1.79		1.7%	-	0.499	P2	
Calcium	62800	D	58400	D	7.3%	20%	-	P2	
Chromium	56.0	D	48.4	D	14.6%	-	49.1	P2	
Cobalt	930	D	966	D	3.8%	20%	-	P2	
Copper	602	D	625	D	3.7%	20%	-	P2	
Iron	17500	D	17200	D	1.7%	20%	-	P2	
Lanthanum	37.0	N	34.3	N	7.6%	20%	-	P1	
Lead	4230	D	4070	D	3.9%	20%	-	P1	
Lithium	23.6		23.7		0.4%	20%	-	P3	
Magnesium	10100	D	9570	D	5.4%	20%	-	P2	
Manganese	696	D	666	D	4.4%	20%	-	P2	
Molybdenum	113	D	116	D	2.6%	20%	-	P2	
Nickel	1220	D	1290	D	5.6%	20%	-	P2	
Palladium	2.00	U	1.94	U	-	-	-	P1	#
Phosphorus	460		451		2.0%	20%	-	P1	
Potassium	5840	D	6060	D	3.7%	20%	-	P3	
Selenium	48.3	D	47.9	D	0.8%	-	9.99	P2	
Silicon	126000	D	126000	D	0.0%	20%	-	P2	
Silver	0.999	U	0.971	U	-	-	-	P1	#
Sodium	3060	D	3190	D	4.2%	20%	-	P3	
Strontium	1850	D	1910	D	3.2%	20%	-	P2	
Sulfur	42500	D	42300	D	0.5%	20%	-	P1	
Thallium	4.99	U	4.86	U	-	-	-	P2	#
Thorium	61.8	D	60.8	D	1.6%	-	20.0	P2	
Tin	20.0	*N	14.7	*N	**30.5%**	20%	-	P1	
Titanium	1610	D	1600	D	0.6%	20%	-	P2	
Tungsten	4.74		3.42		32.4%	-	2.00	P1	
Vanadium	191	D	194	D	1.6%	20%	-	P2	
Yttrium	17.1		17.9		4.6%	20%	-	P2	
Zinc	175	D	178	D	1.7%	20%	-	P2	
Zirconium	212	D	208	D	1.9%	-	49.1	P2	

# indicates that both the parent and duplicate sample results are below the RL, therefore no RPD limit or control limit is applicable.

Data Reporting Qualifiers (Qual)	***Columns***	***Instruments/Method (M)***
U - Result is less than the SwRI Reporting Limit (RL) N - Matrix spike and/or matrix spike duplicate criteria was not met X - Analytical spike criteria was not met E - Result is estimated due to interferences D - Result is reported from a dilution * - Duplicate criteria was not met	M - Instrument RPD - Relative Percent Difference	P3 - ICP PE Optima 7300DV/SW846 Method 6010B P2 - ICP TJA Trace 2/SW846 Method 6010B P1 - ICP TJA Trace 1/SW846 Method 6010B NA - Not Applicable

SOUTHWEST RESEARCH INSTITUTE

000056 **SwRI ID**

LCS16A26KE3

Metals Report - Form VII

Laboratory Control Sample

Client: Tetra Tech
Task Order: 160115-1
Lab ID: LCS16A26KE3
Result Units: mg/Kg

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Matrix: Soil, Solid
Associated Prep Batches: 20160126-P004

Case: 1116399
Project: 21431.01.001
LCS Source: Spex Certiprep, Inorganic Ventures

Analyte	True	Found	Qual	%Rec.	Limit	M	Analysis Date/Time
Aluminum	400	403		100.8%	80%-120%	P1	02/05/2016 18:54
Antimony	100	100		100.0%	80%-120%	P2	02/05/2016 18:57
Arsenic	400	390		97.5%	80%-120%	P2	02/05/2016 18:57
Barium	-	-	-	-	-	NA	-
Beryllium	10.0	9.53		95.3%	80%-120%	P2	02/05/2016 18:57
Bismuth	-	-	-	-	-	NA	-
Boron	-	-	-	-	-	NA	-
Cadmium	10.0	9.63		96.3%	80%-120%	P2	02/05/2016 18:57
Calcium	2000	2050		102.5%	80%-120%	P2	02/05/2016 18:57
Chromium	-	-	-	-	-	NA	-
Cobalt	100	97.5		97.5%	80%-120%	P2	02/05/2016 18:57
Copper	50.0	49.5		99.0%	80%-120%	P2	02/05/2016 18:57
Iron	200	209		104.5%	80%-120%	P2	02/05/2016 18:57
Lanthanum	-	-	-	-	-	NA	-
Lead	-	-	-	-	-	NA	-
Lithium	-	-	-	-	-	NA	-
Magnesium	2000	1980		99.0%	80%-120%	P2	02/05/2016 18:57
Manganese	100	98.4		98.4%	80%-120%	P2	02/05/2016 18:57
Molybdenum	-	-	-	-	-	NA	-
Nickel	100	95.4		95.4%	80%-120%	P2	02/05/2016 18:57
Palladium	-	-	-	-	-	NA	-
Phosphorus	200	190		95.0%	80%-120%	P1	02/05/2016 18:54
Potassium	2000	2030		101.5%	80%-120%	P3	02/08/2016 18:15
Selenium	400	371		92.8%	80%-120%	P2	02/05/2016 18:57
Silicon	-	-	-	-	-	NA	-
Silver	10.0	9.82		98.2%	80%-120%	P1	02/05/2016 18:54
Sodium	2000	2080		104.0%	80%-120%	P3	02/08/2016 18:15
Strontium	-	-	-	-	-	NA	-
Sulfur	-	-	-	-	-	NA	-
Thallium	400	398		99.5%	80%-120%	P2	02/05/2016 18:57
Thorium	-	-	-	-	-	NA	-
Tin	-	-	-	-	-	NA	-
Titanium	-	-	-	-	-	NA	-
Tungsten	-	-	-	-	-	NA	-
Vanadium	100	99.1		99.1%	80%-120%	P2	02/05/2016 18:57
Yttrium	-	-	-	-	-	NA	-
Zinc	100	98.5		98.5%	80%-120%	P2	02/05/2016 18:57
Zirconium	-	-	-	-	-	NA	-

Instruments/Methods (M)

P3 - ICP PE Optima 7300DV/SW846 Method 6010B
P2 - ICP TJA Trace 2/SW846 Method 6010B
P1 - ICP TJA Trace 1/SW846 Method 6010B
NA - Not Applicable

Form VII-IN

SOUTHWEST RESEARCH INSTITUTE

Metals Report - Form VII

Laboratory Control Sample

000057 **SwRI ID**

LCS16A26KE4

Client: Tetra Tech
Task Order: 160115-1
Lab ID: LCS16A26KE4
Result Units: mg/Kg

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Matrix: Soil, Solid
Associated Prep Batches: 20160126-P004

Case: 1116399
Project: 21431.01.001
LCS Source: Inorganic Ventures

Analyte	True	Found	Qual	%Rec.	Limit	M	Analysis Date/Time
Aluminum	-	-	-	-	-	NA	-
Antimony	-	-	-	-	-	NA	-
Arsenic	-	-	-	-	-	NA	-
Barium	-	-	-	-	-	NA	-
Beryllium	-	-	-	-	-	NA	-
Bismuth	25.0	23.4		93.6%	80%-120%	P2	02/05/2016 19:02
Boron	-	-	-	-	-	NA	-
Cadmium	-	-	-	-	-	NA	-
Calcium	-	-	-	-	-	NA	-
Chromium	-	-	-	-	-	NA	-
Cobalt	-	-	-	-	-	NA	-
Copper	-	-	-	-	-	NA	-
Iron	-	-	-	-	-	NA	-
Lanthanum	25.0	24.1		96.4%	80%-120%	P1	02/05/2016 18:59
Lead	-	-	-	-	-	NA	-
Lithium	25.0	24.9		99.6%	80%-120%	P3	02/08/2016 18:17
Magnesium	-	-	-	-	-	NA	-
Manganese	-	-	-	-	-	NA	-
Molybdenum	25.0	23.6		94.4%	80%-120%	P2	02/05/2016 19:02
Nickel	-	-	-	-	-	NA	-
Palladium	25.0	23.7		94.8%	80%-120%	P1	02/05/2016 18:59
Phosphorus	-	-	-	-	-	NA	-
Potassium	-	-	-	-	-	NA	-
Selenium	-	-	-	-	-	NA	-
Silicon	-	-	-	-	-	NA	-
Silver	-	-	-	-	-	NA	-
Sodium	-	-	-	-	-	NA	-
Strontium	-	-	-	-	-	NA	-
Sulfur	-	-	-	-	-	NA	-
Thallium	-	-	-	-	-	NA	-
Thorium	25.0	25.0		100.0%	80%-120%	P2	02/05/2016 19:02
Tin	25.0	22.9		91.6%	80%-120%	P1	02/05/2016 18:59
Titanium	-	-	-	-	-	NA	-
Tungsten	25.0	21.0		84.0%	80%-120%	P1	02/05/2016 18:59
Vanadium	-	-	-	-	-	NA	-
Yttrium	25.0	24.4		97.6%	80%-120%	P2	02/05/2016 19:02
Zinc	-	-	-	-	-	NA	-
Zirconium	-	-	-	-	-	NA	-

Instruments/Methods (M)

P3 - ICP PE Optima 7300DV/SW846 Method 6010B
P2 - ICP TJA Trace 2/SW846 Method 6010B
P1 - ICP TJA Trace 1/SW846 Method 6010B
NA - Not Applicable

Form VII-IN

SOUTHWEST RESEARCH INSTITUTE

000058 **SwRI ID**

LCS16A26KE7

Metals Report - Form VII

Laboratory Control Sample

Client: Tetra Tech
Task Order: 160115-1
Lab ID: LCS16A26KE7
Result Units: mg/Kg

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Matrix: Soil, Solid
Associated Prep Batches: 20160126-P004

Case: 1116399
Project: 21431.01.001
LCS Source: NIST SRM-278

Analyte	True	Found	Qual	%Rec.	Limit	M	Analysis Date/Time
Aluminum	74900	70600		94.3%	80%-120%	P1	02/05/2016 19:04
Antimony	-	-	-	-	-	NA	-
Arsenic	-	-	-	-	-	NA	-
Barium	-	-	-	-	-	NA	-
Beryllium +	2.00	2.57		128.5%	-	P2	02/05/2016 19:07
Bismuth	-	-	-	-	-	NA	-
Boron	-	-	-	-	-	NA	-
Cadmium	-	-	-	-	-	NA	-
Calcium	7030	6940		98.7%	80%-120%	P2	02/05/2016 19:07
Chromium	-	-	-	-	-	NA	-
Cobalt	-	-	-	-	-	NA	-
Copper	5.90	5.21		88.3%	80%-120%	P2	02/05/2016 19:07
Iron +	14300	13800		96.5%	-	P2	02/05/2016 19:07
Lanthanum +	33.0	27.2		82.4%	-	P1	02/05/2016 19:04
Lead	-	-	-	-	-	NA	-
Lithium +	47.0	43.8		93.2%	-	P3	02/08/2016 18:18
Magnesium	1390	1390		100.0%	80%-120%	P2	02/05/2016 19:07
Manganese	403	371		92.1%	80%-120%	P2	02/05/2016 19:07
Molybdenum +	3.00	3.43		114.3%	-	P2	02/05/2016 19:07
Nickel	3.60	3.06		85.0%	80%-120%	P2	02/05/2016 19:07
Palladium	-	-	-	-	-	NA	-
Phosphorus	157	163		103.8%	80%-120%	P1	02/05/2016 19:04
Potassium	34500	33200		96.2%	80%-120%	P3	02/08/2016 18:18
Selenium	-	-	-	-	-	NA	-
Silicon	-	-	-	-	-	NA	-
Silver	-	-	-	-	-	NA	-
Sodium	35900	35500		98.9%	80%-120%	P3	02/08/2016 18:18
Strontium	-	-	-	-	-	NA	-
Sulfur	-	-	-	-	-	NA	-
Thallium	-	-	-	-	-	NA	-
Thorium	12.4	16.6		**133.9%**	80%-120%	P2	02/05/2016 19:07
Tin	-	-	-	-	-	NA	-
Titanium	-	-	-	-	-	NA	-
Tungsten	-	-	-	-	-	NA	-
Vanadium +	15.0	6.66		44.4%	-	P2	02/05/2016 19:07
Yttrium +	41.0	36.4		88.8%	-	P2	02/05/2016 19:07
Zinc +	55.0	43.5		79.1%	-	P2	02/05/2016 19:07
Zirconium	-	-	-	-	-	NA	-

+ The true value for this analyte is a reference/information value only; it is not a certified value.

Instruments/Methods (M)

P3 - ICP PE Optima 7300DV/SW846 Method 6010B
P2 - ICP TJA Trace 2/SW846 Method 6010B
P1 - ICP TJA Trace 1/SW846 Method 6010B
NA - Not Applicable

Form VII-IN

SOUTHWEST RESEARCH INSTITUTE

000059 **SwRI ID**

LCS16A26KE8

Metals Report - Form VII

Laboratory Control Sample

Client: Tetra Tech
Task Order: 160115-1
Lab ID: LCS16A26KE8
Result Units: mg/Kg

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Matrix: Soil, Solid
Associated Prep Batches: 20160126-P004

Case: 1116399
Project: 21431.01.001
LCS Source: NIST SRM-688

Analyte	True	Found	Qual	%Rec.	Limit	M	Analysis Date/Time
Aluminum	91900	87500		95.2%	80%-120%	P1	02/05/2016 19:09
Antimony	-	-	-	-	-	NA	-
Arsenic	-	-	-	-	-	NA	-
Barium	-	-	-	-	-	NA	-
Beryllium	-	-	-	-	-	NA	-
Bismuth	-	-	-	-	-	NA	-
Boron	-	-	-	-	-	NA	-
Cadmium	-	-	-	-	-	NA	-
Calcium +	87000	81100		93.2%	-	P2	02/05/2016 19:12
Chromium	-	-	-	-	-	NA	-
Cobalt +	49.7	41.9		84.3%	-	P2	02/05/2016 19:12
Copper +	96.0	90.6		94.4%	-	P2	02/05/2016 19:12
Iron	72400	68400		94.5%	80%-120%	P2	02/05/2016 19:12
Lanthanum	-	-	-	-	-	NA	-
Lead	-	-	-	-	-	NA	-
Lithium +	7.00	7.79		111.3%	-	P3	02/08/2016 18:20
Magnesium +	50700	49600		97.8%	-	P2	02/05/2016 19:12
Manganese	1290	1210		93.8%	80%-120%	P2	02/05/2016 19:12
Molybdenum	-	-	-	-	-	NA	-
Nickel +	150	144		96.0%	-	P2	02/05/2016 19:12
Palladium	-	-	-	-	-	NA	-
Phosphorus	585	565		96.6%	80%-120%	P1	02/05/2016 19:09
Potassium	1550	1560		100.6%	80%-120%	P3	02/08/2016 18:20
Selenium	-	-	-	-	-	NA	-
Silicon	-	-	-	-	-	NA	-
Silver	-	-	-	-	-	NA	-
Sodium	15900	16300		102.5%	80%-120%	P3	02/08/2016 18:20
Strontium	-	-	-	-	-	NA	-
Sulfur	-	-	-	-	-	NA	-
Thallium	-	-	-	-	-	NA	-
Thorium	-	-	-	-	-	NA	-
Tin	-	-	-	-	-	NA	-
Titanium	-	-	-	-	-	NA	-
Tungsten	-	-	-	-	-	NA	-
Vanadium +	250	250		100.0%	-	P2	02/05/2016 19:12
Yttrium +	17.0	18.3		107.6%	-	P2	02/05/2016 19:12
Zinc +	58.0	81.2		140.0%	-	P2	02/05/2016 19:12
Zirconium	-	-	-	-	-	NA	-

+ The true value for this analyte is a reference/information value only; it is not a certified value.

Instruments/Methods (M)

P3 - ICP PE Optima 7300DV/SW846 Method 6010B
P2 - ICP TJA Trace 2/SW846 Method 6010B
P1 - ICP TJA Trace 1/SW846 Method 6010B
NA - Not Applicable

Form VII-IN

SOUTHWEST RESEARCH INSTITUTE

000060 **SwRI ID**

LCS16A27KE3

Metals Report - Form VII

Laboratory Control Sample

Client: Tetra Tech
Task Order: 160115-1
Lab ID: LCS16A27KE3
Result Units: mg/Kg

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Matrix: Soil, Solid
Associated Prep Batches: 20160127-P004

Case: 1116399
Project: 21431.01.001
LCS Source: NIST SRM-278

Analyte	True	Found	Qual	%Rec.	Limit	M	Analysis Date/Time
Aluminum	-	-	-	-	-	NA	-
Antimony	-	-	-	-	-	NA	-
Arsenic	-	-	-	-	-	NA	-
Barium +	1140	880	D	77.2%	-	P2	02/08/2016 15:45
Beryllium	-	-	-	-	-	NA	-
Bismuth	-	-	-	-	-	NA	-
Boron	-	-	-	-	-	NA	-
Cadmium	-	-	-	-	-	NA	-
Calcium	-	-	-	-	-	NA	-
Chromium	-	-	-	-	-	NA	-
Cobalt	-	-	-	-	-	NA	-
Copper	-	-	-	-	-	NA	-
Iron	-	-	-	-	-	NA	-
Lanthanum	-	-	-	-	-	NA	-
Lead	-	-	-	-	-	NA	-
Lithium	-	-	-	-	-	NA	-
Magnesium	-	-	-	-	-	NA	-
Manganese	-	-	-	-	-	NA	-
Molybdenum	-	-	-	-	-	NA	-
Nickel	-	-	-	-	-	NA	-
Palladium	-	-	-	-	-	NA	-
Phosphorus	-	-	-	-	-	NA	-
Potassium	-	-	-	-	-	NA	-
Selenium	-	-	-	-	-	NA	-
Silicon	341000	293000	D	85.9%	80%-120%	P2	03/30/2016 18:19
Silver	-	-	-	-	-	NA	-
Sodium	-	-	-	-	-	NA	-
Strontium	63.5	60.4	D	95.1%	80%-120%	P2	02/08/2016 17:28
Sulfur	-	-	-	-	-	NA	-
Thallium	-	-	-	-	-	NA	-
Thorium	-	-	-	-	-	NA	-
Tin	-	-	-	-	-	NA	-
Titanium	1450	1260	D	86.9%	80%-120%	P2	02/08/2016 17:28
Tungsten	-	-	-	-	-	NA	-
Vanadium	-	-	-	-	-	NA	-
Yttrium	-	-	-	-	-	NA	-
Zinc	-	-	-	-	-	NA	-
Zirconium +	295	272	D	92.2%	-	P2	02/08/2016 17:28

+ The true value for this analyte is a reference/information value only; it is not a certified value.

Instruments/Methods (M)

P3 - ICP PE Optima 7300DV/SW846 Method 6010B
P2 - ICP TJA Trace 2/SW846 Method 6010B
P1 - ICP TJA Trace 1/SW846 Method 6010B
NA - Not Applicable

Form VII-IN

SOUTHWEST RESEARCH INSTITUTE

000061 **SwRI ID**

LCS16A27KE4

Metals Report - Form VII

Laboratory Control Sample

Client: Tetra Tech
Task Order: 160115-1
Lab ID: LCS16A27KE4
Result Units: mg/Kg

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Matrix: Soil, Solid
Associated Prep Batches: 20160127-P004

Case: 1116399
Project: 21431.01.001
LCS Source: NIST SRM-688

Analyte	True	Found	Qual	%Rec.	Limit	M	Analysis Date/Time
Aluminum	-	-	-	-	-	NA	-
Antimony	-	-	-	-	-	NA	-
Arsenic	-	-	-	-	-	NA	-
Barium +	200	165	D	82.5%	-	P2	02/08/2016 17:34
Beryllium	-	-	-	-	-	NA	-
Bismuth	-	-	-	-	-	NA	-
Boron	-	-	-	-	-	NA	-
Cadmium	-	-	-	-	-	NA	-
Calcium	-	-	-	-	-	NA	-
Chromium	332	312	D	94.0%	80%-120%	P2	02/08/2016 17:34
Cobalt	-	-	-	-	-	NA	-
Copper	-	-	-	-	-	NA	-
Iron	-	-	-	-	-	NA	-
Lanthanum	-	-	-	-	-	NA	-
Lead	-	-	-	-	-	NA	-
Lithium	-	-	-	-	-	NA	-
Magnesium	-	-	-	-	-	NA	-
Manganese	-	-	-	-	-	NA	-
Molybdenum	-	-	-	-	-	NA	-
Nickel	-	-	-	-	-	NA	-
Palladium	-	-	-	-	-	NA	-
Phosphorus	-	-	-	-	-	NA	-
Potassium	-	-	-	-	-	NA	-
Selenium	-	-	-	-	-	NA	-
Silicon	226000	207000	D	91.6%	80%-120%	P2	03/30/2016 18:24
Silver	-	-	-	-	-	NA	-
Sodium	-	-	-	-	-	NA	-
Strontium	169	156	D	92.3%	80%-120%	P2	02/08/2016 17:34
Sulfur	-	-	-	-	-	NA	-
Thallium	-	-	-	-	-	NA	-
Thorium	-	-	-	-	-	NA	-
Tin	-	-	-	-	-	NA	-
Titanium	6930	6340	D	91.5%	80%-120%	P2	02/08/2016 17:34
Tungsten	-	-	-	-	-	NA	-
Vanadium	-	-	-	-	-	NA	-
Yttrium	-	-	-	-	-	NA	-
Zinc	-	-	-	-	-	NA	-
Zirconium +	61.0	61.9	D	101.5%	-	P2	02/08/2016 17:34

+ The true value for this analyte is a reference/information value only; it is not a certified value.

Instruments/Methods (M)

P3 - ICP PE Optima 7300DV/SW846 Method 6010B
P2 - ICP TJA Trace 2/SW846 Method 6010B
P1 - ICP TJA Trace 1/SW846 Method 6010B
NA - Not Applicable

Form VII-IN

Appendix F
Radon Emanation and Gamma Spectrometry Results

Thermal Test Condition 1

SOUTHWEST RESEARCH INSTITUTE

ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 1
Customer Sample ID: 1D7-84-85
SwRI System ID: 588049
Sample Treatment: None ("As Received")
Moisture Saturation (relative): "As Received"
%Solids as Received: 81.06%
%Solids as Tested: 81.06%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	3085	75	27	3806	93	34	pCi/g
Pb-214	3238	153	37	3994	188	46	pCi/g
Ra-226	3161	170	32	3900	210	40	pCi/g
Equilibrium Radon Conc. (Rn-222)	444	22	15	547	28	18	pCi/g
Radon Emanation Coefficient	0.140	0.010	---	0.140	0.010	---	---
Ra-226 Bulk	2780	145	13	3430	178	16	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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SOUTHWEST RESEARCH INSTITUTE

ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 1
Customer Sample ID: A2-S1
SwRI System ID: 588556
Sample Treatment: None ("As Received")
Moisture Saturation (relative): "As Received"
%Solids as Received: 78.76%
%Solids as Tested: 78.76%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	2145	54	22	2723	68	28	pCi/g
Pb-214	2268	107	36	2879	136	45	pCi/g
Ra-226	2206	120	29	2801	152	36	pCi/g
Equilibrium Radon Conc. (Rn-222)	147	7.5	8.2	186	9.6	10	pCi/g
Radon Emanation Coefficient	0.0664	0.0050	---	0.0664	0.0050	---	---
Ra-226 Bulk	1980	105	14	2514	134	18	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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SOUTHWEST RESEARCH INSTITUTE

ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 1
Customer Sample ID: A1-AC-1
SwRI System ID: 590212
Sample Treatment: None ("As Received")
Moisture Saturation (relative): "As Received"
%Solids as Received: 85.05%
%Solids as Tested: 85.05%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	4340	104	37	5103	123	43	pCi/g
Pb-214	4596	216	55	5403	254	65	pCi/g
Ra-226	4468	240	46	5253	282	54	pCi/g
Equilibrium Radon Conc. (Rn-222)	573	29	16	674	34	19	pCi/g
Radon Emanation Coefficient	0.128	0.0095	---	0.128	0.0095	---	---
Ra-226 Bulk	3890	203	20	4574	239	24	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 1
Customer Sample ID: A1-AC-3
SwRI System ID: 590213
Sample Treatment: None ("As Received")
Moisture Saturation (relative): "As Received"
%Solids as Received: 86.33%
%Solids as Tested: 86.33%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	2126	54	28	2462	62	32	pCi/g
Pb-214	2294	108	39	2657	126	45	pCi/g
Ra-226	2210	121	33	2560	140	39	pCi/g
Equilibrium Radon Conc. (Rn-222)	309	16	12	358	18	14	pCi/g
Radon Emanation Coefficient	0.140	0.010	---	0.140	0.010	---	---
Ra-226 Bulk	1555	82	13	1801	95	15	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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SOUTHWEST RESEARCH INSTITUTE
ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 1
Customer Sample ID: A2-AC-21
SwRI System ID: 590214
Sample Treatment: None ("As Received")
Moisture Saturation (relative): "As Received"
%Solids as Received: 81.35%
%Solids as Tested: 81.35%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	196	7.4	8.2	241	9.0	10	pCi/g
Pb-214	209	11	12	257	13	15	pCi/g
Ra-226	203	13	10	249	16	13	pCi/g
Equilibrium Radon Conc. (Rn-222)	95.9	5.0	6.9	118	6.2	8.5	pCi/g
Radon Emanation Coefficient	0.473	0.039	---	0.473	0.039	---	---
Ra-226 Bulk	160	9.2	4.1	196	11.4	5.0	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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SOUTHWEST RESEARCH INSTITUTE

ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 1
Customer Sample ID: WL-234CT
SwRI System ID: 591000
Sample Treatment: None ("As Received")
Moisture Saturation (relative): "As Received"
%Solids as Received: 73.37%
%Solids as Tested: 73.37%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	1144	31	16	1560	42	22	pCi/g
Pb-214	1203	57	24	1639	78	33	pCi/g
Ra-226	1174	65	20	1600	88	27	pCi/g
Equilibrium Radon Conc. (Rn-222)	159	8.2	8.6	217	11	12	pCi/g
Radon Emanation Coefficient	0.136	0.010	---	0.136	0.010	---	---
Ra-226 Bulk	888	47.1	7.5	1210	64	10	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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SOUTHWEST RESEARCH INSTITUTE

DUPLICATE ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 1
Customer Sample ID: 1D7-84-85 Duplicate
SwRI System ID: 588049D
Sample Treatment: None ("As Received")
Moisture Saturation (relative): "As Received"
%Solids as Received: 81.06%
%Solids as Tested: 81.06%

	As Tested			Dry Weight Basis				Duplicate
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**	**Evaluation**
Bi-214	2967	73	30	3660	90	37	pCi/g	1.1
Pb-214	3129	147	46	3860	182	57	pCi/g	0.5
Ra-226	3048	164	38	3760	203	47	pCi/g	0.5
Equilibrium Radon Conc. (Rn-222)	421	21	14	520	26	17	pCi/g	0.7
Radon Emanation Coefficient	0.138	0.010	---	0.138	0.010	---	---	0.1
Ra-226 Bulk	2780	145	13	3430	178	16	pCi/g	NA

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample. Sample 1D7-84-85 was not analyzed in duplicate for Ra-226 Bulk analysis; the original analysis results are reported in this table and the duplicate evaluation (or duplicate error ratio, DER) is not applicable.

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Thermal Test Condition 2

SOUTHWEST RESEARCH INSTITUTE

ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 2
Customer Sample ID: 1D7-84-85
SwRI System ID: 588049
Sample Treatment: Heated at 105 ^{o}C for 16 hours
Moisture Saturation (relative): "As Found" after Treatment
%Solids as Received: 81.06%
%Solids as Tested: 99.72%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	3683	89	28	3693	89	28	pCi/g
Pb-214	3869	182	45	3880	183	45	pCi/g
Ra-226	3776	203	36	3787	203	36	pCi/g
Equilibrium Radon Conc. (Rn-222)	194	9.9	9.3	195	9.9	9.4	pCi/g
Radon Emanation Coefficient	0.0514	0.0038	---	0.0514	0.0038	---	---
Ra-226 Bulk	2780	145	13	3430	178	16	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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SOUTHWEST RESEARCH INSTITUTE

ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 2
Customer Sample ID: A2-S1
SwRI System ID: 588556
Sample Treatment: Heated at 105 ^{o}C for 16 hours
Moisture Saturation (relative): "As Found" after Treatment
%Solids as Received: 78.76%
%Solids as Tested: 99.86%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	2946	72	24	2950	72	24	pCi/g
Pb-214	3207	151	41	3211	151	41	pCi/g
Ra-226	3076	167	32	3081	168	32	pCi/g
Equilibrium Radon Conc. (Rn-222)	160	8.2	8.5	160	8.2	8.5	pCi/g
Radon Emanation Coefficient	0.0519	0.0039	---	0.0519	0.0039	---	---
Ra-226 Bulk	1980	105	14	2514	134	18	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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SOUTHWEST RESEARCH INSTITUTE

ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 2
Customer Sample ID: A1-AC-1
SwRI System ID: 590212
Sample Treatment: Heated at 105 ^{o}C for 16 hours
Moisture Saturation (relative): "As Found" after Treatment
%Solids as Received: 85.05%
%Solids as Tested: 99.98%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	5452	130	32	5454	130	32	pCi/g
Pb-214	5765	271	51	5766	271	51	pCi/g
Ra-226	5609	300	42	5610	301	42	pCi/g
Equilibrium Radon Conc. (Rn-222)	215	11	10	215	11	10	pCi/g
Radon Emanation Coefficient	0.0383	0.0028	---	0.0383	0.0028	---	---
Ra-226 Bulk	3890	203	20	4574	239	24	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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SOUTHWEST RESEARCH INSTITUTE

ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 2
Customer Sample ID: A1-AC-3
SwRI System ID: 590213
Sample Treatment: Heated at 105 ^{o}C for 16 hours
Moisture Saturation (relative): "As Found" after Treatment
%Solids as Received: 86.33%
%Solids as Tested: 99.80%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	2459	61	21	2464	61	21	pCi/g
Pb-214	2579	122	36	2584	122	36	pCi/g
Ra-226	2519	136	28	2524	136	28	pCi/g
Equilibrium Radon Conc. (Rn-222)	132	6.8	7.8	133	6.8	7.8	pCi/g
Radon Emanation Coefficient	0.0525	0.0039	---	0.0525	0.0039	---	---
Ra-226 Bulk	1555	82	13	1801	95	15	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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SOUTHWEST RESEARCH INSTITUTE

ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 2
Customer Sample ID: A2-AC-21
SwRI System ID: 590214
Sample Treatment: Heated at 105 ^{o}C for 16 hours
Moisture Saturation (relative): "As Found" after Treatment
%Solids as Received: 81.35%
%Solids as Tested: 100.00%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	236	8.4	8.8	236	8.4	8.8	pCi/g
Pb-214	271	14	10	271	14	10	pCi/g
Ra-226	254	16.0	9.4	254	16.0	9.4	pCi/g
Equilibrium Radon Conc. (Rn-222)	57.9	3.1	5.3	57.9	3.1	5.3	pCi/g
Radon Emanation Coefficient	0.228	0.019	---	0.228	0.019	---	---
Ra-226 Bulk	160	9.2	4.1	196	11.4	5.0	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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SOUTHWEST RESEARCH INSTITUTE

ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 2
Customer Sample ID: WL-234CT
SwRI System ID: 591000
Sample Treatment: Heated at 105 ^{o}C for 16 hours
Moisture Saturation (relative): "As Found" after Treatment
%Solids as Received: 73.37%
%Solids as Tested: 99.68%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	2178	55	22	2185	55	22	pCi/g
Pb-214	2245	106	35	2253	107	35	pCi/g
Ra-226	2212	120	28	2219	120	28	pCi/g
Equilibrium Radon Conc. (Rn-222)	121	6.3	7.6	121	6.3	7.6	pCi/g
Radon Emanation Coefficient	0.0547	0.0041	---	0.0547	0.0041	---	---
Ra-226 Bulk	888	47.1	7.5	1210	64	10	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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SOUTHWEST RESEARCH INSTITUTE

DUPLICATE ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 2
Customer Sample ID: A2-S1 Duplicate
SwRI System ID: 588556
Sample Treatment: Heated at 105 ^{o}C for 16 hours
Moisture Saturation (relative): "As Found" after Treatment
%Solids as Received: 78.76%
%Solids as Tested: 99.91%

	As Tested			Dry Weight Basis				Duplicate
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**	**Evaluation**
Bi-214	2955	72	29	2957	72	29	pCi/g	0.1
Pb-214	3241	153	43	3244	153	43	pCi/g	0.2
Ra-226	3098	169	36	3100	169	36	pCi/g	0.1
Equilibrium Radon Conc. (Rn-222)	160	8.2	8.5	160	8.2	8.5	pCi/g	0.02
Radon Emanation Coefficient	0.0517	0.0039	---	0.0517	0.0039	---	---	0.05
Ra-226 Bulk	1980	106	14	2514	134	17	pCi/g	NA

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample. Since the Ra-226 Bulk results are the same for the original and duplicate analyses of sample A2-S1, the duplicate evaluation (or duplicate error ratio, DER) could not be calculated.

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Thermal Test Condition 3

SOUTHWEST RESEARCH INSTITUTE

ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 3
Customer Sample ID: 1D7-84-85
SwRI System ID: 588049
Sample Treatment: Heated at 250 °C for 16 hours
Moisture Saturation (relative): "As Found" after Treatment
%Solids as Received: 81.06%
%Solids as Tested: 100%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	4198	101	29	4198	101	29	pCi/g
Pb-214	4469	210	48	4469	210	48	pCi/g
Ra-226	4333	233	38	4333	233	38	pCi/g
Equilibrium Radon Conc. (Rn-222)	178	9.1	8.8	178	9.1	8.8	pCi/g
Radon Emanation Coefficient	0.0411	0.0031	---	0.0411	0.0031	---	---
Ra-226 Bulk	2780	145	13	3430	178	16	pCi/g

Note 1: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.
Note 2: For all Thermal Test Condition 3 samples, the "%Solids as Tested" were 100%, not as determined.

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SOUTHWEST RESEARCH INSTITUTE

ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 3
Customer Sample ID: A2-S1
SwRI System ID: 588556
Sample Treatment: Heated at 250 ^{o}C for 16 hours
Moisture Saturation (relative): "As Found" after Treatment
%Solids as Received: 78.76%
%Solids as Tested: 100%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	3097	75	30	3097	75	30	pCi/g
Pb-214	3305	156	36	3305	156	36	pCi/g
Ra-226	3201	173	33	3201	173	33	pCi/g
Equilibrium Radon Conc. (Rn-222)	98.1	5.1	6.4	98.1	5.1	6.4	pCi/g
Radon Emanation Coefficient	0.0306	0.0023	---	0.0306	0.0023	---	---
Ra-226 Bulk	1980	105	14	2514	134	18	pCi/g

Note 1: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.
Note 2: For all Thermal Test Condition 3 samples, the "%Solids as Tested" were 100%, not as determined.

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SOUTHWEST RESEARCH INSTITUTE
ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 3
Customer Sample ID: A1-AC-1
SwRI System ID: 590212
Sample Treatment: Heated at 250 °C for 16 hours
Moisture Saturation (relative): "As Found" after Treatment
%Solids as Received: 85.05%
%Solids as Tested: 100%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	5193	124	40	5193	124	40	pCi/g
Pb-214	5406	254	57	5406	254	57	pCi/g
Ra-226	5299	283	48	5299	283	48	pCi/g
Equilibrium Radon Conc. (Rn-222)	239	12	10	239	12	10	pCi/g
Radon Emanation Coefficient	0.0452	0.0033	---	0.0452	0.0033	---	---
Ra-226 Bulk	3890	203	20	4574	239	24	pCi/g

Note 1: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.
Note 2: For all Thermal Test Condition 3 samples, the "%Solids as Tested" were 100%, not as determined.

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SOUTHWEST RESEARCH INSTITUTE
ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 3
Customer Sample ID: A1-AC-3
SwRI System ID: 590213
Sample Treatment: Heated at 250 °C for 16 hours
Moisture Saturation (relative): "As Found" after Treatment
%Solids as Received: 86.33%
%Solids as Tested: 100%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	2931	72	25	2931	72	25	pCi/g
Pb-214	3095	146	36	3095	146	36	pCi/g
Ra-226	3013	163	30	3013	163	30	pCi/g
Equilibrium Radon Conc. (Rn-222)	138	7.1	7.8	138	7.1	7.8	pCi/g
Radon Emanation Coefficient	0.0459	0.0034	---	0.0459	0.0034	---	---
Ra-226 Bulk	1555	82	13	1801	95	15	pCi/g

Note 1: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.
Note 2: For all Thermal Test Condition 3 samples, the "%Solids as Tested" were 100%, not as determined.

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SOUTHWEST RESEARCH INSTITUTE

ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 3
Customer Sample ID: A2-AC-21
SwRI System ID: 590214
Sample Treatment: Heated at 250 ^{o}C for 16 hours
Moisture Saturation (relative): "As Found" after Treatment
%Solids as Received: 81.35%
%Solids as Tested: 100%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	270	9.3	7.6	270	9.3	7.6	pCi/g
Pb-214	323	16	12	323	16	12	pCi/g
Ra-226	296	19	10	296	19	10	pCi/g
Equilibrium Radon Conc. (Rn-222)	36.7	2.0	4.1	36.7	2.0	4.1	pCi/g
Radon Emanation Coefficient	0.124	0.010	---	0.124	0.010	---	---
Ra-226 Bulk	160	9.2	4.1	196	11.4	5.0	pCi/g

Note 1: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.
Note 2: For all Thermal Test Condition 3 samples, the "%Solids as Tested" were 100%, not as determined.

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SOUTHWEST RESEARCH INSTITUTE
ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 3
Customer Sample ID: WL-234CT
SwRI System ID: 591000
Sample Treatment: Heated at 250 ^{o}C for 16 hours
Moisture Saturation (relative): "As Found" after Treatment
%Solids as Received: 73.37%
%Solids as Tested: 100%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	2058	52	21	2058	52	21	pCi/g
Pb-214	2196	104	36	2196	104	36	pCi/g
Ra-226	2127	116	28	2127	116	28	pCi/g
Equilibrium Radon Conc. (Rn-222)	92.5	4.8	6.8	92.5	4.8	6.8	pCi/g
Radon Emanation Coefficient	0.0435	0.0033	---	0.0435	0.0033	---	---
Ra-226 Bulk	888	47.1	7.5	1210	64	10	pCi/g

Note 1: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.
Note 2: For all Thermal Test Condition 3 samples, the "%Solids as Tested" were 100%, not as determined.

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SOUTHWEST RESEARCH INSTITUTE

DUPLICATE ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 3
Customer Sample ID: 1D7-84-85 Duplicate
SwRI System ID: 588049
Sample Treatment: Heated at 250 °C for 16 hours
Moisture Saturation (relative): "As Found" after Treatment
%Solids as Received: 81.06%
%Solids as Tested: 100%

	As Tested			Dry Weight Basis				Duplicate
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**	**Evaluation**
Bi-214	4471	107	39	4471	107	39	pCi/g	1.9
Pb-214	4654	219	41	4654	219	41	pCi/g	0.6
Ra-226	4563	244	40	4563	244	40	pCi/g	0.7
Equilibrium Radon Conc. (Rn-222)	191	9.8	9.1	191	9.8	9.1	pCi/g	1.0
Radon Emanation Coefficient	0.0420	0.0031	---	0.0420	0.0031	---	---	0.2
Ra-226 Bulk	2780	145	13	3430	178	16	pCi/g	NA

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample. Sample 1D7-84-85 was not analyzed in duplicate for Ra-226 Bulk analysis; the original analysis results are reported in this table and the duplicate evaluation (or duplicate error ratio, DER) is not applicable.

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Thermal Test Condition 4

SOUTHWEST RESEARCH INSTITUTE

ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 4
Customer Sample ID: 1D7-84-85
SwRI System ID: 588049
Sample Treatment: Heated at 250 °C for 48 hours
Moisture Saturation (relative): "As Found" after Treatment
%Solids as Received: 81.06%
%Solids as Tested: 100%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	4135	99	30	4135	99	30	pCi/g
Pb-214	4335	204	44	4335	204	44	pCi/g
Ra-226	4235	227	37	4235	227	37	pCi/g
Equilibrium Radon Conc. (Rn-222)	155	8.0	10	155	8.0	10.13	pCi/g
Radon Emanation Coefficient	0.0366	0.0027	---	0.0366	0.0027	---	---
Ra-226 Bulk	2780	145	13	3430	178	16	pCi/g

Note 1: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.
Note 2: For all Thermal Test Condition 4 samples, the "%Solids as Tested" were 100%, not as determined.

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SOUTHWEST RESEARCH INSTITUTE

ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 4
Customer Sample ID: A2-S1
SwRI System ID: 588556
Sample Treatment: Heated at 250 °C for 48 hours
Moisture Saturation (relative): "As Found" after Treatment
%Solids as Received: 78.76%
%Solids as Tested: 100%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	2903	71	30	2903	71	30	pCi/g
Pb-214	3092	146	37	3092	146	37	pCi/g
Ra-226	2998	162	34	2998	162	34	pCi/g
Equilibrium Radon Conc. (Rn-222)	132	6.9	9.3	132	6.9	9.3	pCi/g
Radon Emanation Coefficient	0.0440	0.0033	---	0.0440	0.0033	---	---
Ra-226 Bulk	1980	105	14	2514	134	18	pCi/g

Note 1: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.
Note 2: For all Thermal Test Condition 4 samples, the "%Solids as Tested" were 100%, not as determined.

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ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 4
Customer Sample ID: A1-AC-1
SwRI System ID: 590212
Sample Treatment: Heated at 250 °C for 48 hours
Moisture Saturation (relative): "As Found" after Treatment
%Solids as Received: 85.05%
%Solids as Tested: 100%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	5535	132	37	5535	132	37	pCi/g
Pb-214	5768	271	56	5768	271	56	pCi/g
Ra-226	5652	301	47	5652	301	47	pCi/g
Equilibrium Radon Conc. (Rn-222)	186	9.6	11	186	9.6	11	pCi/g
Radon Emanation Coefficient	0.0330	0.0024	---	0.0330	0.0024	---	---
Ra-226 Bulk	3890	203	20	4574	239	24	pCi/g

Note 1: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.
Note 2: For all Thermal Test Condition 4 samples, the "%Solids as Tested" were 100%, not as determined.

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ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 4
Customer Sample ID: A1-AC-3
SwRI System ID: 590213
Sample Treatment: Heated at 250 °C for 48 hours
Moisture Saturation (relative): "As Found" after Treatment
%Solids as Received: 86.33%
%Solids as Tested: 100%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	2243	56	20	2243	56	20	pCi/g
Pb-214	2382	112	33	2382	112	33	pCi/g
Ra-226	2312	126	26	2312	126	26	pCi/g
Equilibrium Radon Conc. (Rn-222)	101	5.3	8.1	101	5.3	8.1	pCi/g
Radon Emanation Coefficient	0.0435	0.0033	---	0.0435	0.0033	---	---
Ra-226 Bulk	1555	82	13	1801	95	15	pCi/g

Note 1: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.
Note 2: For all Thermal Test Condition 4 samples, the "%Solids as Tested" were 100%, not as determined.

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SOUTHWEST RESEARCH INSTITUTE

ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 4
Customer Sample ID: A2-AC-21
SwRI System ID: 590214
Sample Treatment: Heated at 250 °C for 48 hours
Moisture Saturation (relative): "As Found" after Treatment
%Solids as Received: 81.35%
%Solids as Tested: 100%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	277	9.5	8.8	277	9.5	8.8	pCi/g
Pb-214	320	16	13	320	16	13	pCi/g
Ra-226	299	19	11	299	19	11	pCi/g
Equilibrium Radon Conc. (Rn-222)	38.9	2.2	5.2	38.9	2.2	5.2	pCi/g
Radon Emanation Coefficient	0.130	0.011	---	0.130	0.011	---	---
Ra-226 Bulk	160	9.2	4.1	196	11.4	5.0	pCi/g

Note 1: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.
Note 2: For all Thermal Test Condition 4 samples, the "%Solids as Tested" were 100%, not as determined.

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SOUTHWEST RESEARCH INSTITUTE
ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 4
Customer Sample ID: WL-234CT
SwRI System ID: 591000
Sample Treatment: Heated at 250 °C for 48 hours
Moisture Saturation (relative): "As Found" after Treatment
%Solids as Received: 73.37%
%Solids as Tested: 100%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	2920	72	22	2920	72	22	pCi/g
Pb-214	3154	149	47	3154	149	47	pCi/g
Ra-226	3037	165	34	3037	165	34	pCi/g
Equilibrium Radon Conc. (Rn-222)	87.3	4.7	8.1	87.3	4.7	8.1	pCi/g
Radon Emanation Coefficient	0.0287	0.0022	---	0.0287	0.0022	---	---
Ra-226 Bulk	888	47.1	7.5	1210	64	10	pCi/g

Note 1: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.
Note 2: For all Thermal Test Condition 4 samples, the "%Solids as Tested" were 100%, not as determined.

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SOUTHWEST RESEARCH INSTITUTE

DUPLICATE ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 4
Customer Sample ID: A2-S1 Duplicate
SwRI System ID: 588556
Sample Treatment: Heated at 250 ^{o}C for 48 hours
Moisture Saturation (relative): "As Found" after Treatment
%Solids as Received: 78.76%
%Solids as Tested: 100%

	As Tested			Dry Weight Basis				Duplicate
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**	**Evaluation**
Bi-214	3032	74	23	3032	74	23	pCi/g	1.3
Pb-214	3254	153	38	3254	153	38	pCi/g	0.8
Ra-226	3143	170	30	3143	170	30	pCi/g	0.6
Equilibrium Radon Conc. (Rn-222)	157	8.1	10	157	8.1	10	pCi/g	2.3
Radon Emanation Coefficient	0.0499	0.0037	---	0.0499	0.0037	---	---	1.2
Ra-226 Bulk	1980	106	14	2514	134	17	pCi/g	NA

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample. Since the Ra-226 Bulk results are the same for the original and duplicate analyses of sample A2-S1, the duplicate evaluation (or duplicate error ratio, DER) could not be calculated.

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Thermal Test Condition 5

SOUTHWEST RESEARCH INSTITUTE
ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 5
Customer Sample ID: 1D7-84-85
SwRI System ID: 588049
Sample Treatment: Heated at 250 °C for 48 hours
Moisture Saturation (relative): "As Received"
%Solids as Received: 81.06%
%Solids as Tested: 80.94%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	3244	78	25	4008	96	31	pCi/g
Pb-214	3222	152	40	3981	187	49	pCi/g
Ra-226	3233	170	32	3994	211	40	pCi/g
Equilibrium Radon Conc. (Rn-222)	290 J	15	12	359 J	18	15	pCi/g
Radon Emanation Coefficient	0.0898 J	0.0066	---	0.0898 J	0.0066	---	---
Ra-226 Bulk	2780	145	13	3430	178	16	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

REM for HVE
04 May 2016

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SOUTHWEST RESEARCH INSTITUTE

ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 5
Customer Sample ID: A2-S1
SwRI System ID: 588556
Sample Treatment: Heated at 250 °C for 48 hours
Moisture Saturation (relative): "As Received"
%Solids as Received: 78.76%
%Solids as Tested: 76.21%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	1922	48	23	2522	63	30	pCi/g
Pb-214	1968	93	24	2583	122	32	pCi/g
Ra-226	1945	105	23	2552	137	31	pCi/g
Equilibrium Radon Conc. (Rn-222)	275	14	12	360	18	16	pCi/g
Radon Emanation Coefficient	0.141	0.010	---	0.141	0.010	---	---
Ra-226 Bulk	1980	105	14	2514	134	18	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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SOUTHWEST RESEARCH INSTITUTE

ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 5
Customer Sample ID: A1-AC-1
SwRI System ID: 590212
Sample Treatment: Heated at 250 °C for 48 hours
Moisture Saturation (relative): "As Received"
%Solids as Received: 85.05%
%Solids as Tested: 85.14%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	4236	101	25	4975	119	29	pCi/g
Pb-214	4546	214	52	5339	251	61	pCi/g
Ra-226	4391	237	38	5157	278	45	pCi/g
Equilibrium Radon Conc. (Rn-222)	575	29	18	675	34	22	pCi/g
Radon Emanation Coefficient	0.131	0.010	---	0.131	0.010	---	---
Ra-226 Bulk	3890	203	20	4574	239	24	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 5
Customer Sample ID: A1-AC-3
SwRI System ID: 590213
Sample Treatment: Heated at 250 °C for 48 hours
Moisture Saturation (relative): "As Received"
%Solids as Received: 86.33%
%Solids as Tested: 86.14%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	2036	51	18	2364	59	21	pCi/g
Pb-214	2115	100	34	2455	116	39	pCi/g
Ra-226	2076	112	26	2410	130	30	pCi/g
Equilibrium Radon Conc. (Rn-222)	340	17	14	395	20	17	pCi/g
Radon Emanation Coefficient	0.164	0.012	---	0.164	0.012	---	---
Ra-226 Bulk	1555	82	13	1801	95	15	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 5
Customer Sample ID: A2-AC-21
SwRI System ID: 590214
Sample Treatment: Heated at 250 °C for 48 hours
Moisture Saturation (relative): "As Received"
%Solids as Received: 81.35%
%Solids as Tested: 81.36%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	186	6.7	7.5	228	8.2	9.2	pCi/g
Pb-214	208	11	10	256	13	12	pCi/g
Ra-226	197	12.5	8.8	242	15	11	pCi/g
Equilibrium Radon Conc. (Rn-222)	74.1	4.0	6.6	91.1	4.9	8.1	pCi/g
Radon Emanation Coefficient	0.376	0.031	---	0.376	0.031	---	---
Ra-226 Bulk	160	9.2	4.1	196	11.4	5.0	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 5
Customer Sample ID: WL-234CT
SwRI System ID: 591000
Sample Treatment: Heated at 250 °C for 48 hours
Moisture Saturation (relative): "As Received"
%Solids as Received: 73.37%
%Solids as Tested: 74.00%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	2589	63	18	3498	85	25	pCi/g
Pb-214	2689	127	32	3633	171	44	pCi/g
Ra-226	2639	141	25	3566	191	34	pCi/g
Equilibrium Radon Conc. (Rn-222)	239	12	11	324	17	15	pCi/g
Radon Emanation Coefficient	0.0907	0.0067	---	0.0907	0.0067	---	---
Ra-226 Bulk	888	47.1	7.5	1210	64	10	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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SOUTHWEST RESEARCH INSTITUTE
DUPLICATE ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 5
Customer Sample ID: 1D7-84-85 Duplicate
SwRI System ID: 588049
Sample Treatment: Heated at 250 °C for 48 hours
Moisture Saturation (relative): "As Received"
%Solids as Received: 81.06%
%Solids as Tested: 79.68%

	As Tested			Dry Weight Basis				Duplicate
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**	**Evaluation**
Bi-214	2823	68	26	3542	86	32	pCi/g	***3.6***
Pb-214	2830	133	39	3552	167	49	pCi/g	1.7
Ra-226	2826	150	32	3547	188	41	pCi/g	1.6
Equilibrium Radon Conc. (Rn-222)	483 J	24	16	606 J	31	20	pCi/g	***6.9***
Radon Emanation Coefficient	0.171J	0.013	---	0.171J	0.013	---	---	***5.7***
Ra-226 Bulk	2780	145	13	3430	178	16	pCi/g	NA

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample. Sample 1D7-84-85 was not analyzed in duplicate for Ra-226 Bulk analysis; the original analysis results are reported in this table and the duplicate evaluation (or duplicate error ratio, DER) is not applicable.

REM for HVE
04 May 2016

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Thermal Test Condition 6

SOUTHWEST RESEARCH INSTITUTE

ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 6
Customer Sample ID: 1D7-84-85
SwRI System ID: 588049
Sample Treatment: Heated at 250 °C for 48 hours
Moisture Saturation (relative): 10%
%Solids as Received: 81.06%
%Solids as Tested: 90.21%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	3724	90	34	4129	99	37	pCi/g
Pb-214	3980	187	45	4412	208	50	pCi/g
Ra-226	3852	208	39	4270	230	44	pCi/g
Equilibrium Radon Conc. (Rn-222)	515	26	17	571	29	19	pCi/g
Radon Emanation Coefficient	0.134	0.010	---	0.134	0.010	---	---
Ra-226 Bulk	2780	145	13	3430	178	16	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 6
Customer Sample ID: A2-S1
SwRI System ID: 588556
Sample Treatment: Heated at 250 °C for 48 hours
Moisture Saturation (relative): 10%
%Solids as Received: 78.76%
%Solids as Tested: 89.53%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	2785	68	29	3111	76	32	pCi/g
Pb-214	3080	145	39	3440	162	43	pCi/g
Ra-226	2933	160	34	3276	179	38	pCi/g
Equilibrium Radon Conc. (Rn-222)	407 J	21	15	454 J	23	17	pCi/g
Radon Emanation Coefficient	0.139 J	0.010	---	0.139 J	0.010	---	---
Ra-226 Bulk	1980	105	14	2514	134	18	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

REM for HVE
04 May 2016

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ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 6
Customer Sample ID: A1-AC-1
SwRI System ID: 590212
Sample Treatment: Heated at 250 °C for 48 hours
Moisture Saturation (relative): 10%
%Solids as Received: 85.05%
%Solids as Tested: 89.73%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	4798	115	39	5348	128	43	pCi/g
Pb-214	4859	229	53	5415	255	59	pCi/g
Ra-226	4828	256	46	5381	285	51	pCi/g
Equilibrium Radon Conc. (Rn-222)	579	29	18	645	33	20	pCi/g
Radon Emanation Coefficient	0.120	0.0088	---	0.120	0.0088	---	---
Ra-226 Bulk	3890	203	20	4574	239	24	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 6
Customer Sample ID: A1-AC-3
SwRI System ID: 590213
Sample Treatment: Heated at 250 °C for 48 hours
Moisture Saturation (relative): 10%
%Solids as Received: 86.33%
%Solids as Tested: 89.56%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	2154	54	25	2405	60	28	pCi/g
Pb-214	2277	108	36	2542	120	40	pCi/g
Ra-226	2216	120	31	2474	134	34	pCi/g
Equilibrium Radon Conc. (Rn-222)	308	16	13	344	17	15	pCi/g
Radon Emanation Coefficient	0.139	0.010	---	0.139	0.010	---	---
Ra-226 Bulk	1555	82	13	1801	95	15	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 6
Customer Sample ID: A2-AC-21
SwRI System ID: 590214
Sample Treatment: Heated at 250 °C for 48 hours
Moisture Saturation (relative): 10%
%Solids as Received: 81.35%
%Solids as Tested: 89.88%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	188	7.0	8.0	210	7.8	8.9	pCi/g
Pb-214	224	11	11	249	13	13	pCi/g
Ra-226	206	13	10	229	15	11	pCi/g
Equilibrium Radon Conc. (Rn-222)	69.2	3.7	6.3	76.9	4.1	7.0	pCi/g
Radon Emanation Coefficient	0.336	0.028	---	0.336	0.028	---	---
Ra-226 Bulk	160	9.2	4.1	196	11.4	5.0	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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SOUTHWEST RESEARCH INSTITUTE
ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 6
Customer Sample ID: WL-234CT
SwRI System ID: 591000
Sample Treatment: Heated at 250 °C for 48 hours
Moisture Saturation (relative): 10%
%Solids as Received: 73.37%
%Solids as Tested: 89.92%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	3102	76	25	3449	84	28	pCi/g
Pb-214	3267	154	41	3633	171	46	pCi/g
Ra-226	3184	172	33	3541	191	37	pCi/g
Equilibrium Radon Conc. (Rn-222)	285	15	13	317	16	15	pCi/g
Radon Emanation Coefficient	0.0894	0.0066	---	0.0894	0.0066	---	---
Ra-226 Bulk	888	47.1	7.5	1210	64	10	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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SOUTHWEST RESEARCH INSTITUTE
DUPLICATE ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 6
Customer Sample ID: A2-S1 Duplicate
SwRI System ID: 588556
Sample Treatment: Heated at 250 °C for 48 hours
Moisture Saturation (relative): 10%
%Solids as Received: 78.76%
%Solids as Tested: 90.06%

	As Tested			Dry Weight Basis				Duplicate
Parameter	Result	TPU (1s)	MDA	Result	TPU (1s)	MDA	Units	Evaluation
Bi-214	2531	62	25	2810	69	28	pCi/g	2.9
Pb-214	2735	129	39	3037	143	43	pCi/g	1.9
Ra-226	2633	143	32	2923	159	36	pCi/g	1.5
Equilibrium Radon Conc. (Rn-222)	163 J	8.4	9.4	181 J	9.3	10	pCi/g	***11.0***
Radon Emanation Coefficient	0.0619 J	0.0046	---	0.0619 J	0.0046	---	---	***6.8***
Ra-226 Bulk	1980	106	14	2514	134	17	pCi/g	NA

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample. Since the Ra-226 Bulk results are the same for the original and duplicate analyses of sample A2-S1, the duplicate evaluation (or duplicate error ratio, DER) could not be calculated.

REM for HVE
04 May 2016

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Thermal Test Condition 7

SOUTHWEST RESEARCH INSTITUTE

ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 7
Customer Sample ID: 1D7-84-85
SwRI System ID: 588049
Sample Treatment: None ("As Received")
Moisture Saturation (relative): Saturated
%Solids as Received: 81.06%
%Solids as Tested: 70.99%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	2919	71	31	4111	100	43	pCi/g
Pb-214	3112	147	40	4384	206	56	pCi/g
Ra-226	3015	163	35	4248	230	49	pCi/g
Equilibrium Radon Conc. (Rn-222)	405	21	15	570	29	22	pCi/g
Radon Emanation Coefficient	0.134	0.010	---	0.134	0.010	---	---
Ra-226 Bulk	2780	145	13	3430	178	16	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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SOUTHWEST RESEARCH INSTITUTE
ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 7
Customer Sample ID: A2-S1
SwRI System ID: 588556
Sample Treatment: None ("As Received")
Moisture Saturation (relative): Saturated
%Solids as Received: 78.76%
%Solids as Tested: 68.46%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	1782	45	21	2603	66	31	pCi/g
Pb-214	1905	90	32	2782	132	47	pCi/g
Ra-226	1843	101	27	2692	147	39	pCi/g
Equilibrium Radon Conc. (Rn-222)	269	14	13	393	20	19	pCi/g
Radon Emanation Coefficient	0.146	0.011	---	0.146	0.011	---	---
Ra-226 Bulk	1980	105	14	2514	134	18	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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SOUTHWEST RESEARCH INSTITUTE
ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 7
Customer Sample ID: A1-AC-1
SwRI System ID: 590212
Sample Treatment: None ("As Received")
Moisture Saturation (relative): Saturated
%Solids as Received: 85.05%
%Solids as Tested: 73.99%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	3570	86	26	4825	116	36	pCi/g
Pb-214	3723	175	38	5032	237	51	pCi/g
Ra-226	3647	195	32	4928	264	43	pCi/g
Equilibrium Radon Conc. (Rn-222)	432	22	16	583	30	21	pCi/g
Radon Emanation Coefficient	0.118	0.0087	---	0.118	0.0087	---	---
Ra-226 Bulk	3890	203	20	4574	239	24	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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SOUTHWEST RESEARCH INSTITUTE
ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 7
Customer Sample ID: A1-AC-3
SwRI System ID: 590213
Sample Treatment: None ("As Received")
Moisture Saturation (relative): Saturated
%Solids as Received: 86.33%
%Solids as Tested: 70.42%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	1682	43	19	2388	61	28	pCi/g
Pb-214	1734	82	27	2463	117	38	pCi/g
Ra-226	1708	93	23	2425	132	33	pCi/g
Equilibrium Radon Conc. (Rn-222)	276	14	13	391	20	18	pCi/g
Radon Emanation Coefficient	0.161	0.012	---	0.161	0.012	---	---
Ra-226 Bulk	1555	82	13	1801	95	15	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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SOUTHWEST RESEARCH INSTITUTE
ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 7
Customer Sample ID: A2-AC-21
SwRI System ID: 590214
Sample Treatment: None ("As Received")
Moisture Saturation (relative): Saturated
%Solids as Received: 81.35%
%Solids as Tested: 67.22%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	149	6.0	7.0	222	8.9	10	pCi/g
Pb-214	169	8.8	12	251	13	18	pCi/g
Ra-226	159	10.6	9.5	237	16	14	pCi/g
Equilibrium Radon Conc. (Rn-222)	56.9	3.1	6.2	84.6	4.7	9.2	pCi/g
Radon Emanation Coefficient	0.358	0.031	---	0.358	0.031	---	---
Ra-226 Bulk	160	9.2	4.1	196	11.4	5.0	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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SOUTHWEST RESEARCH INSTITUTE
ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 7
Customer Sample ID: WL-234CT
SwRI System ID: 591000
Sample Treatment: None ("As Received")
Moisture Saturation (relative): Saturated
%Solids as Received: 73.37%
%Solids as Tested: 59.13%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	1661	43	18	2810	72	30	pCi/g
Pb-214	1703	81	25	2880	136	42	pCi/g
Ra-226	1682	91	21	2845	154	36	pCi/g
Equilibrium Radon Conc. (Rn-222)	211	11	12	357	18	20	pCi/g
Radon Emanation Coefficient	0.126	0.0094	---	0.126	0.0094	---	---
Ra-226 Bulk	888	47.1	7.5	1210	64	10	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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SOUTHWEST RESEARCH INSTITUTE

DUPLICATE ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 7
Customer Sample ID: A2-S1 Duplicate
SwRI System ID: 588556
Sample Treatment: None ("As Received")
Moisture Saturation (relative): Saturated
%Solids as Received: 78.76%
%Solids as Tested: 65.67%

	As Tested			Dry Weight Basis				Duplicate
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**	**Evaluation**
Bi-214	1746	45	16	2659	68	24	pCi/g	0.6
Pb-214	1859	88	31	2831	134	48	pCi/g	0.3
Ra-226	1803	99	24	2745	150	36	pCi/g	0.2
Equilibrium Radon Conc. (Rn-222)	255	13	13	388	20	20	pCi/g	0.2
Radon Emanation Coefficient	0.141	0.011	---	0.141	0.011	---	---	0.3
Ra-226 Bulk	1980	106	14	2514	134	17	pCi/g	NA

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample. Since the Ra-226 Bulk results are the same for the original and duplicate analyses of sample A2-S1, the duplicate evaluation (or duplicate error ratio, DER) could not be calculated.

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Thermal Test Condition 8

SOUTHWEST RESEARCH INSTITUTE

ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 8
Customer Sample ID: 1D7-84-85
SwRI System ID: 588049
Sample Treatment: Heated at 60 ^{o}C until at or below desired saturation
Moisture Saturation (relative): Approximately 2% (ranges from 0.7-2%)
%Solids as Received: 81.06%
%Solids as Tested: 98.18%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	4009	96	25	4084	98	26	pCi/g
Pb-214	4294	202	43	4374	206	44	pCi/g
Ra-226	4152	224	34	4229	228	35	pCi/g
Equilibrium Radon Conc. (Rn-222)	296	15	13	301	15	14	pCi/g
Radon Emanation Coefficient	0.0712	0.0053	---	0.0712	0.0053	---	---
Ra-226 Bulk	2780	145	13	3430	178	16	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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SOUTHWEST RESEARCH INSTITUTE

ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 8
Customer Sample ID: A2-S1
SwRI System ID: 588556
Sample Treatment: Heated at 60 ^{o}C until at or below desired saturation
Moisture Saturation (relative): Approximately 2% (ranges from 0.7-2%)
%Solids as Received: 78.76%
%Solids as Tested: 99.32%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	2718	66	23	2736	67	23	pCi/g
Pb-214	2932	138	41	2952	139	41	pCi/g
Ra-226	2825	153	32	2844	154	32	pCi/g
Equilibrium Radon Conc. (Rn-222)	177	9.1	9.5	179	9.2	9.5	pCi/g
Radon Emanation Coefficient	0.0628	0.0047	---	0.0628	0.0047	---	---
Ra-226 Bulk	1980	105	14	2514	134	18	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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SOUTHWEST RESEARCH INSTITUTE

ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 8
Customer Sample ID: A1-AC-1
SwRI System ID: 590212
Sample Treatment: Heated at 60 ^{o}C until at or below desired saturation
Moisture Saturation (relative): Approximately 2% (ranges from 0.7-2%)
%Solids as Received: 85.05%
%Solids as Tested: 97.80%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	4932	118	37	5042	120	38	pCi/g
Pb-214	5206	245	52	5323	250	53	pCi/g
Ra-226	5069	272	44	5183	278	45	pCi/g
Equilibrium Radon Conc. (Rn-222)	363	18	14	371	19	14	pCi/g
Radon Emanation Coefficient	0.0716	0.0053	---	0.0716	0.0053	---	---
Ra-226 Bulk	3890	203	20	4574	239	24	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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SOUTHWEST RESEARCH INSTITUTE
ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 8
Customer Sample ID: A1-AC-3
SwRI System ID: 590213
Sample Treatment: Heated at 60 ^{o}C until at or below desired saturation
Moisture Saturation (relative): Approximately 2% (ranges from 0.7-2%)
%Solids as Received: 86.33%
%Solids as Tested: 99.34%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	2376	59	23	2392	59	24	pCi/g
Pb-214	2512	119	35	2528	119	36	pCi/g
Ra-226	2444	132	29	2460	133	30	pCi/g
Equilibrium Radon Conc. (Rn-222)	160	8.2	9.3	161	8.3	9.4	pCi/g
Radon Emanation Coefficient	0.0654	0.0049	---	0.0654	0.0049	---	---
Ra-226 Bulk	1555	82	13	1801	95	15	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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SOUTHWEST RESEARCH INSTITUTE

ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 8
Customer Sample ID: A2-AC-21
SwRI System ID: 590214
Sample Treatment: Heated at 60 ^{o}C until at or below desired saturation
Moisture Saturation (relative): Approximately 2% (ranges from 0.7-2%)
%Solids as Received: 81.35%
%Solids as Tested: 98.85%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	406	13	10	410	13	10	pCi/g
Pb-214	466	23	18	472	23	18	pCi/g
Ra-226	436	26	14	441	26	14	pCi/g
Equilibrium Radon Conc. (Rn-222)	65.0	3.5	6.0	65.7	3.5	6.1	pCi/g
Radon Emanation Coefficient	0.149	0.012	---	0.149	0.012	---	---
Ra-226 Bulk	160	9.2	4.1	196	11.4	5.0	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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SOUTHWEST RESEARCH INSTITUTE

ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 8
Customer Sample ID: WL-234CT
SwRI System ID: 591000
Sample Treatment: Heated at 60 ^{o}C until at or below desired saturation
Moisture Saturation (relative): Approximately 2% (ranges from 0.7-2%)
%Solids as Received: 73.37%
%Solids as Tested: 98.01%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	2067	52	22	2109	53	22	pCi/g
Pb-214	2098	99	37	2140	101	37	pCi/g
Ra-226	2082	112	29	2125	114	30	pCi/g
Equilibrium Radon Conc. (Rn-222)	48.9	2.7	5.1	49.9	2.7	5.2	pCi/g
Radon Emanation Coefficient	0.0235	0.0018	---	0.0235	0.0018	---	---
Ra-226 Bulk	888	47.1	7.5	1210	64	10	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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SOUTHWEST RESEARCH INSTITUTE

DUPLCIATE ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 8
Customer Sample ID: 1D7-84-85 Duplicate
SwRI System ID: 588049
Sample Treatment: Heated at 60 ^{o}C until at or below desired saturation
Moisture Saturation (relative): Approximately 2% (ranges from 0.7-2%)
%Solids as Received: 81.06%
%Solids as Tested: 98.80%

	As Tested			Dry Weight Basis				Duplicate
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**	**Evaluation**
Bi-214	3717	90	23	3762	91	23	pCi/g	2.4
Pb-214	3949	186	49	3997	188	49	pCi/g	1.3
Ra-226	3833	206	36	3880	209	36	pCi/g	1.1
Equilibrium Radon Conc. (Rn-222)	239	12	11	242	12	11	pCi/g	3.0
Radon Emanation Coefficient	0.0623	0.0046	---	0.0623	0.0046	---	---	1.3
Ra-226 Bulk	2780	145	13	3430	178	16	pCi/g	NA

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample. Sample 1D7-84-85 was not analyzed in duplicate for Ra-226 Bulk analysis; the original analysis results are reported in this table and the duplicate evaluation (or duplicate error ratio, DER) is not applicable.

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Thermal Test Condition 9

SOUTHWEST RESEARCH INSTITUTE

ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 9
Customer Sample ID: 1D7-84-85
SwRI System ID: 588049
Sample Treatment: Heated at 60 °C until at or below desired saturation
Moisture Saturation (relative): Approximately 10% (ranges from 7-13%)
%Solids as Received: 81.06%
%Solids as Tested: 91.81%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	3514	85	25	3827	92	27	pCi/g
Pb-214	3648	172	40	3973	187	44	pCi/g
Ra-226	3581	192	33	3900	209	36	pCi/g
Equilibrium Radon Conc. (Rn-222)	194	9.9	9.8	211	11	11	pCi/g
Radon Emanation Coefficient	0.0541	0.0040	---	0.0541	0.0040	---	---
Ra-226 Bulk	2780	145	13	3430	178	16	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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SOUTHWEST RESEARCH INSTITUTE
ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 9
Customer Sample ID: A2-S1
SwRI System ID: 588556
Sample Treatment: Heated at 60 ^{o}C until at or below desired saturation
Moisture Saturation (relative): Approximately 10% (ranges from 7-13%)
%Solids as Received: 78.76%
%Solids as Tested: 91.47%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	2460	60	21	2689	66	22	pCi/g
Pb-214	2597	122	32	2839	134	36	pCi/g
Ra-226	2528	137	27	2764	149	29	pCi/g
Equilibrium Radon Conc. (Rn-222)	306	16	12	334	17	13	pCi/g
Radon Emanation Coefficient	0.121	0.0090	---	0.121	0.0090	---	---
Ra-226 Bulk	1980	105	14	2514	134	18	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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SOUTHWEST RESEARCH INSTITUTE
ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 9
Customer Sample ID: A1-AC-1
SwRI System ID: 590212
Sample Treatment: Heated at 60 ^{o}C until at or below desired saturation
Moisture Saturation (relative): Approximately 10% (ranges from 7-13%)
%Solids as Received: 85.05%
%Solids as Tested: 93.30%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	4547	109	29	4874	117	31	pCi/g
Pb-214	4856	228	41	5205	245	44	pCi/g
Ra-226	4702	253	35	5039	271	38	pCi/g
Equilibrium Radon Conc. (Rn-222)	465	23	15	498	25	16	pCi/g
Radon Emanation Coefficient	0.0989	0.0073	---	0.0989	0.0073	---	---
Ra-226 Bulk	3890	203	20	4574	239	24	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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SOUTHWEST RESEARCH INSTITUTE
ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 9
Customer Sample ID: A1-AC-3
SwRI System ID: 590213
Sample Treatment: Heated at 60 ^{o}C until at or below desired saturation
Moisture Saturation (relative): Approximately 10% (ranges from 7-13%)
%Solids as Received: 86.33%
%Solids as Tested: 93.38%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	1983	50	25	2123	53	27	pCi/g
Pb-214	2044	97	35	2189	104	38	pCi/g
Ra-226	2013	109	30	2156	116	32	pCi/g
Equilibrium Radon Conc. (Rn-222)	287	15	12	308	16	13	pCi/g
Radon Emanation Coefficient	0.143	0.011	---	0.143	0.011	---	---
Ra-226 Bulk	1555	82	13	1801	95	15	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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SOUTHWEST RESEARCH INSTITUTE

ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 9
Customer Sample ID: A2-AC-21
SwRI System ID: 590214
Sample Treatment: Heated at 60 ^{o}C until at or below desired saturation
Moisture Saturation (relative): Approximately 10% (ranges from 7-13%)
%Solids as Received: 81.35%
%Solids as Tested: 89.34%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	204	7.2	8.0	228	8.1	8.9	pCi/g
Pb-214	220	11	11	246	12	12	pCi/g
Ra-226	212	13.3	9.3	237	15	10	pCi/g
Equilibrium Radon Conc. (Rn-222)	82.8	4.4	6.6	92.7	4.9	7.4	pCi/g
Radon Emanation Coefficient	0.391	0.032	---	0.391	0.032	---	---
Ra-226 Bulk	160	9.2	4.1	196	11.4	5.0	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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SOUTHWEST RESEARCH INSTITUTE
ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 9
Customer Sample ID: WL-234CT
SwRI System ID: 591000
Sample Treatment: Heated at 60 ^{o}C until at or below desired saturation
Moisture Saturation (relative): Approximately 10% (ranges from 7-13%)
%Solids as Received: 73.37%
%Solids as Tested: 87.27%

	As Tested			Dry Weight Basis			
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**
Bi-214	2383	59	18	2730	67	20	pCi/g
Pb-214	2509	118	33	2875	136	38	pCi/g
Ra-226	2446	132	25	2803	151	29	pCi/g
Equilibrium Radon Conc. (Rn-222)	262	13	12	300	15	14	pCi/g
Radon Emanation Coefficient	0.107	0.0079	---	0.107	0.0079	---	---
Ra-226 Bulk	888	47.1	7.5	1210	64	10	pCi/g

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample.

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SOUTHWEST RESEARCH INSTITUTE

DUPLICATE ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Thermal Test Condition: 9
Customer Sample ID: A2-S1 Duplicate
SwRI System ID: 588556
Sample Treatment: Heated at 60 ^{o}C until at or below desired saturation
Moisture Saturation (relative): Approximately 10% (ranges from 7-13%)
%Solids as Received: 78.76%
%Solids as Tested: 91.22%

	As Tested			Dry Weight Basis				Duplicate
Parameter	**Result**	**TPU (1s)**	**MDA**	**Result**	**TPU (1s)**	**MDA**	**Units**	**Evaluation**
Bi-214	2334	58	21	2559	63	23	pCi/g	1.4
Pb-214	2482	117	35	2721	128	39	pCi/g	0.6
Ra-226	2408	130	28	2640	143	31	pCi/g	0.6
Equilibrium Radon Conc. (Rn-222)	334	17	13	367	19	14	pCi/g	1.3
Radon Emanation Coefficient	0.139	0.010	---	0.139	0.010	---	---	1.3
Ra-226 Bulk	1980	106	14	2514	134	17	pCi/g	NA

Note: All Ra-226 results were calculated as the averages of the associated Bi-214 and Pb-214 results. Ra-226 Bulk was determined on the "as received" sample. Since the Ra-226 Bulk results are the same for the original and duplicate analyses of sample A2-S1, the duplicate evaluation (or duplicate error ratio, DER) could not be calculated.

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Radon Emanation
QC Results

SOUTHWEST RESEARCH INSTITUTE

PREPARATION BLANK DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

	Equilibrium Radon Concentration (Rn-222)			
Sample ID	**Analysis Date**	**Result pCi/g**	**TPU (1s) pCi/g**	**MDA pCi/g**
PB - Preparation Blank	3/15/2016	-0.03 U	0.05	0.32
PB - Preparation Blank	3/17/2016	0.05 U	0.05	0.29

Note: One preparation blank (or bottle blank) was prepared and analyzed twice.
U - less than 2 times TPU, statistically not detected.

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SOUTHWEST RESEARCH INSTITUTE

LABORATORY CONTROL DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

	Equilibrium Radon Concentration (Rn-222)			
Sample ID	**Analysis Date**	**Result pCi/g**	**TPU (1s) pCi/g**	**MDA pCi/g**
LCS - Capsule	3/15/2016	3047	157	170
True Value	---	3300	---	---
Recovery	---	92.3%	---	---
LCS #1 (Daily)	3/14/2016	87.7	0.4	2.0
True Value	---	80.4	---	---
Recovery	---	109%	---	---
LCS #2 (Daily)	3/15/2016	87.0	0.4	2.0
True Value	---	80.4	---	---
Recovery	---	108%	---	---
LCS #3 (Daily)	3/16/2016	84.0	0.5	2.1
True Value	---	80.4	---	---
Recovery	---	104%	---	---
LCS #4 (Daily)	3/17/2016	84.3	0.5	2.4
True Value	---	80.4	---	---
Recovery	---	105%	---	---
LCS #5 (Daily)	3/18/2016	82.9	0.5	2.6
True Value	---	80.4	---	---
Recovery	---	103%	---	---
LCS #6 (Daily)	3/21/2016	87.0	0.4	2.0
True Value	---	80.4	---	---
Recovery	---	108%	---	---

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Radon Emanation
Summary of Duplicates and Replicates

SOUTHWEST RESEARCH INSTITUTE

DUPLICATE/REPLICATE ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

	Equilibrium Radon Concentration (Rn-222) "As Tested"					
Customer Sample ID and SwRI System ID	**Replicate**	**Thermal Test Condition**	**Analysis Date**	**Result pCi/g**	**TPU (1s) pCi/g**	**MDA pCi/g**
1D7-84-85	Initial	1	3/14/2016	444	22	15
588049	Dup	1	3/14/2016	421	21	14
	RPD	1	---	5.3%	---	---
A2-S1	Initial	1	3/14/2016	147	7.5	8.2
588556	Rep1	1	3/16/2016	149	7.7	8.2
	RPD	1	---	1.4%	---	---
1D7-84-85	Initial	2	3/14/2016	194	9.9	9.3
588049	Rep1	2	3/14/2016	180	9.2	9.1
	RPD	2	---	7.5%	---	---
	Rep2	2	3/17/2016	176	9.0	8.5
	RPD	2	---	9.7%	---	---
A2-S1	Initial	2	3/14/2016	160	8.2	8.5
588556	Dup	2	3/14/2016	160	8.2	8.5
	RPD	2	---	0.0%	---	---
	Rep1	2	3/17/2016	152	7.8	7.8
	RPD	2	---	5.1%	---	---
	Dup Rep1	2	3/17/2016	157	8.0	7.9
	RPD	2	---	1.9%	---	---
A1-AC-1	Initial	2	3/14/2016	215	11	10
590212	Rep1	2	3/17/2016	207	10.6	9.4
	RPD	2	---	3.8%	---	---
A1-AC-3	Initial	2	3/14/2016	132	6.8	7.8
590213	Rep1	2	3/17/2016	137	7.0	7.6
	RPD	2	---	3.7%	---	---
A2-AC-21	Initial	2	3/14/2016	57.9	3.1	5.3
590214	Rep1	2	3/17/2016	52.2	2.8	4.8
	RPD	2	---	10.4%	---	---
WL-234CT	Initial	2	3/14/2016	121	6.3	7.6
591000	Rep1	2	3/17/2016	117	6.1	7.3
	RPD	2	---	3.4%	---	---

Note: All RPDs are calculated in reference to the Initial analysis. The "Initial" results are reported as final results on the Analysis Data Sheets. "Rep" is a rerun of the initial sample. "Dup" is a second aliquot/chamber of the initial sample. "Dup Rep" is a rerun of the duplicate sample.

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SOUTHWEST RESEARCH INSTITUTE

DUPLICATE/REPLICATE ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

		Equilibrium Radon Concentration (Rn-222) "As Tested"				
Customer Sample ID and SwRI System ID	**Replicate**	**Thermal Test Condition**	**Analysis Date**	**Result pCi/g**	**TPU (1s) pCi/g**	**MDA pCi/g**
1D7-84-85	Initial	3	3/16/2016	178	9.1	8.8
588049	Dup	3	3/16/2016	191	9.8	9.1
	RPD	3	---	7.0%	---	---
A2-S1	Initial	4	3/15/2016	132	6.9	9.3
588556	Dup	4	3/15/2016	157	8.1	10
	RPD	4	---	17.3%	---	---
A2-AC-21	Initial	4	3/15/2016	38.9	2.2	5.2
590214	Rep1	4	3/15/2016	43.1	2.3	3.8
	RPD	4	---	10.2%	---	---
WL-234CT	Initial	4	3/15/2016	87.3	4.7	8.1
591000	Rep1	4	3/15/2016	88.7	4.7	8.0
	RPD	4	---	1.6%	---	---
1D7-84-85	Initial	5	3/16/2016	290	15	12
588049	Dup	5	3/16/2016	483	24	16
	RPD	5	---	***49.9%***	---	---
	Rep1	5	3/16/2016	274	14	12
	RPD	5	---	5.7%	---	---
	Dup Rep1	5	3/16/2016	453	23	15
	RPD	5	---	***43.9%***	---	---
WL-234CT	Initial	5	3/16/2016	239	12	11
591000	Rep1	5	3/16/2016	273	14	12
	RPD	5	---	13.3%	---	---
A2-S1	Initial	6	3/17/2016	407	21	15
588556	Dup	6	3/17/2016	163	8.4	9.4
	RPD	6	---	***85.6%***	---	---
	Rep1	6	3/17/2016	425	21	15
	RPD	6	---	4.3%	---	---
	Dup Rep1	6	3/17/2016	160	8.3	9.4
	RPD	6	---	***87.1%***	---	---
WL-234CT	Initial	6	3/17/2016	285	15	13
591000	Rep1	6	3/17/2016	327	17	14
	RPD	6	---	13.7%	---	---

Note: All RPDs are calculated in reference to the Initial analysis. The "Initial" results are reported as final results on the Analysis Data Sheets. "Rep" is a rerun of the initial sample. "Dup" is a second aliquot/chamber of the initial sample. "Dup Rep" is a rerun of the duplicate sample.

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SOUTHWEST RESEARCH INSTITUTE

DUPLICATE/REPLICATE ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

	Equilibrium Radon Concentration (Rn-222) "As Tested"					
Customer Sample ID and SwRI System ID	**Replicate**	**Thermal Test Condition**	**Analysis Date**	**Result pCi/g**	**TPU (1s) pCi/g**	**MDA pCi/g**
1D7-84-85	Initial	7	3/15/2016	405	21	15
588049	Rep1	7	3/18/2016	410	21	14
	RPD	7	---	1.2%	---	---
A2-S1	Initial	7	3/15/2016	269	14	13
588556	Dup	7	3/15/2016	255	13	13
	RPD	7	---	5.3%	---	---
	Rep1	7	3/18/2016	265	13	11
	RPD	7	---	1.5%	---	---
	Dup Rep1	7	3/18/2016	248	13	11
	RPD	7	---	8.1%	---	---
A1-AC-1	Initial	7	3/15/2016	432	22	16
590212	Rep1	7	3/18/2016	452	23	14
	RPD	7	---	4.5%	---	---
A1-AC-3	Initial	7	3/15/2016	276	14	13
590213	Rep1	7	3/18/2016	279	14	12
	RPD	7	---	1.1%	---	---
A2-AC-21	Initial	7	3/15/2016	56.9	3.1	6.2
590214	Rep1	7	3/18/2016	56.7	3.1	5.4
	RPD	7	---	0.4%	---	---
WL-234CT	Initial	7	3/15/2016	211	11	12
591000	Rep1	7	3/18/2016	208	11	10
	RPD	7	---	1.4%	---	---
1D7-84-85	Initial	8	3/21/2016	296	15	13
588049	Dup	8	3/21/2016	239	12	11
	RPD	8	---	21.3%	---	---
1D7-84-85	Initial	9	3/21/2016	194	9.9	9.8
588049	Rep1	9	3/21/2016	210	11	10
	RPD	9	---	7.9%	---	---
A2-S1	Initial	9	3/21/2016	306	16	12
588556	Dup	9	3/21/2016	334	17	13
	RPD	9	---	8.8%	---	---

Note: All RPDs are calculated in reference to the Initial analysis. The "Initial" results are reported as final results on the Analysis Data Sheets. "Rep" is a rerun of the initial sample. "Dup" is a second aliquot/chamber of the initial sample. "Dup Rep" is a rerun of the duplicate sample.

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Appendix G
Gamma Spectrometry Results for Bulk Samples

SOUTHWEST RESEARCH INSTITUTE

GAMMA SPECTROMETRY ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Sample ID 1D7-84-85	Lab System ID	Analyte	Results pCi/g dry wt. basis	Q	TPU (1s) (pCi/g)	MDA (pCi/g)	Date Analyzed
Uranium 238 Decay Series	588049R2	^{210}Pb	2.20E+02		3.51E+01	1.23E+02	3/14/2016
	588049R2	^{214}Bi	3.48E+03		8.04E+01	1.20E+01	3/14/2016
	588049R2	^{214}Pb	3.38E+03		1.59E+02	2.06E+01	3/14/2016
	588049R2	^{234}Pa *	-5.94E+00	U	7.21E+00	3.68E+01	3/14/2016
	588049R2	^{234}Th *	-4.15E+02	U	4.70E+01	9.09E+01	3/14/2016
Uranium 235 Decay Series	588049R2	^{211}Bi	2.69E+03		6.97E+02	5.71E+01	3/14/2016
	588049R2	^{211}Pb	5.97E+02		4.76E+01	1.41E+02	3/14/2016
	588049R2	^{219}Rn	7.50E+02		4.68E+01	4.84E+01	3/14/2016
	588049R2	^{223}Ra	4.82E+02		2.05E+01	3.80E+01	3/14/2016
	588049R2	^{227}Th	2.39E+02		1.90E+01	4.70E+01	3/14/2016
	588049R2	^{231}Pa	6.85E+02		4.87E+01	2.13E+02	3/14/2016
	588049R2	^{231}Th *	4.20E+02	U	3.22E+01	6.65E+01	3/14/2016
Thorium 232 Decay Series	588049R2	^{208}Tl *	-2.12E+00	U	5.89E-01	8.32E+00	3/14/2016
	588049R2	^{212}Bi *	-8.26E+01	U	1.71E+01	9.72E+01	3/14/2016
	588049R2	^{212}Pb *	6.94E+01	U	5.82E+00	2.14E+01	3/14/2016
	588049R2	^{224}Ra *	3.91E+03	U	2.40E+02	1.92E+02	3/14/2016
	588049R2	^{228}Ac *	1.84E+01	U	7.23E+00	3.25E+01	3/14/2016

Q - Data Qualifier. MDA - Minimum Detectable Activity. TPU - Total Propagated Uncertainty.

U - Less than MDA, Less than 2xTPU, or not identified.

* - Isotope considered not identified. Activity and TPU are taken from the isotopic Key-line.

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SOUTHWEST RESEARCH INSTITUTE

GAMMA SPECTROMETRY ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Sample ID A2-S1	Lab System ID	Analyte	Results pCi/g dry wt. basis	Q	TPU (1s) (pCi/g)	MDA (pCi/g)	Date Analyzed
Uranium 238 Decay Series	588556R2	^{210}Pb	3.14E+02		4.02E+01	1.07E+02	3/14/2016
	588556R2	^{214}Bi	2.45E+03		5.75E+01	1.56E+01	3/14/2016
	588556R2	^{214}Pb	2.58E+03		1.21E+02	2.04E+01	3/14/2016
	588556R2	^{234}Pa *	-1.72E+01	U	7.73E+00	3.83E+01	3/14/2016
	588556R2	^{234}Th *	-5.66E+02	U	6.33E+01	1.05E+02	3/14/2016
Uranium 235 Decay Series	588556R2	^{211}Bi	2.67E+03		5.25E+02	5.66E+01	3/14/2016
	588556R2	^{211}Pb	5.61E+02		3.46E+01	1.44E+02	3/14/2016
	588556R2	^{219}Rn	6.53E+02		3.24E+01	4.77E+01	3/14/2016
	588556R2	^{223}Ra	6.38E+02		2.93E+01	3.76E+01	3/14/2016
	588556R2	^{227}Th	5.62E+02		3.31E+01	4.15E+01	3/14/2016
	588556R2	^{231}Pa	6.86E+02		4.92E+01	2.13E+02	3/14/2016
	588556R2	^{231}Th *	4.99E+02	U	3.91E+01	8.04E+01	3/14/2016
Thorium 232 Decay Series	588556R2	^{208}Tl *	-1.68E+00	U	1.15E+00	8.34E+00	3/14/2016
	588556R2	^{212}Bi *	-3.47E+01	U	1.70E+01	9.95E+01	3/14/2016
	588556R2	^{212}Pb *	7.62E+01	U	6.24E+00	2.26E+01	3/14/2016
	588556R2	^{224}Ra *	2.85E+03	U	1.79E+02	2.00E+02	3/14/2016
	588556R2	^{228}Ac *	2.00E+01	U	7.32E+00	3.31E+01	3/14/2016

Q - Data Qualifier. MDA - Minimum Detectable Activity. TPU - Total Propagated Uncertainty.

U - Less than MDA, Less than 2xTPU, or not identified.

* - Isotope considered not identified. Activity and TPU are taken from the isotopic Key-line.

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SOUTHWEST RESEARCH INSTITUTE

DUPLICATE SUMMARY

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Sample ID A2-S1 Duplicate	Lab System ID	Analyte	Results pCi/g dry wt. basis	Q	TPU (1s) (pCi/g)	MDA (pCi/g)	Duplicate Evaluation DER	Date Analyzed
Uranium 238 Decay Series	588556DR2	^{210}Pb	2.28E+02		3.88E+01	1.42E+02	1.5	3/14/2016
	588556DR2	^{214}Bi	2.45E+03		5.76E+01	1.16E+01	NA	3/14/2016
	588556DR2	^{214}Pb	2.58E+03		1.21E+02	2.27E+01	NA	3/14/2016
	588556DR2	^{234}Pa *	3.26E+00	U	7.51E+00	3.86E+01	---	3/14/2016
	588556DR2	^{234}Th *	-7.56E+02	U	8.45E+01	1.05E+02	---	3/14/2016
Uranium 235 Decay Series	588556DR2	^{211}Bi	1.86E+03		5.31E+02	6.30E+01	1.1	3/14/2016
	588556DR2	^{211}Pb	5.56E+02		3.47E+01	1.44E+02	0.1	3/14/2016
	588556DR2	^{219}Rn	6.59E+02		3.27E+01	4.82E+01	0.1	3/14/2016
	588556DR2	^{223}Ra	4.94E+02		2.28E+01	3.78E+01	***3.9***	3/14/2016
	588556DR2	^{227}Th	5.72E+02		3.24E+01	5.19E+01	0.2	3/14/2016
	588556DR2	^{231}Pa	5.17E+02		4.28E+01	2.17E+02	2.6	3/14/2016
	588556DR2	^{231}Th *	5.31E+02	U	4.11E+01	8.02E+01	---	3/14/2016
Thorium 232 Decay Series	588556DR2	^{208}Tl *	-7.07E-01	U	4.95E-01	8.54E+00	---	3/14/2016
	588556DR2	^{212}Bi *	-7.59E+01	U	1.74E+01	9.92E+01	---	3/14/2016
	588556DR2	^{212}Pb *	-8.51E+01	U	5.26E+00	2.26E+01	---	3/14/2016
	588556DR2	^{224}Ra *	2.93E+03	U	1.83E+02	2.00E+02	---	3/14/2016
	588556DR2	^{228}Ac *	1.29E+01	U	7.31E+00	3.32E+01	---	3/14/2016

Q - Data Qualifier. MDA - Minimum Detectable Activity. TPU - Total Propagated Uncertainty.

U - Less than MDA, Less than 2xTPU, or not identified.

* - Isotope considered not identified. Activity and TPU are taken from the isotopic Key-line.

Note: For Bi214 and Pb214, DER is reported as NA due to the original and duplicate results being the same, and DER could not be calculated.

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SOUTHWEST RESEARCH INSTITUTE

GAMMA SPECTROMETRY ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Sample ID A1-AC-1	Lab System ID	Analyte	Results pCi/g dry wt. basis	Q	TPU (1s) (pCi/g)	MDA (pCi/g)	Date Analyzed
Uranium 238 Decay Series	590212R2	^{210}Pb	2.19E+02		4.07E+01	1.56E+02	3/14/2016
	590212R2	^{214}Bi	4.59E+03		1.06E+02	1.93E+01	3/14/2016
	590212R2	^{214}Pb	4.56E+03		2.14E+02	2.88E+01	3/14/2016
	590212R2	^{234}Pa *	1.96E+00	U	8.92E+00	4.58E+01	3/14/2016
	590212R2	^{234}Th *	-5.92E+02	U	6.64E+01	1.15E+02	3/14/2016
Uranium 235 Decay Series	590212R2	^{211}Bi	1.20E+04		8.98E+02	7.99E+01	3/14/2016
	590212R2	^{211}Pb	8.52E+02		4.93E+01	1.80E+02	3/14/2016
	590212R2	^{219}Rn	1.13E+03		5.50E+01	5.94E+01	3/14/2016
	590212R2	^{223}Ra	5.58E+02		2.73E+01	4.68E+01	3/14/2016
	590212R2	^{227}Th	6.35E+01		8.47E+00	4.76E+01	3/14/2016
	590212R2	^{231}Pa	9.42E+02		4.19E+01	2.63E+02	3/14/2016
	590212R2	^{231}Th	3.84E+02		2.11E+01	8.51E+01	3/14/2016
Thorium 232 Decay Series	590212R2	^{208}Tl *	-7.73E-01	U	6.22E-01	1.06E+01	3/14/2016
	590212R2	^{212}Bi *	-3.54E+01	U	1.75E+01	1.23E+02	3/14/2016
	590212R2	^{212}Pb *	1.11E+02	U	8.44E+00	2.74E+01	3/14/2016
	590212R2	^{224}Ra	4.31E+03		3.35E+02	2.43E+02	3/14/2016
	590212R2	^{228}Ac *	2.47E+01	U	9.20E+00	4.13E+01	3/14/2016

Q - Data Qualifier. MDA - Minimum Detectable Activity. TPU - Total Propagated Uncertainty.

U - Less than MDA, Less than 2xTPU, or not identified.

* - Isotope considered not identified. Activity and TPU are taken from the isotopic Key-line.

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SOUTHWEST RESEARCH INSTITUTE

GAMMA SPECTROMETRY ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Sample ID A1-AC-3	Lab System ID	Analyte	Results pCi/g dry wt. basis	Q	TPU (1s) (pCi/g)	MDA (pCi/g)	Date Analyzed
Uranium 238 Decay Series	590213R2	^{210}Pb	2.03E+02		3.24E+01	1.13E+02	3/14/2016
	590213R2	^{214}Bi	1.81E+03		4.26E+01	1.19E+01	3/14/2016
	590213R2	^{214}Pb	1.80E+03		8.44E+01	1.83E+01	3/14/2016
	590213R2	^{234}Pa *	-5.57E-01	U	6.04E+00	3.10E+01	3/14/2016
	590213R2	^{234}Th *	-4.05E+02	U	4.58E+01	8.36E+01	3/14/2016
Uranium 235 Decay Series	590213R2	^{211}Bi	1.43E+03		3.89E+02	5.08E+01	3/14/2016
	590213R2	^{211}Pb	4.05E+02		2.50E+01	1.15E+02	3/14/2016
	590213R2	^{219}Rn	4.69E+02		2.35E+01	4.01E+01	3/14/2016
	590213R2	^{223}Ra	3.13E+02		1.46E+01	2.99E+01	3/14/2016
	590213R2	^{227}Th	1.31E+02		1.18E+01	4.16E+01	3/14/2016
	590213R2	^{231}Pa	3.94E+02		3.12E+01	1.65E+02	3/14/2016
	590213R2	^{231}Th	2.89E+02		1.59E+01	6.37E+01	3/14/2016
Thorium 232 Decay Series	590213R2	^{208}Tl *	8.84E+00	U	1.44E+00	6.79E+00	3/14/2016
	590213R2	^{212}Bi *	-7.83E+01	U	1.78E+01	8.03E+01	3/14/2016
	590213R2	^{212}Pb *	4.76E+01	U	4.43E+00	1.79E+01	3/14/2016
	590213R2	^{224}Ra *	2.21E+03	U	1.39E+02	1.58E+02	3/14/2016
	590213R2	^{228}Ac *	1.58E+01	U	5.89E+00	2.67E+01	3/14/2016

Q - Data Qualifier. MDA - Minimum Detectable Activity. TPU - Total Propagated Uncertainty.

U - Less than MDA, Less than 2xTPU, or not identified.

* - Isotope considered not identified. Activity and TPU are taken from the isotopic Key-line.

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SOUTHWEST RESEARCH INSTITUTE

GAMMA SPECTROMETRY ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Sample ID A2-AC-21	Lab System ID	Analyte	Results pCi/g dry wt. basis	Q	TPU (1s) (pCi/g)	MDA (pCi/g)	Date Analyzed
Uranium 238 Decay Series	590214R2	^{210}Pb	8.51E+00	U	1.35E+01	6.29E+01	3/14/2016
	590214R2	^{214}Bi	1.87E+02		5.38E+00	3.86E+00	3/14/2016
	590214R2	^{214}Pb	2.07E+02		9.99E+00	6.22E+00	3/14/2016
	590214R2	^{234}Pa *	2.56E-01	U	2.67E+00	1.38E+01	3/14/2016
	590214R2	^{234}Th	3.06E+02		1.63E+01	4.50E+01	3/14/2016
Uranium 235 Decay Series	590214R2	^{211}Bi	3.22E+02		4.71E+01	1.73E+01	3/14/2016
	590214R2	^{211}Pb	1.17E+02		9.30E+00	4.12E+01	3/14/2016
	590214R2	^{219}Rn	1.33E+02		6.92E+00	1.44E+01	3/14/2016
	590214R2	^{223}Ra	8.96E+01		5.36E+00	1.15E+01	3/14/2016
	590214R2	^{227}Th	5.40E+01		4.52E+00	2.11E+01	3/14/2016
	590214R2	^{231}Pa	1.24E+02		1.31E+01	6.48E+01	3/14/2016
	590214R2	^{231}Th	4.06E+02		2.06E+01	4.08E+01	3/14/2016
Thorium 232 Decay Series	590214R2	^{208}Tl *	2.27E+00	U	5.37E-01	2.72E+00	3/14/2016
	590214R2	^{212}Bi *	-6.60E+00	U	6.28E+00	2.97E+01	3/14/2016
	590214R2	^{212}Pb *	2.88E+01	U	2.24E+00	7.99E+00	3/14/2016
	590214R2	^{224}Ra *	1.51E+02	U	1.55E+01	5.26E+01	3/14/2016
	590214R2	^{228}Ac *	4.62E+00	U	2.06E+00	9.90E+00	3/14/2016

Q - Data Qualifier. MDA - Minimum Detectable Activity. TPU - Total Propagated Uncertainty.

U - Less than MDA, Less than 2xTPU, or not identified.

* - Isotope considered not identified. Activity and TPU are taken from the isotopic Key-line.

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SOUTHWEST RESEARCH INSTITUTE

GAMMA SPECTROMETRY ANALYSIS DATA SHEET

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Sample ID WL-234CT	Lab System ID	Analyte	Results pCi/g dry wt. basis	Q	TPU (1s) (pCi/g)	MDA (pCi/g)	Date Analyzed
Uranium 238 Decay Series	591000R2	^{210}Pb	3.44E+02		4.09E+01	9.11E+01	3/14/2016
	591000R2	^{214}Bi	1.20E+03		2.88E+01	7.55E+00	3/14/2016
	591000R2	^{214}Pb	1.22E+03		5.74E+01	1.28E+01	3/14/2016
	591000R2	^{234}Pa *	4.13E+00	U	5.13E+00	2.63E+01	3/14/2016
	591000R2	^{234}Th *	-2.91E+02	U	3.38E+01	7.10E+01	3/14/2016
Uranium 235 Decay Series	591000R2	^{211}Bi	8.60E+02		2.52E+02	3.56E+01	3/14/2016
	591000R2	^{211}Pb	1.91E+02		1.69E+01	9.85E+01	3/14/2016
	591000R2	^{219}Rn	2.31E+02		1.23E+01	3.33E+01	3/14/2016
	591000R2	^{223}Ra	1.92E+02		9.60E+00	2.59E+01	3/14/2016
	591000R2	^{227}Th	1.77E+02		1.32E+01	3.75E+01	3/14/2016
	591000R2	^{231}Pa	1.87E+02		2.08E+01	1.45E+02	3/14/2016
	591000R2	^{231}Th *	2.13E+02	U	1.73E+01	5.64E+01	3/14/2016
Thorium 232 Decay Series	591000R2	^{208}Tl *	-8.10E-01	U	4.60E-01	5.67E+00	3/14/2016
	591000R2	^{212}Bi *	-6.86E+01	U	1.48E+01	6.62E+01	3/14/2016
	591000R2	^{212}Pb *	1.49E+01	U	2.92E+00	1.44E+01	3/14/2016
	591000R2	^{224}Ra *	1.61E+03	U	1.02E+02	1.22E+02	3/14/2016
	591000R2	^{228}Ac *	6.83E+00	U	4.88E+00	2.23E+01	3/14/2016

Q - Data Qualifier. MDA - Minimum Detectable Activity. TPU - Total Propagated Uncertainty.

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SOUTHWEST RESEARCH INSTITUTE

BLANK SUMMARY

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Sample ID Preparation Blank	Lab System ID	Analyte	Results (pCi/g)	Q	TPU (1s) (pCi/g)	MDA (pCi/g)	Date Analyzed
Uranium 238 Decay Series	PBWA19JVR2	^{210}Pb *	6.42E-01	U	2.61E-01	1.54E+00	3/14/2016
	PBWA19JVR2	^{214}Bi *	-1.02E-02	U	2.77E-02	1.38E-01	3/14/2016
	PBWA19JVR2	^{214}Pb *	5.65E-03	U	2.28E-02	1.22E-01	3/14/2016
	PBWA19JVR2	^{234}Pa *	-2.38E-02	U	2.69E-02	1.41E-01	3/14/2016
	PBWA19JVR2	^{234}Th *	7.41E-01	U	1.73E-01	7.11E-01	3/14/2016
Uranium 235 Decay Series	PBWA19JVR2	^{211}Bi *	-3.13E-02	U	6.30E-02	3.28E-01	3/14/2016
	PBWA19JVR2	^{211}Pb *	-7.71E-02	U	2.12E-01	1.09E+00	3/14/2016
	PBWA19JVR2	^{219}Rn *	-1.16E-02	U	6.09E-02	3.20E-01	3/14/2016
	PBWA19JVR2	^{223}Ra *	-3.52E-02	U	4.78E-02	2.46E-01	3/14/2016
	PBWA19JVR2	^{227}Th *	8.45E-02	U	5.16E-02	2.91E-01	3/14/2016
	PBWA19JVR2	^{231}Pa *	-4.45E-01	U	2.95E-01	1.47E+00	3/14/2016
	PBWA19JVR2	^{231}Th *	2.98E-02	U	7.73E-02	4.49E-01	3/14/2016
Thorium 232 Decay Series	PBWA19JVR2	^{208}Tl *	1.04E-02	U	1.16E-02	6.31E-02	3/14/2016
	PBWA19JVR2	^{212}Bi *	4.94E-02	U	1.54E-01	8.25E-01	3/14/2016
	PBWA19JVR2	^{212}Pb *	4.73E-03	U	1.49E-02	8.16E-02	3/14/2016
	PBWA19JVR2	^{224}Ra *	2.96E-01	U	1.66E-01	9.44E-01	3/14/2016
	PBWA19JVR2	^{228}Ac *	5.69E-02	U	5.05E-02	2.73E-01	3/14/2016

Q - Data Qualifier. MDA - Minimum Detectable Activity. TPU - Total Propagated Uncertainty.

U - Less than MDA, Less than 2xTPU, or not identified.

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SOUTHWEST RESEARCH INSTITUTE

LABORATORY CONTROL SAMPLE

Client: Tetra Tech

Task Order #: 160115-1

Case #: 1116399

Project No.: 21431.01.001

Dates Received: 11/20/15, 12/01/15, 12/29/15, 01/15/16

SDG: 588049

SRR #: 56591, 56639, 56785, 56876

Matrix: Solid, Soil

Sample ID Lab Control	Lab System ID	Analyte	Results (pCi/g)	Q	TPU (1s) (pCi/g)	MDA (pCi/g)	True Value (pCi/g)	% Rec
Uranium 238 Decay Series	LCSWA19JVR2	^{214}Bi	3.65E+00		1.85E-01	2.48E-01	3.41E+00	107%
	LCSWA19JVR2	^{214}Pb	3.42E+00		1.62E-01	3.35E-01	3.64E+00	94.0%
Thorium 232 Decay Series	LCSWA19JVR2	^{212}Pb	1.33E+00		6.36E-02	1.99E-01	1.22E+00	109%
	LCSWA19JVR2	^{228}Ac	1.17E+00		1.59E-01	5.56E-01	1.45E+00	80.4%

Q - Data Qualifier. MDA - Minimum Detectable Activity. TPU - Total Propagated Uncertainty.

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SOUTHWEST RESEARCH INSTITUTE
CLIENT: Tetra Tech
TASK ORDER#: 160115-1
SRR#: 56591, 56639, 56785, 56876
SDG: 588049
VTSR: 11.20.15, 12.01.15, 12.01.15, 01.15.16
PROJECT#: 21431.01.001

SAMPLE CALCULATION

Tetra Tech to#160115-1

system id	instr	elem	I @instr (ug/L)	A @instr (mg/L)	B FV (mL)	C Wt (g)	D DF	F result (mg/kg)	reported mg/kg	
588049	ICP	cobalt	-----	0.4770	100	1.0103	10	472	472	
588049	ICP	lead	-----	0.6976	100	0.1077	10	6477	6480	*rounds to 6480
588049	ICP	titanium	-----	0.1761	100	0.1230	10	1432	1430	*rounds to 1430

sample calculation: A = I / 1000
F = (A * D * B) / (C)

4/19/16

000153

Tetra Tech to#160115-1

system id	instr	elem	I @instr (ng/L)	A @instr (mg/L)	B FV (mL)	C Wt (g)	D DF	F result (mg/kg)	reported mg/kg
588049	ICP-MS	U Total	58979.035	0.0590	100	1.0103	100	584	584

sample calculation: A = I / 1000 / 1000
F = (A * D * B) / (C)

4/19/16

000154

SOUTHWEST RESEARCH INSTITUTE
CLIENT: Tetra Tech
TASK ORDER#: 160115-1
SRR#: 56591, 56639, 56785, 56876
SDG: 588049
VTSR: 11.20.15, 12.01.15, 12.01.15, 01.15.16
PROJECT#: 21431.01.001

SAMPLE RECEIPT, TASK ORDER
&
CHAIN OF CUSTODY

000156

Sample Receipt

Southwest Research Institute

Sample Receipt Number: 56591
Revision: 1

This Receipt was Revised 11/25/2015

VTSR: 11/20/15

Time: 08:30:00

Project: 21431.01.001
Case #: T. Mahler
Client: Tetra Tech

Manager: DAMMANN, MIKE
Logged in by: SDOUGLAS
Creation Date: 11/20/15

56591 Tetra Tech

Notes

Samples were received intact.

Fed Ex Tracking #:
806503795804 - 19.0 °C (no ice)

UN2910, Radioactive Material, excepted package - limited quantity of material

Direct scans on sample will be done in the lab.

Parameters: Analysis/located on Task Order.

See chain-of-custody as part of the SRR system for more information.

Radioactivity: See Radioactive Material Receiving Form
Model 5, Ludlum SN: 216975
Background: Passed

Model 177, Ludlum SN: 124238
Background: Passed

Rad Activity:
1D7-84-85 - ~ 800 cpm ; <0.5 mR/hr

Rev. 1
Corrected client ID.

Backaround CPM: <100 cpm
Container Wipe CPM: <100 cpm
Total CPM: ~800

System ID	Customer ID	CED	Matrix	Containers	Special Reqs.
588049	1D7-84-85		Solid	2	Rad

Containers: 2 **Samples: 1**

These documents are associated with this receipt: 190253[COC for SRR 56591], 190254[SRR Paperwork for SRR 56591]

Thermometer: 021056
Temperature: 19.0

Page Printed: 04/27/2016 09:37
ver: (7/18/2014)

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

000157

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Tom Mahler	Pyrolysis Study - Emanation 1	16 / 11 / 2015	1 of 1

CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS: CUBITAINER	32 oz BOTTLE	BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	SAMPLED MEDIA: water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
ID7-84-85		2					X				Pyrolysis Study Sample #1

Client: Tetra Tech
SwRI Project # 21431.01.001
VTSR: 11/20/15 08:30
Battery Check: Y
Cooler/Container Wipe: <0.5 mR/hr
Total cpm-mR/h (samples): ~800 cpm; <0.5 mR/hr
(see Radioactive Material Receiving Form for more information)

SwRI SRR #56591
Case: T. Mahler
Sample(s) Received: Intact
Background Check: <100 cpm (Lab 103)
Temp.: 19.0 °C (no ice) / SN # 021056
Wipe Frisk Description: Cooler(s) - 1

DESCRIPTION OF SHIPMENT

1 PIECE(S) CONSISTING OF _____ BOX(ES)
1 ICE CHEST(S); OTHER _____

MODE OF SHIPMENT

X COMMERCIAL CARRIER FedEx
_____ COURIER
_____ SAMPLER CONVEYED
8065 0379 5804
(SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
☑ SEALED ☐ UNSEALED	11/16/15	1:30pm	Tom Mahler ☑ SEALED ☐ UNSEALED	Arrange for shipping to laboratory
RELINQUISHED BY: Tom Mahler ☑ SEALED ☐ UNSEALED	11/16/15	15:13	Dave Kimmell ☐ SEALED ☐ UNSEALED	Prepare sample for shipment to lab
RELINQUISHED BY: Dave Kimmell ☑ SEALED ☐ UNSEALED	11/19/15	15:17	[illegible] ☐ SEALED ☐ UNSEALED	11/20/15 0830 — Transport to lab for Analysis

*U.S. GPO: 2002-756-917/40053

Southwest Research Institute

Traffic Report

000158

Sample Custodian Signature: _____

1. Custody Seal — Not Present or Damaged
2. Chain of Custody — Present
3. Sample Tags — Not Present
   Sample Tag Numbers — Not on COC
4. SMO Forms — Not Present

Client: Tetra Tech

Project: 21431.01.001

Case: T. Mahler / SDG: _____

Sample Receipt: 56591

Airbill: 806503795804

Custody Seal #(s): N/A

Date Received	Time Received	COC Record	SMO Sample #	Corresponding		Traffic Rpt, Tags, COC Agree	Sample Condition
				Sample Tag #	SwRI #		
11/20/15	08:30:00	Client COC	107-84-85	N/A	588049	YES	Intact

SAMPLE LOG-IN SHEET

000159

Lab Name: Southwest Research Institute	Page 1 of 1
Received By (Print Name): STEVEN DOUGLAS	Log-in Date: 11/20/2015
Received By (Signature):	
Case Number: T. Mahler	Sample Delivery Group No.: N/A
Remarks: 21431.01.001	SAS Number: N/A

		EPA Sample #	Corresponding Sample Tag #	Corresponding Assigned Lab #	Remarks: Condition of Sample Shipment, etc
1.	Custody Seal(s) — Present/Absent* Intact/Broken	107-84-85	N/A	588049	Intact
2.	Custody Seal Nos. — N/A				
3.	Chain-of Custody Records — Present/Absent*				
4.	Traffic Reports or Packing Lists — Present/Absent*				
5.	Airbill — Airbill/Sticker Present/Absent*				
6.	Airbill No. — 806503795804				
7.	Sample Tags — Present/Absent*				
	Sample Tag Numbers — Listed/Not listed on Chain of Custody				
8.	Sample Condition — Intact/Broken*/Leaking				
9.	Cooler Temperature — 19.0C				
10.	Does Information on custody records, traffic reports, and sample tags agree? — Yes/No*				
11.	Date Received at Lab — 11/20/2015				
12.	Time Received — 08:30:00				

Sample Transfer		
Fraction: Rad Chem	Fraction	
Area #: Room 45	Area #	
By: STEVEN DOUGLAS	By	
On: 11/20/2015	On	

* Contact SMO and attach record of resolution

Reviewed By:	Logbook No.: Sample Receipt (56591)
Date: 11.23.14	Logbook Page No.: 9279 SOC 1 of 5

000160

Sample Receipt

Southwest Research Institute

Sample Receipt Number: 56639

VTSR: 12/01/15

Time: 08:45:00

Project: 21431.01.001
Case #: T. Mahler
Client: Tetra Tech

Manager: DAMMANN, MIKE
Logged in by: SDOUGLAS
Creation Date: 12/01/15

Notes

Samples were received intact.

Fed Ex Tracking #:
806503795790 - 19.0 °C (no ice)

UN2910, Radioactive Material, excepted package - limited quantity of material

Direct scans on sample will be done in the lab.

Parameters: Analysis/located on Task Order.

See chain-of-custody as part of the SRR system for more information.

Radioactivity: See Radioactive Material Receiving Form
Model 5, Ludlum SN: 216975
Background: Passed

Model 177, Ludlum SN: 124238
Background: Passed

Rad Activity:
A2-S1 - ~ 800 cpm ; <0.5 mR/hr

Background CPM: <100 cpm
Container Wipe CPM: <100 cpm
Total CPM: ~800

System ID	Customer ID	CED	Matrix	Containers	Special Reqs.
588556	A2-S1		Soil	3	

Containers: 3 **Samples: 1**

These documents are associated with this receipt: 190631[COC for SRR 56639], 190632[SRR Paperwork for SRR 56639]

Thermometer: 021056
Temperature: 19.0

Page Printed: 04/27/2016 09:37
ver: (7/18/2014)

56639 Tetra Tech

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

000161

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION	SHEET
Tom Mahler	Pyrolysis Study - Emanation	24 (DAY) 11 (MONTH) 2015 (YEAR)	1 of 1

CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS: CUBITAINER	BOTTLE (≥20)	BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	SAMPLED MEDIA: water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt other sample numbers etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
A2-S1		3					X				

Client: Tetra Tech
SwRI Project # 21431.01.001
VTSR: 12/01/15 08:45
Battery Check: Y
Cooler/Container Wipe: <0.5 mR/hr
Total cpm-mR/h (samples): <100 cpm; <0.5 mR/hr
(see Radioactive Material Receiving Form for more information)

SwRI SRR #56639
Case: T. Mahler
Sample(s) Received: Intact
Background Check: <100 cpm (Lab 103)
Temp.: 19.0 °C (no ice) / SN # 021056
Wipe Frisk Description: Cooler(s) - 3

DESCRIPTION OF SHIPMENT

3 PIECE(S) CONSISTING OF _____ BOX(ES)

3 ICE CHEST(S): OTHER _____

MODE OF SHIPMENT

X COMMERCIAL CARRIER FedEx

_____ COURIER

_____ SAMPLER CONVEYED

8065 0379 5790 (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
[signature] ☐ SEALED ☐ UNSEALED	11/24/15	11:30	Tom Mahler ☑ SEALED ☐ UNSEALED	Arrange for shipping
RELINQUISHED BY: Tom Mahler ☐ SEALED ☐ UNSEALED	DATE: 11/24/15	TIME: 12:00	RECEIVED BY: Dave Linnett ☑ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY: Prepare shipment for laboratory
RELINQUISHED BY: Dave Linnett ☐ SEALED ☐ UNSEALED	DATE: 11-30-15	TIME: 15:00	RECEIVED BY: [signature] 12/1/15 0845 ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY: Transport to Lab for GC Analysis

7-ERA-9262(Revised 5/85)

*U.S. GPO: 2002-756-917/40053

Sample Custodian Signature: _____

Southwest Research Institute

Traffic Report

000162

1. Custody Seal — Not Present or Damaged
2. Chain of Custody — Present
3. Sample Tags — Not Present
   Sample Tag Numbers — Not on COC
4. SMO Forms — Not Present

Client: Tetra Tech

Project: 21431.01.001

Case: T. Mahler / SDG: _____

Sample Receipt: 56639

Airbill: 806503795790

Custody Seal #(s): N/A

Date Received	Time Received	COC Record	SMO Sample #	Corresponding		Traffic Rpt, Tags, COC Agree	Sample Condition
				Sample Tag #	SwRI #		
12/01/15	08:45:00	Client COC	A2-S1	N/A	588556	YES	Intact

SAMPLE LOG-IN SHEET

000163

Lab Name: Southwest Research Institute	Page 1 of 1
Received By (Print Name): STEVEN DOUGLAS	Log-in Date: 12/01/2015
Received By (Signature):	
Case Number: T. Mahler	Sample Delivery Group No.: NA
Remarks: 21431.01.001	SAS Number: NA

		EPA Sample #	Corresponding Sample Tag #	Corresponding Assigned Lab #	Remarks Condition of Sample Shipment, etc
1.	Custody Seal(s) — Present/Absent* Intact/Broken	A2-S1	N/A	588556	Intact
2.	Custody Seal Nos. — N/A				
3.	Chain-of Custody Records — Present/Absent*				
4.	Traffic Reports or Packing Lists — Present/Absent				
5.	Airbill — Airbill/Sticker Present/Absent*				
6.	Airbill No. — 806503795790				
7.	Sample Tags — Present/Absent				
	Sample Tag Numbers — Listed/Not listed on Chain of Custody				
8.	Sample Condition — Intact/Broken*/Leaking				
9.	Cooler Temperature — 19.0C				
10.	Does Information on custody records, traffic reports, and sample tags agree? — Yes/No*				
11.	Date Received at Lab — 12/01/2015				
12.	Time Received — 08:45:00				

Sample Transfer					
Fraction: Rad Chem	Fraction				
Area #: Room 45	Area #				
By: STEVEN DOUGLAS	By				
On: 12/01/2015	On				

* Contact SMO and attach record of resolution

Reviewed By:	Logbook No.: Sample Receipt (56639)
Date: 12.2.15	Logbook Page No.: 9290 SEC 2 of 3

000164

Sample Receipt

Southwest Research Institute

Sample Receipt Number: 56785

VTSR: 12/29/15

Time: 08:25:00

Project: 21431.01.001
Case #: T. Mahler
Client: Tetra Tech

Manager: DAMMANN, MIKE
Logged in by: SDOUGLAS
Creation Date: 12/29/15

56785 Tetra Tech

Notes

Samples were received intact.

Fed Ex Tracking #:
806503795789 - 19.2 °C (no ice)
775302492559 - 19.2 °C (no ice)
775302492560 - 19.2 °C (no ice)

UN2910, Radioactive Material, excepted package - limited quantity of material

Direct scans on sample will be done in the lab.

Parameters: Analysis/located on Task Order.

See chain-of-custody as part of the SRR system for more information.

Radioactivity: See Radioactive Material Receiving Form
Model 5, Ludlum SN: 21697S
Background: Passed

Model 177, Ludlum SN: 124238
Background: Passed

Rad Activity:
A1-AC-1 - ~ 2400 cpm ; <0.5 mR/hr
A1-AC-3 - ~ 1200 cpm ; <0.5 mR/hr
A2-AC-21 - ~ 400 cpm ; <0.5 mR/hr

Backaround CPM: <100 cpm
Container Wipe CPM: <100 cpm
Total CPM: ~2400

System ID	Customer ID	CED	Matrix	Containers	Special Reqs.
590212	A1-AC-1		Soil	1	Rad
590213	A1-AC-3		Soil	1	Rad
590214	A2-AC-21		Soil	1	Rad

Containers: 3 **Samples: 3**

These documents are associated with this receipt: 192017[COC for SRR 56785], 192018[SRR Paperwork for SRR 56785]

Thermometer: 021056
Temperature: 19.2

Page Printed: 04/27/2016 09:37
ver: (7/18/2014)

000165

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Tom Mahler	Pyrolysis Study - Emanation	21 / 12 / 15	1 of 1

CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS: CUBITAINER	32 oz BOTTLE	BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	SAMPLED MEDIA: water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
A1-AC-3		1					X				
A1-AC-1		1					X				
A2-AC-21		1					X				

Client: Tetra Tech
SwRI Project # 21431.01.001
VTSR: 12/29/15 08:25
Battery Check: Y
Cooler/Container Wipe: <0.5 mR/hr
Total cpm-mR/h (samples): ~2400 cpm; <0.5 mR/hr
(see Radioactive Material Receiving Form for more information)

SwRI SRR #56785
Case: T. Mahler
Sample(s) Received: Intact
Background Check: <100 cpm (Lab 103)
Temp.: 19.2 °C (no ice) / SN # 021056
Wipe Frisk Description: Cooler (s) - 1

DESCRIPTION OF SHIPMENT

3 PIECE(S) CONSISTING OF 3 BOX(ES) +
3 ICE CHEST(S); OTHER _____

MODE OF SHIPMENT

X COMMERCIAL CARRIER: FedEx
____ COURIER
____ SAMPLER CONVEYED
8065 0379 5789 (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
Matt Mahler ☑ SEALED ☐ UNSEALED	12/21/15	1623	Tom Mahler ☑ SEALED ☐ UNSEALED	Arrange for shipping
RELINQUISHED BY: Tom Mahler ☑ SEALED ☐ UNSEALED	DATE 12/21/15	TIME 16:40	RECEIVED BY: Dave Kimmell ☑ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY: Package for shipping to the lab
RELINQUISHED BY: Dave Kimmell ☑ SEALED ☐ UNSEALED	DATE 12-28-15	TIME 14:00	RECEIVED BY: SwRI 12/29/15 0825 ☑ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY: Transport to Lab. for Analysis / Testing

7-EPA-9262(Revised 5/85)

Southwest Research Institute

Traffic Report

000166

Sample Custodian Signature: _____

1. Custody Seal — Present
2. Chain of Custody — Not Present
3. Sample Tags — Not Present
   Sample Tag Numbers — Not on COC
4. SMO Forms — Not Present

Client: Tetra Tech

Project: 21431.01.001

Case: T. Mahler / SDG: _____

Sample Receipt: 56785

Airbill: 806503795789, 775302492559, 775302492560

Custody Seal #(s): N/A

Date Received	Time Received	COC Record	SMO Sample #	Corresponding		Traffic Rpt, Tags, COC Agree	Sample Condition
				Sample Tag #	SwRI #		
12/29/15	08:25:00	Client COC	A1-AC-1	N/A	590212	YES	Intact
12/29/15	08:25:00	Client COC	A1-AC-3	N/A	590213	YES	Intact
12/29/15	08:25:00	Client COC	A2-AC-21	N/A	590214	YES	Intact

000167

SAMPLE LOG-IN SHEET

Lab Name: Southwest Research Institute	Page 1 of 1
Received By (Print Name): STEVEN DOUGLAS	Log-in Date: 12/29/2015
Received By (Signature):	
Case Number: T. Mahler	Sample Delivery Group No.: N/A
Remarks: 21431.01.001	SAS Number: n/a

		EPA Sample #	Corresponding Sample Tag #	Corresponding Assigned Lab #	Remarks Condition of Sample Shipment, etc
1.	Custody Seal(s) — Present/Absent* Intact/Broken	A1-AC-1	N/A	590212	Intact
2.	Custody Seal Nos.: N/A	A1-AC-3	N/A	590213	Intact
		A2-AC-21	N/A	590214	Intact
3.	Chain-of Custody Records: Present/Absent				
4.	Traffic Reports or Packing Lists: Present/Absent				
5.	Airbill: Airbill/Sticker Present/Absent*				
6.	Airbill No.: 806503795789, 775302492559, 775302492560				
7.	Sample Tags: Present/Absent				
	Sample Tag Numbers: Listed/Not listed on Chain of Custody				
8.	Sample Condition: Intact/Broken*/ Leaking				
9	Cooler Temperature: 19.2C				
10.	Does Information on custody records, traffic reports, and sample tags agree? Yes/No*				
11.	Date Received at Lab: 12/29/2015				
12.	Time Received: 08:25:00				

Sample Transfer					
Fraction: Rec Chem	Fraction				
Area #: Room 45	Area #				
By: STEVEN DOUGLAS	By				
On: 12/29/2015	On				

* Contact SMO and attach record of resolution

Reviewed By:	Logbook No.: Sample Receipt (56785)
Date: 1.4.16	Logbook Page No.: 9318 SEC 2, 3 OF 3

000168

Sample Receipt

Southwest Research Institute

Sample Receipt Number: 56876

VTSR: 01/15/16

Time: 08:30:00

Project: 21431.01.001
Case #: D. Kinroth
Client: Tetra Tech

Manager: DAMMANN, MIKE
Logged in by: SDOUGLAS
Creation Date: 01/15/16

Notes

Samples were received intact.

Fed Ex Tracking #:
806503795778 - 18.S °C (no ice)

UN2910, Radioactive Material, excepted package - limited quantity of material

Direct scans on sample will be done in the lab.

Parameters: Analysis/located on Task Order.

See chain-of-custody as part of the SRR system for more information.

Radioactivity: See Radioactive Material Receiving Form
Model 5, Ludlum SN: 216975
Background: Passed

Model 177, Ludlum SN: 124238
Background: Passed

Rad Activity:
WL-234CT - ~ 1,800 cpm ; <0.5 mR/hr

Backaround CPM: <100 cpm
Container Wipe CPM: <100 cpm
Total CPM: ~1,800

System ID	Customer ID	CED	Matrix	Containers	Special Reqs.
591000	WL-234CT		Soil	1	

Containers: 1 **Samples: 1**

These documents are associated with this receipt: 192848[COC for SRR 56876], 192849[SRR Paperwork for SRR 56876]

Thermometer: 021056
Temperature: 18.5

Page Printed: 04/27/2016 09:37
ver: (7/18/2014)

56876 Tetra Tech

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

000169

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
KEVIN LARSON	PYROLYSIS STUDY	01 / 08 / 16	1 of 1

CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS: CUBITAINER	1 BOTTLE	BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	SAMPLED MEDIA: water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
WL-234CT		1					X				

Client: Tetra Tech
SwRI Project # 21431.01.001
VTSR: 01/15/16 08:30
Battery Check: Y
Cooler/Container Wipe: <100 cpm
Total cpm-mR/h (samples): ~1,800 cpm; <0.5 mR/hr Wipe Frisk Description: Cooler(s) - 1
(see Radioactive Material Receiving Form for more information)

SwRI SRR #56876
Case: D. Kinroth
Sample(s) Received: Intact
Background Check: <100 cpm (Lab 103)
Temp.: 18.5 °C (no ice) / SN # 021056

DESCRIPTION OF SHIPMENT

1 PIECE(S) CONSISTING OF _____ BOX(ES)

1 ICE CHEST(S); OTHER _____

MODE OF SHIPMENT

X COMMERCIAL CARRIER: FedEx

____ COURIER

____ SAMPLER CONVEYED

8065 0379 5778
(SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
KEVIN LARSON ☒ SEALED ☐ UNSEALED	1/8/16	1130	Dave Kinroth ☒ SEALED ☐ UNSEALED	Prepare Shipment to lab for study
RELINQUISHED BY Dave Kinroth ☒ SEALED ☐ UNSEALED	DATE 1/14/16	TIME 16:24	RECEIVED BY ☒ SEALED ☐ UNSEALED	1/15/16 FED REASON FOR CHANGE OF CUSTODY Transport to Lab for Analysis
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY

7-EPA-9262(Revised 5/85)

Southwest Research Institute

Traffic Report

000170

Sample Custodian Signature: _____

1. Custody Seal	Not Present or Damaged	**Client: Tetra Tech**
2. Chain of Custody	Present	Project: 21431.01.001
3. Sample Tags	Not Present	Case: D. Kinroth / SDG: _____
Sample Tag Numbers	Not on COC	Sample Receipt: 56876
4. SMO Forms	Not Present	Airbill: 806503795778

Custody Seal #(s): N/A

Date Received	Time Received	COC Record	SMO Sample #	Corresponding		Traffic Rpt, Tags, COC Agree	Sample Condition
				Sample Tag #	SwRI #		
01/15/16	08:30:00	Client COC	WL-234CT	N/A	591000	YES	Intact

SAMPLE LOG-IN SHEET

000171

Lab Name: Southwest Research Institute	Page 1 of 1
Received By (Print Name): STEVEN DOUGLAS	Log-in Date: 01/15/2016
Received By (Signature):	
Case Number: D. Kinroth	Sample Delivery Group No.: NA
SAS Number: NA	
Remarks: 21431.01.001	

			EPA Sample #	Corresponding Sample Tag #	Corresponding Assigned Lab #	Remarks, Condition of Sample Shipment, etc
1.	Custody Seal(s)	Present/Absent* Intact/Broken	WL-234CT	N/A	591000	Intact
2.	Custody Seal Nos.	N/A				
3.	Chain-of Custody Records	Present/Absent*				
4.	Traffic Reports or Packing Lists	Present/Absent*				
5.	Airbill	Airbill/Sticker Present/Absent*				
6.	Airbill No.	806503795778				
7.	Sample Tags	Present/Absent*				
	Sample Tag Numbers	Listed/Not listed on Chain of Custody				
8	Sample Condition	Intact/Broken*/ Leaking				
9.	Cooler Temperature	18.5C				
10.	Does Information on custody records, traffic reports, and sample tags agree?	Yes/No*				
11.	Date Received at Lab	01/15/2016				
12.	Time Received	08:30:00				

Sample Transfer		
Fraction: Rad Vault	Fraction	
Area #: Room 45	Area #	
By: STEVEN DOUGLAS	By	
On: 01/15/2016	On	

* Contact SMO and attach record of resolution

Reviewed By:	Logbook No: Sample Receipt (5687)
Date: 1.15.16	Logbook Page No: 9335 SEC 2 of 3

Southwest Research Institute

Laboratory Task Order

000172

TO #: 160115-1 Revision: 3

Project(s): 21431.01.001
Manager(s): DAMMANN, MIKE
To Client: 02/05/16

SDG: 588049
VTSR: 11/20/15, 12/01/15, 12/29/15, 01/15/16
CASE: 1116399

SRR #'s: 56591, 56639, 56785, 56876
Client(s): Tetra Tech

Instructions

TETRA TECH, INC. EPA Contract EP-S7-13-06
Evaluation of radionuclide release potential in heated soils for the West Lake Landfill site.

Task 1 _ Develop documentation, proposed methodology to simulate or predict release risk and generate test procedures.
The effort under Task 1 will involve the development of data quality objectives as well as proposing a methodology to achieve the stated objectives. SwRI will work closely with EPA and contractors to establish testing parameters and methodologies to ensure that any testing will meet desired goals. A clear definition for the conditions used for testing is needed such as temperature, contact time and liquid to solid ratio etc. used to evaluate the potential of ground water leaching of contaminants or maximum temperature, ramp rate, oxygen content of gas, etc for simulating airborne releases. The data generated by this task should enable the generation of a detailed procedure or procedures to be used for actual testing. Using the information generated under this task, detailed test procedures will be generated and submitted to EPA for review/ approval. It is anticipated that three procedures will be generated: one to evaluate the risk for Tetra Tech ground water contamination, a second to evaluate the potential for any airborne release of contaminants, and optionally, a third to evaluate both the radon emanation coefficient and/or radon flux. The radon emanation coefficient is used to determine the amount of radon that is available from a sample that could potentially reach the general environment; it is run on a small aliquot of ground/sieved soil. The radon flux is a measurement to simulate the actual quantity of radon that reaches the surface of a column of soil, it is run using up to a 3 foot column of packed soil, and measures the quantity of radon that makes it to the surface of the soil column.
Anticipated Deliverables:
_ Table of desired data quality objectives such as sensitivity, isotopes of concern and precision/accuracy requirements.
_ Table of conditions to be used during testing, numbers of replicate sample needed to achieve results within desired confidence limits, list of anticipated limitations of data to be generated.
_ Methods or SOP for each anticipated analytical test to include sampling protocols if needed.

Task 2 _ Generate analytical data
Using the procedures generated and data quality objectives defined under task 1, actual or simulated field samples will be assayed to obtain the data needed to determine the potential for radioisotope release under the test conditions used. Data will be generated under the SwRI quality assurance programs that, at a minimum, meet ISO9001 and/or ISO17025 standards. Estimated costs for conducting Task 2 were determined from our conducting triplicate sample assays for each of two procedures and two optional procedures.
The two standard procedures will be applied to three test conditions that are conducted in duplicate (3 conditions x 2 (duplicate) x 3 samples x 2 procedures). This results in a total of 36 sample assays, 18 water leaches and 18 air release samples. Three specific analytical techniques plus gamma spectroscopy will be applied. For example, ICP-MS for Iso-U(234,235,238) and Th-232 + Alpha Spec for RA-226 + Alpha Spec for ISO-Th (228,230) + Gamma. The two optional procedures will also be run on three test conditions that are conducted in duplicate (3 conditions x 2 (duplicate) x 3 samples x 2 procedures). This results in a total of 36 sample assays, 18 samples for radon emanation coefficient and 18 column samples (2-4" in diaby 24-36" tall) for radon flux measurements. Due to the specialized nature of radon measurements.

Ted Faile, PG, CHMM; ted.faile@tetratech.com; Direct: 816.412.1754 | Cell: 913.544.7051 | Fax: 816.410.1748
Tetra Tech; Complex World, Clear Solutions; 415 Oak Street; Kansas City, MO 64106
REVISION 1, DRmz 01/15/16: Task Order revised to add additional test codes.
REVISION 2, DRmz 01/15/16: Task Order revised to add sample 591000, SRR 56876, received on 01/15/16.

Documents Related to this task order: 190253[COC for SRR 56591], 190254[SRR Paperwork for SRR 56591], 190631[COC for SRR 56639], 190632[SRR Paperwork for SRR 56639], 192017[COC for SRR 56785], 192018[SRR Paperwork for SRR 56785], 192848[COC for SRR 56876], 192849[SRR Paperwork for SRR 56876]

Deliverables --> Hard Copy: -YES- EDD: no PDF: -YES-

Test: ALPHA-Ra_SWRI Holding: 180 days from CED
Section: RADCHEM **Alpha Spec Analysis for Radium-226** Cnt: 6

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
588049	rad	1	Solid	1D7-84-85	NO DATA	NO DATA

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
588049	rad	2	Solid	1D7-84-85	NO DATA	NO DATA
588556	rad	1	Soil	A2-S1	NO DATA	NO DATA
588556	rad	2	Soil	A2-S1	NO DATA	NO DATA
588556	rad	3	Soil	A2-S1	NO DATA	NO DATA
590212	rad	1	Soil	A1-AC-1	NO DATA	NO DATA
590213	rad	1	Soil	A1-AC-3	NO DATA	NO DATA
590214	rad	1	Soil	A2-AC-21	NO DATA	NO DATA
591000	rad	1	Soil	WL-234CT	NO DATA	NO DATA

Test: ALPHA-TH_SWRI
Section: RADCHEM

Holding: 180 days from CED

Alpha Spec Analysis for Isotopic Thorium

Cnt: 6

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
588049	rad	1	Solid	1D7-84-85	NO DATA	NO DATA
588049	rad	2	Solid	1D7-84-85	NO DATA	NO DATA
588556	rad	1	Soil	A2-S1	NO DATA	NO DATA
588556	rad	2	Soil	A2-S1	NO DATA	NO DATA
588556	rad	3	Soil	A2-S1	NO DATA	NO DATA
590212	rad	1	Soil	A1-AC-1	NO DATA	NO DATA
590213	rad	1	Soil	A1-AC-3	NO DATA	NO DATA
590214	rad	1	Soil	A2-AC-21	NO DATA	NO DATA
591000	rad	1	Soil	WL-234CT	NO DATA	NO DATA

Test: DIG-ROCK
Section: METALPREP

Holding: 180 days from CED

Digestion Method Whole Rock Total Metals

Cnt: 6

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
588049	rad	1	Solid	1D7-84-85	NO DATA	NO DATA
588049	rad	2	Solid	1D7-84-85	NO DATA	NO DATA
588556	rad	1	Soil	A2-S1	NO DATA	NO DATA
588556	rad	2	Soil	A2-S1	NO DATA	NO DATA
588556	rad	3	Soil	A2-S1	NO DATA	NO DATA
590212	rad	1	Soil	A1-AC-1	NO DATA	NO DATA
590213	rad	1	Soil	A1-AC-3	NO DATA	NO DATA
590214	rad	1	Soil	A2-AC-21	NO DATA	NO DATA
591000	rad	1	Soil	WL-234CT	NO DATA	NO DATA

Test: DIG-TEFLON
Section: METALPREP

Holding: 180 days from CED

Digestion Method Teflon Beaker Total Metals

Cnt: 6

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
588049	rad	1	Solid	1D7-84-85	NO DATA	NO DATA
588049	rad	2	Solid	1D7-84-85	NO DATA	NO DATA
588556	rad	1	Soil	A2-S1	NO DATA	NO DATA
588556	rad	2	Soil	A2-S1	NO DATA	NO DATA
588556	rad	3	Soil	A2-S1	NO DATA	NO DATA
590212	rad	1	Soil	A1-AC-1	NO DATA	NO DATA
590213	rad	1	Soil	A1-AC-3	NO DATA	NO DATA
590214	rad	1	Soil	A2-AC-21	NO DATA	NO DATA
591000	rad	1	Soil	WL-234CT	NO DATA	NO DATA

SDG: 588049
VTSR: 11/20/15, 12/01/15, 12/29/15, 01/15/16
CASE: 1116399

SRR #'s: 56591, 56639, 56785, 56876
Client(s): Tetra Tech

Project(s): 21431.01.001
Manager(s): DAMMANN, MIKE
To Client: 02/05/16

Test: DIG-TOTALDISS_ISOU Holding: 180 days from CED
Section: METALPREP
Digestion Method Total Dissolution for Isotopic Uranium - (U234, U235, U236, U238)
Cnt: 6

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
588049	rad	1	Solid	1D7-84-85	NO DATA	NO DATA
588049	rad	2	Solid	1D7-84-85	NO DATA	NO DATA
588556	rad	1	Soil	A2-S1	NO DATA	NO DATA
588556	rad	2	Soil	A2-S1	NO DATA	NO DATA
588556	rad	3	Soil	A2-S1	NO DATA	NO DATA
590212	rad	1	Soil	A1-AC-1	NO DATA	NO DATA
590213	rad	1	Soil	A1-AC-3	NO DATA	NO DATA
590214	rad	1	Soil	A2-AC-21	NO DATA	NO DATA
591000	rad	1	Soil	WL-234CT	NO DATA	NO DATA

Test: FUS-80/20 Holding: 180 days from CED
Section: METALPREP
Fusion Method 80/20 Meta/Tetraborate Total Metals
Cnt: 6

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
588049	rad	1	Solid	1D7-84-85	NO DATA	NO DATA
588049	rad	2	Solid	1D7-84-85	NO DATA	NO DATA
588556	rad	1	Soil	A2-S1	NO DATA	NO DATA
588556	rad	2	Soil	A2-S1	NO DATA	NO DATA
588556	rad	3	Soil	A2-S1	NO DATA	NO DATA
590212	rad	1	Soil	A1-AC-1	NO DATA	NO DATA
590213	rad	1	Soil	A1-AC-3	NO DATA	NO DATA
590214	rad	1	Soil	A2-AC-21	NO DATA	NO DATA
591000	rad	1	Soil	WL-234CT	NO DATA	NO DATA

Test: GAMMA-SWRI Holding: 180 days from CED
Section: RADCHEM
Gamma Spec Analysis
Cnt: 6

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
588049	rad	1	Solid	1D7-84-85	NO DATA	NO DATA
588049	rad	2	Solid	1D7-84-85	NO DATA	NO DATA
588556	rad	1	Soil	A2-S1	NO DATA	NO DATA
588556	rad	2	Soil	A2-S1	NO DATA	NO DATA
588556	rad	3	Soil	A2-S1	NO DATA	NO DATA
590212	rad	1	Soil	A1-AC-1	NO DATA	NO DATA
590213	rad	1	Soil	A1-AC-3	NO DATA	NO DATA
590214	rad	1	Soil	A2-AC-21	NO DATA	NO DATA
591000	rad	1	Soil	WL-234CT	NO DATA	NO DATA

Test: ICP-6010B Holding: 180 days from CED
Section: METALS
ICP Method 6010B Total Metals
Cnt: 6

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
588049	rad	1	Solid	1D7-84-85	NO DATA	NO DATA
588049	rad	2	Solid	1D7-84-85	NO DATA	NO DATA
588556	rad	1	Soil	A2-S1	NO DATA	NO DATA
588556	rad	2	Soil	A2-S1	NO DATA	NO DATA
588556	rad	3	Soil	A2-S1	NO DATA	NO DATA

SDG: 588049
VTSR: 11/20/15, 12/01/15, 12/29/15, 01/15/16
CASE: 1116399

SRR #'s: 56591, 56639, 56785, 56876
Client(s): Tetra Tech

Project(s): 21431.01.001
Manager(s): DAMMANN, MIKE
To Client: 02/05/16

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
590212	rad	1	Soil	A1-AC-1	NO DATA	NO DATA
590213	rad	1	Soil	A1-AC-3	NO DATA	NO DATA
590214	rad	1	Soil	A2-AC-21	NO DATA	NO DATA
591000	rad	1	Soil	WL-234CT	NO DATA	NO DATA

Test: ICPMS-SWRI-ISO_U Holding: 180 days from CED
Section: METALS **ICPMS SwRI Method Isotopic Uranium - (U234, U235, U236, U238)** Cnt: 6

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
588049	rad	1	Solid	1D7-84-85	NO DATA	NO DATA
588049	rad	2	Solid	1D7-84-85	NO DATA	NO DATA
588556	rad	1	Soil	A2-S1	NO DATA	NO DATA
588556	rad	2	Soil	A2-S1	NO DATA	NO DATA
588556	rad	3	Soil	A2-S1	NO DATA	NO DATA
590212	rad	1	Soil	A1-AC-1	NO DATA	NO DATA
590213	rad	1	Soil	A1-AC-3	NO DATA	NO DATA
590214	rad	1	Soil	A2-AC-21	NO DATA	NO DATA
591000	rad	1	Soil	WL-234CT	NO DATA	NO DATA

Test: MISC-METALS Holding: 30 days from CED
Section: METALS **See Instructions** Cnt: 6

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
588049	rad	1	Solid	1D7-84-85	NO DATA	NO DATA
588049	rad	2	Solid	1D7-84-85	NO DATA	NO DATA
588556	rad	1	Soil	A2-S1	NO DATA	NO DATA
588556	rad	2	Soil	A2-S1	NO DATA	NO DATA
588556	rad	3	Soil	A2-S1	NO DATA	NO DATA
590212	rad	1	Soil	A1-AC-1	NO DATA	NO DATA
590213	rad	1	Soil	A1-AC-3	NO DATA	NO DATA
590214	rad	1	Soil	A2-AC-21	NO DATA	NO DATA
591000	rad	1	Soil	WL-234CT	NO DATA	NO DATA

Test: MISC-RAD_SWRI Holding: 180 days from CED
Section: RADCHEM **See Instructions** Cnt: 6

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
588049	rad	1	Solid	1D7-84-85	NO DATA	NO DATA
588049	rad	2	Solid	1D7-84-85	NO DATA	NO DATA
588556	rad	1	Soil	A2-S1	NO DATA	NO DATA
588556	rad	2	Soil	A2-S1	NO DATA	NO DATA
588556	rad	3	Soil	A2-S1	NO DATA	NO DATA
590212	rad	1	Soil	A1-AC-1	NO DATA	NO DATA
590213	rad	1	Soil	A1-AC-3	NO DATA	NO DATA
590214	rad	1	Soil	A2-AC-21	NO DATA	NO DATA
591000	rad	1	Soil	WL-234CT	NO DATA	NO DATA

Test: TGA_SwRI Holding: 180 days from CED
Section: WETCHEM **TGA Analysis** Cnt: 6

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
588049	rad	1	Solid	1D7-84-85	NO DATA	NO DATA

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
588049	rad	2	Solid	1D7-84-85	NO DATA	NO DATA
588556	rad	1	Soil	A2-S1	NO DATA	NO DATA
588556	rad	2	Soil	A2-S1	NO DATA	NO DATA
588556	rad	3	Soil	A2-S1	NO DATA	NO DATA
590212	rad	1	Soil	A1-AC-1	NO DATA	NO DATA
590213	rad	1	Soil	A1-AC-3	NO DATA	NO DATA
590214	rad	1	Soil	A2-AC-21	NO DATA	NO DATA
591000	rad	1	Soil	WL-234CT	NO DATA	NO DATA

SOUTHWEST RESEARCH INSTITUTE
CLIENT: Tetra Tech
TASK ORDER#: 160115-1
SRR#: 56591, 56639, 56785, 56876
SDG: 588049
VTSR: 11.20.15, 12.01.15, 12.01.15, 01.15.16
PROJECT#: 21431.01.001

ICP-MS RAW DATA

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form IIA
Initial and Continuing Calibration Verification

Client: Tetra Tech
Task Order: 160115-1
Result Units: ug/L
Associated Analytical Batches: 20160211-A004

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Initial Calibration Source: See Raw Data
Continuing Calibration Source: See Raw Data

Case: 1116399
Project: 21431.01.001

	Initial Calibration Verification				Continuing Calibration Verification						
Analyte	True	Found	%Rec	Limit	True	Found1	%Rec	Found2	%Rec	Limit	M
%U235	-	-	-	-	-	-	-	-	-	-	-
Uranium Total	80.57748	80.1	99.4%	90%-110%	80.57748	77.4	96.1%	81.3	100.9%	90%-110%	MS1
Uranium-234	-	-	-	-	-	-	-	-	-	-	-
Uranium-235	0.57312	0.569	99.3%	90%-110%	0.57312	0.552	96.3%	0.571	99.6%	90%-110%	MS1
Uranium-236	-	-	-	-	-	-	-	-	-	-	-
Uranium-238	80	79.5	99.4%	90%-110%	80	76.9	96.1%	80.7	100.9%	90%-110%	MS1

Instruments/Methods (M)
MS1 - ICP-MS PE DRC II/SW-846 Method 6020
MS2 - ICP-MS PE NexION/SW-846 Method 6020
NA - Not Applicable

Form IIA-IN

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form IIA
Initial and Continuing Calibration Verification

Client: Tetra Tech
Task Order: 160115-1
Result Units: ug/L
Associated Analytical Batches: 20160211-A004

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Initial Calibration Source: See Raw Data
Continuing Calibration Source: See Raw Data

Case: 1116399
Project: 21431.01.001

	Continuing Calibration Verification								
Analyte	True	Found3	%Rec	Found4	%Rec	Found5	%Rec	Limit	M
%U235	-	-	-	-	-	-	-	-	-
Uranium Total	80.57748	78.2	97.0%	77.0	95.6%	78.9	97.9%	90%-110%	MS1
Uranium-234	-	-	-	-	-	-	-	-	-
Uranium-235	0.57312	0.548	95.6%	0.550	96.0%	0.547	95.5%	90%-110%	MS1
Uranium-236	-	-	-	-	-	-	-	-	-
Uranium-238	80	77.6	97.0%	76.5	95.6%	78.3	97.9%	90%-110%	MS1

Instruments/Methods (M)
MS1 - ICP-MS PE DRC II/SW-846 Method 6020
MS2 - ICP-MS PE NexION/SW-846 Method 6020
NA - Not Applicable

Form IIA-IN

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form IIA
Initial and Continuing Calibration Verification

Client: Tetra Tech
Task Order: 160115-1
Result Units: ug/L
Associated Analytical Batches: 20160211-A014

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Initial Calibration Source: See Raw Data
Continuing Calibration Source: See Raw Data

Case: 1116399
Project: 21431.01.001

	Initial Calibration Verification				Continuing Calibration Verification						
Analyte	True	Found	%Rec	Limit	True	Found1	%Rec	Found2	%Rec	Limit	M
%U235	-	-	-	-	-	-	-	-	-	-	-
Uranium Total	-	-	-	-	-	-	-	-	-	-	-
Uranium-234	0.1	0.0970	97.0%	90%-110%	0.1	0.0964	96.4%	0.0970	97.0%	90%-110%	MS2
Uranium-235	-	-	-	-	-	-	-	-	-	-	-
Uranium-236	-	-	-	-	-	-	-	-	-	-	-
Uranium-238	-	-	-	-	-	-	-	-	-	-	-

Instruments/Methods (M)
MS1 - ICP-MS PE DRC II/SW-846 Method 6020
MS2 - ICP-MS PE NexION/SW-846 Method 6020
NA - Not Applicable

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form IIA
Initial and Continuing Calibration Verification

Client: Tetra Tech
Task Order: 160115-1
Result Units: ug/L
Associated Analytical Batches: 20160211-A014

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Initial Calibration Source: See Raw Data
Continuing Calibration Source: See Raw Data

Case: 1116399
Project: 21431.01.001

	Continuing Calibration Verification				
Analyte	True	Found3	%Rec	Limit	M
%U235	-	-	-	-	-
Uranium Total	-	-	-	-	-
Uranium-234	0.1	0.0999	99.9%	90%-110%	MS2
Uranium-235	-	-	-	-	-
Uranium-236	-	-	-	-	-
Uranium-238	-	-	-	-	-

Instruments/Methods (M)
MS1 - ICP-MS PE DRC II/SW-846 Method 6020
MS2 - ICP-MS PE NexION/SW-846 Method 6020
NA - Not Applicable

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form IIA
Initial and Continuing Calibration Verification

Client: Tetra Tech
Task Order: 160115-1
Result Units: ug/L
Associated Analytical Batches: 20160211-A022

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Initial Calibration Source: See Raw Data
Continuing Calibration Source: See Raw Data

Case: 1116399
Project: 21431.01.001

	Initial Calibration Verification				Continuing Calibration Verification						
Analyte	True	Found	%Rec	Limit	True	Found1	%Rec	Found2	%Rec	Limit	M
%U235	-	-	-	-	-	-	-	-	-	-	-
Uranium Total	-	-	-	-	-	-	-	-	-	-	-
Uranium-234	-	-	-	-	-	-	-	-	-	-	-
Uranium-235	-	-	-	-	-	-	-	-	-	-	-
Uranium-236	20	19.4	96.8%	90%-110%	20	19.2	96.0%	19.5	97.5%	90%-110%	MS2
Uranium-238	-	-	-	-	-	-	-	-	-	-	-

Instruments/Methods (M)
MS1 - ICP-MS PE DRC II/SW-846 Method 6020
MS2 - ICP-MS PE NexION/SW-846 Method 6020
NA - Not Applicable

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form IIA
Initial and Continuing Calibration Verification

Client: Tetra Tech
Task Order: 160115-1
Result Units: ug/L
Associated Analytical Batches: 20160211-A022

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Initial Calibration Source: See Raw Data
Continuing Calibration Source: See Raw Data

Case: 1116399
Project: 21431.01.001

	Continuing Calibration Verification				
Analyte	True	Found3	%Rec	Limit	M
%U235	-	-	-	-	-
Uranium Total	-	-	-	-	-
Uranium-234	-	-	-	-	-
Uranium-235	-	-	-	-	-
Uranium-236	20	19.6	97.8%	90%-110%	MS2
Uranium-238	-	-	-	-	-

Instruments/Methods (M)

MS1 - ICP-MS PE DRC II/SW-846 Method 6020
MS2 - ICP-MS PE NexION/SW-846 Method 6020
NA - Not Applicable

Form IIA-IN

SOUTHWEST RESEARCH INSTITUTE

010008

Metals Report - Form IIB

Low Level Check Standard

Client: Tetra Tech
Task Order: 160115-1
Result Units: ug/L
Associated Analytical Batch: 20160211-A004

SDG: 588049
SRR: 56591, 56639, 56785, 56876

Case: 1116399
Project: 21431.01.001

	CRI/CRA Standards										
Analyte	True	Found1	%Rec	Found2	%Rec	Found3	%Rec	Found4	%Rec	Limit	M
%U235	-	-	-	-	-	-	-	-	-	-	NA
Uranium Total	0.04	0.0323	80.7%	-	-	0.0282	70.6%	-	-	50%-150%	MS1
Uranium-234	-	-	-	-	-	-	-	-	-	-	NA
Uranium-235	0.00495	-	-	0.00498	100.5%	-	-	0.00518	104.7%	50%-150%	MS1
Uranium-236	-	-	-	-	-	-	-	-	-	-	NA
Uranium-238	0.0397	0.0343	86.4%	-	-	0.0308	77.7%	-	-	50%-150%	MS1

Instruments/Methods (M)
MS1 - ICP-MS PE DRC II/SW-846 Method 6020
MS2 - ICP-MS PE NexION/SW-846 Method 6020
NA - Not Applicable

Form IIB-IN

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form IIB
Low Level Check Standard

Client: Tetra Tech
Task Order: 160115-1
Result Units: ug/L
Associated Analytical Batch: 20160211-A004

SDG: 588049
SRR: 56591, 56639, 56785, 56876

Case: 1116399
Project: 21431.01.001

	CRI/CRA Standards						
Analyte	True	Found5	%Rec	Found6	%Rec	Limit	M
%U235	-	-	-	-	-	-	NA
Uranium Total	0.04	0.0398	99.6%	-	-	50%-150%	MS1
Uranium-234	-	-	-	-	-	-	NA
Uranium-235	0.00495	-	-	0.00490	98.9%	50%-150%	MS1
Uranium-236	-	-	-	-	-	-	NA
Uranium-238	0.0397	0.0378	95.2%	-	-	50%-150%	MS1

Instruments/Methods (M)
MS1 - ICP-MS PE DRC II/SW-846 Method 6020
MS2 - ICP-MS PE NexION/SW-846 Method 6020
NA - Not Applicable

SOUTHWEST RESEARCH INSTITUTE

Metals Report - Form IIB

Low Level Check Standard

Client: Tetra Tech
Task Order: 160115-1
Result Units: ug/L
Associated Analytical Batch: 20160211-A014

SDG: 588049
SRR: 56591, 56639, 56785, 56876

Case: 1116399
Project: 21431.01.001

	CRI/CRA Standards						
Analyte	True	Found1	%Rec	Found2	%Rec	Limit	M
%U235	-	-	-	-	-	-	NA
Uranium Total	-	-	-	-	-	-	NA
Uranium-234	0.002	0.00214	107.2%	0.00181	90.4%	50%-150%	MS2
Uranium-235	-	-	-	-	-	-	NA
Uranium-236	-	-	-	-	-	-	NA
Uranium-238	-	-	-	-	-	-	NA

Instruments/Methods (M)
MS1 - ICP-MS PE DRC II/SW-846 Method 6020
MS2 - ICP-MS PE NexION/SW-846 Method 6020
NA - Not Applicable

Form IIB-IN

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form IIB
Low Level Check Standard

010011

Client: Tetra Tech
Task Order: 160115-1
Result Units: ug/L
Associated Analytical Batch: 20160211-A022

SDG: 588049
SRR: 56591, 56639, 56785, 56876

Case: 1116399
Project: 21431.01.001

	CRI/CRA Standards						
Analyte	True	Found1	%Rec	Found2	%Rec	Limit	M
%U235	-	-	-	-	-	-	NA
Uranium Total	-	-	-	-	-	-	NA
Uranium-234	-	-	-	-	-	-	NA
Uranium-235	-	-	-	-	-	-	NA
Uranium-236	0.01	0.00952	95.2%	0.00952	95.2%	50%-150%	MS2
Uranium-238	-	-	-	-	-	-	NA

Instruments/Methods (M)
MS1 - ICP-MS PE DRC II/SW-846 Method 6020
MS2 - ICP-MS PE NexION/SW-846 Method 6020
NA - Not Applicable

Form IIB-IN

SOUTHWEST RESEARCH INSTITUTE

Metals Report - Form III

Blanks

Client: Tetra Tech
Task Order: 160115-1
Preparation Blank Result Units: mg/Kg
Initial/Continuing Blank Result Units: ug/L

SDG: 588049
SRR: 56785, 56591, 56639, 56876
Preparation Blank Matrix: Soil, Solid
Associated Prep Batches: 20160126-P004

Case: 1116399
Project: 21431.01.001
Associated Analytical Batches: 20160211-A004

	Preparation Blank		Initial Calibration Blank		Continuing Calibration Blank										
Analyte	Result	Qual	Found	Qual	Found1	Qual	Found2	Qual	Found3	Qual	Found4	Qual	Found5	Qual	M
%U235	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Uranium Total	0.400	UD	0.0400	U	0.0400	U	0.0400	U	0.0400	U	0.0400	U	0.0400	U	MS1
Uranium-234	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Uranium-235	0.0495	UD	0.00500	U	0.00500	U	0.00500	U	0.00500	U	0.00500	U	0.00500	U	MS1
Uranium-236	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Uranium-238	0.397	UD	0.0400	U	0.0400	U	0.0400	U	0.0400	U	0.0400	U	0.0400	U	MS1

Data Reporting Qualifiers (Qual)	*Instruments/Methods (M)*
U - Result is less than the SwRI Reporting Limit (RL)	MS1 - ICP-MS PE DRC II/SW-846 Method 6020
N - Matrix spike and/or matrix spike duplicate criteria was not met	MS2 - ICP-MS PE NexION/SW-846 Method 6020
X - Analytical spike criteria was not met	NA - Not Applicable
E - Result is estimated due to interferences	
D - Result is reported from a dilution	
* - Duplicate criteria was not met	

SOUTHWEST RESEARCH INSTITUTE

Metals Report - Form III

Blanks

Client: Tetra Tech
Task Order: 160115-1
Preparation Blank Result Units: mg/Kg
Initial/Continuing Blank Result Units: ug/L

SDG: 588049
SRR: 56785, 56591, 56639, 56876
Preparation Blank Matrix: Soil, Solid
Associated Prep Batches: 20160126-P004

Case: 1116399
Project: 21431.01.001
Associated Analytical Batches: 20160211-A014

	Preparation Blank		Initial Calibration Blank		Continuing Calibration Blank						
Analyte	Result	Qual	Found	Qual	Found1	Qual	Found2	Qual	Found3	Qual	M
%U235	-		-	-	-	-	-	-	-	-	NA
Uranium Total	-		-	-	-	-	-	-	-	-	NA
Uranium-234	0.000400	UD	0.00200	U	0.00200	U	0.00200	U	0.00200	U	MS2
Uranium-235	-		-	-	-	-	-	-	-	-	NA
Uranium-236	-		-	-	-	-	-	-	-	-	NA
Uranium-238	-		-	-	-	-	-	-	-	-	NA

Data Reporting Qualifiers (Qual)	*Instruments/Methods (M)*
U - Result is less than the SwRI Reporting Limit (RL)	MS1 - ICP-MS PE DRC II/SW-846 Method 6020
N - Matrix spike and/or matrix spike duplicate criteria was not met	MS2 - ICP-MS PE NexION/SW-846 Method 6020
X - Analytical spike criteria was not met	NA - Not Applicable
E - Result is estimated due to interferences	
D - Result is reported from a dilution	
* - Duplicate criteria was not met	

SOUTHWEST RESEARCH INSTITUTE

Metals Report - Form III

Blanks

010014

Client: Tetra Tech
Task Order: 160115-1
Preparation Blank Result Units: mg/Kg
Initial/Continuing Blank Result Units: ug/L

SDG: 588049
SRR: 56785, 56591, 56639, 56876
Preparation Blank Matrix: Soil, Solid
Associated Prep Batches: 20160126-P004

Case: 1116399
Project: 21431.01.001
Associated Analytical Batches: 20160211-A022

	Preparation Blank		Initial Calibration Blank		Continuing Calibration Blank						
Analyte	Result	Qual	Found	Qual	Found1	Qual	Found2	Qual	Found3	Qual	M
%U235	-		-	-	-	-	-	-	-	-	NA
Uranium Total	-		-	-	-	-	-	-	-	-	NA
Uranium-234	-		-	-	-	-	-	-	-	-	NA
Uranium-235	-		-	-	-	-	-	-	-	-	NA
Uranium-236	0.00100	U	0.0100	U	0.0100	U	0.0100	U	0.0100	U	MS2
Uranium-238	-		-	-	-	-	-	-	-	-	NA

Data Reporting Qualifiers (Qual)	*Instruments/Methods (M)*
U - Result is less than the SwRI Reporting Limit (RL)	MS1 - ICP-MS PE DRC II/SW-846 Method 6020
N - Matrix spike and/or matrix spike duplicate criteria was not met	MS2 - ICP-MS PE NexION/SW-846 Method 6020
X - Analytical spike criteria was not met	NA - Not Applicable
E - Result is estimated due to interferences	
D - Result is reported from a dilution	
* - Duplicate criteria was not met	

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form IVB
ICP-MS Interference Check Sample

010015

Client: Tetra Tech
Task Order: 160115-1
Instrument: ICP-MS PE DRC II
Result Units: ug/L

SDG: 588049
SRR: 56785, 56591, 56639, 56876
ICSA Source: See Raw Data
ICSB Source: See Raw Data

Case: 1116399
Project: 21431.01.001
Analysis Date: 02/09/2016
Associated Analytical Batch: 20160211-A004

Analyte	True		Found				Limit	Limit
	Sol. ICSA	Sol. ICSAB	Sol. ICSA	%Rec	Sol. ICSAB	%Rec	ICSA	ICSAB
%U235	-	-	-	-	-	-	-	-
Uranium Total	0	29.59068	-0.00158	-	28.5	96.5%	-0.08 to 0.08	80%-120%
Uranium-234	-	-	-	-	-	-	-	-
Uranium-235	0	0.213	0.00166	-	0.205	96.4%	-0.01 to 0.01	80%-120%
Uranium-236	-	-	-	-	-	-	-	-
Uranium-238	0	29.376	-0.00401	-	28.3	96.5%	-0.08 to 0.08	80%-120%

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form IVB
ICP-MS Interference Check Sample

Client: Tetra Tech
Task Order: 160115-1
Instrument: ICP-MS PE NexION
Result Units: ug/L

SDG: 588049
SRR: 56785, 56591, 56639, 56876
ICSA Source: See Raw Data
ICSB Source: See Raw Data

Case: 1116399
Project: 21431.01.001
Analysis Date: 02/10/2016
Associated Analytical Batch: 20160211-A014

Analyte	True		Found				Limit	Limit
	Sol. ICSA	Sol. ICSAB	Sol. ICSA	%Rec	Sol. ICSAB	%Rec	ICSA	ICSAB
%U235	-	-	-	-	-	-	-	-
Uranium Total	-	-	-	-	-	-	-	-
Uranium-234	0	0.02	0.0000591	-	0.0195	97.6%	-0.004 to 0.004	80%-120%
Uranium-235	-	-	-	-	-	-	-	-
Uranium-236	-	-	-	-	-	-	-	-
Uranium-238	-	-	-	-	-	-	-	-

SOUTHWEST RESEARCH INSTITUTE

Metals Report - Form IVB

ICP-MS Interference Check Sample

Client: Tetra Tech
Task Order: 160115-1
Instrument: ICP-MS PE NexION
Result Units: ug/L

SDG: 588049
SRR: 56785, 56591, 56639, 56876
ICSA Source: See Raw Data
ICSB Source: See Raw Data

Case: 1116399
Project: 21431.01.001
Analysis Date: 02/10/2016
Associated Analytical Batch: 20160211-A022

Analyte	True		Found				Limit	Limit
	Sol. ICSA	Sol. ICSAB	Sol. ICSA	%Rec	Sol. ICSAB	%Rec	ICSA	ICSAB
%U235	-	-	-	-	-	-	-	-
Uranium Total	-	-	-	-	-	-	-	-
Uranium-234	-	-	-	-	-	-	-	-
Uranium-235	-	-	-	-	-	-	-	-
Uranium-236	0	20	-0.000320	-	19.3	96.5%	-0.02 to 0.02	80%-120%
Uranium-238	-	-	-	-	-	-	-	-

010018
Client Sample ID
A2-S1L

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form VIII
ICP-AES and ICP-MS Serial Dilutions

Client: Tetra Tech
Task Order: 160115-1
Lab ID: 588556L
Result Units: ug/L

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Matrix: Soil, Solid

Case: 1116399
Project: 21431.01.001

Analyte	Parent Sample Result	Qual	Serial Dilution Result	Qual	% Diff.	% Diff. Limit	M	Note	DF	Prep Batch	Analysis Date/Time
%U235	-	-	-	-	-	-	NA		-	-	-
Uranium Total	46.0	D	49.6	D	7.69%	10%	MS1		500	20160126-P004	02/09/2016 15:28
Uranium-234	0.0247	D	0.0252	D	2.09%	-	MS2	#	50	20160126-P004	02/10/2016 12:25
Uranium-235	0.332	D	0.348	D	4.60%	10%	MS1		500	20160126-P004	02/09/2016 15:28
Uranium-236	0.0100	U	0.0500	UD	-	-	MS2	#	5	20160126-P004	02/10/2016 16:34
Uranium-238	45.7	D	49.2	D	7.69%	10%	MS1		500	20160126-P004	02/09/2016 15:28

# Indicates that the parent sample result is less than 50 times the RL, therefore no percent difference limit is applicable.

Data Reporting Qualifiers (Qual)	*Instruments/Methods (M)*
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL)	MS1 - ICP-MS PE DRC II/SW-846 Method 6020
U - Result is less than the SwRI Reporting Limit (RL))	MS2 - ICP-MS PE NexION/SW-846 Method 6020
N - Matrix spike and/or matrix spike duplicate criteria was not met	NA - Not Applicable
X - Analytical spike criteria was not met	
E - Result is estimated due to interferences	
D - Result is reported from a dilution	
* - Duplicate criteria was not met	

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form IX
Detection Limits

Client: Tetra Tech
Task Order: 160115-1
Result Units: ug/L

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Instrument: ICP-MS PE DRC II

Case: 1116399
Project: 21431.01.001

Analyte	Mass	RL
Uranium Total	NA	0.0400
Uranium-235	235	0.00500
Uranium-238	238	0.0400

Columns	
RL	- SwRI Reporting Limit

SOUTHWEST RESEARCH INSTITUTE

Metals Report - Form IX

Detection Limits

Client: Tetra Tech
Task Order: 160115-1
Result Units: ug/L

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Instrument: ICP-MS PE NexION

Case: 1116399
Project: 21431.01.001

Analyte	Mass	RL
Uranium-234	234	0.00200
Uranium-236	236	0.0100

Columns	
RL	- SwRI Reporting Limit

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form XI
ICP-MS Internal Standard Association

Client: Tetra Tech
Task Order: 160115-1
Analytical Batch: 20160211-A004
Analysis Method: SW-846 Method 6020

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Instrument: ICP-MS PE DRC II

Case: 1116399
Project: 21431.01.001
Start Date/Time: 02/09/2016 14:33:37
End Date/Time: 02/09/2016 16:29:59

Analyte	Assoc.Internal Standard
Uranium Total	U233
Uranium-235	U233
Uranium-238	U233

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form XI
ICP-MS Internal Standard Association

010022

Client: Tetra Tech
Task Order: 160115-1
Analytical Batch: 20160211-A014
Analysis Method: SW-846 Method 6020

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Instrument: ICP-MS PE NexION

Case: 1116399
Project: 21431.01.001
Start Date/Time: 02/10/2016 11:10:56
End Date/Time: 02/10/2016 12:39:41

Analyte	Assoc.Internal Standard
Uranium-234	U233

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form XI

010023

ICP-MS Internal Standard Association

Client: Tetra Tech
Task Order: 160115-1
Analytical Batch: 20160211-A022
Analysis Method: SW-846 Method 6020

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Instrument: ICP-MS PE NexION

Case: 1116399
Project: 21431.01.001
Start Date/Time: 02/10/2016 15:52:43
End Date/Time: 02/10/2016 17:03:42

Analyte	Assoc.Internal Standard
Uranium-236	233

SOUTHWEST RESEARCH INSTITUTE

010024

Metals Report - Form XII

Analysis Run Log

Client: Tetra Tech
Task Order: 160115-1
Analytical Batch: 20160211-A004
Analysis Method: SW-846 Method 6020

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Instrument: ICP-MS PE DRC II

Case: 1116399
Project: 21431.01.001
Start Date: 02/09/2016
End Date: 02/09/2016

Lab Sample ID	Client Sample ID	Time	DF	%U	Tot	234	235	236	U
S-0	S-0	14:33	1		X		X		X
S-1	S-1	14:35	1		X		X		X
ICV	ICV	14:38	1		X		X		X
ICB	ICB	14:40	1		X		X		X
CRI238	CRI238	14:42	1		X				X
CRI235	CRI235	14:45	1				X		
ZZZ	ZZZ	14:47	1						
ICSA	ICSA	14:50	1		X		X		X
ICSAB	ICSAB	14:53	1		X		X		X
ZZZ	ZZZ	14:55	1						
CCV	CCV	14:57	1		X		X		X
CCB	CCB	15:00	1		X		X		X
PB16A26KE3	NA	15:02	100						
LCS16A26KE5	NA	15:04	100						
LCS16A26KE7	NA	15:07	100						
LCS16A26KE8	NA	15:09	100						
CCV	CCV	15:12	1		X		X		X
CCB	CCB	15:14	1		X		X		X
590214TF	A2-AC-21	15:16	1000		X		X		X
588049TF	1D7-84-85	15:19	100		X		X		X
588556TF	A2-S1	15:23	100		X		X		X
588556TFD	A2-S1D	15:26	100		X		X		X
588556TFL	A2-S1L	15:28	500		X		X		X
588556TFAS	A2-S1AS	15:30	100						
590212TF	A1-AC-1	15:33	100		X		X		X
590213TF	A1-AC-3	15:35	100		X		X		X
591000TF	WL-234CT	15:38	100		X		X		X
CCV	CCV	15:43	1		X		X		X
CCB	CCB	15:45	1		X		X		X
PB16A26KE3	NA	15:48	100		X		X		X
LCS16A26KE5	NA	15:50	100		X		X		X
LCS16A26KE7	NA	15:52	100		X				
LCS16A26KE8	NA	15:55	100		X				
CRI238	CRI238	15:59	1		X				X
CRI235	CRI235	16:02	1				X		
CCV	CCV	16:04	1		X		X		X
CCB	CCB	16:06	1		X		X		X
588556TFMS	A2-S1MS	16:20	100		X		X		X
CRI238	CRI238	16:22	1		X				X
CRI235	CRI235	16:25	1				X		
CCV	CCV	16:27	1		X		X		X
CCB	CCB	16:29	1		X		X		X

SOUTHWEST RESEARCH INSTITUTE

Metals Report - Form XII

Analysis Run Log

010025

Client: Tetra Tech
Task Order: 160115-1
Analytical Batch: 20160211-A014
Analysis Method: SW-846 Method 6020

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Instrument: ICP-MS PE NexION

Case: 1116399
Project: 21431.01.001
Start Date: 02/10/2016
End Date: 02/10/2016

Lab Sample ID	Client Sample ID	Time	DF	%U	Tot	234	235	236	U
S-0	S-0	11:10	1			X			
S-234	S-234	11:13	1			X			
ICV	ICV	11:15	1			X			
ICB	ICB	11:18	1			X			
CRI234	CRI234	11:20	1			X			
ICSA	ICSA	11:23	1			X			
ICSAB	ICSAB	11:25	1			X			
ZZZ	ZZZ	11:28	1						
CCV	CCV	11:30	1			X			
CCB	CCB	11:32	1			X			
590214TF	A2-AC-21	11:35	50			X			
588049TF	1D7-84-85	11:37	10			X			
588556TF	A2-S1	11:40	10			X			
590212TF	A1-AC-1	11:42	10			X			
590213TF	A1-AC-3	11:45	5			X			
591000TF	WL-234CT	11:47	2			X			
CCV	CCV	11:49	1			X			
CCB	CCB	11:52	1			X			
PB16A26KE3	NA	12:12	2			X			
LCS16A26KE5	NA	12:15	1			X			
LCS16A26KE7	NA	12:17	100						
LCS16A26KE8	NA	12:20	100						
588556TFD	A2-S1D	12:22	10			X			
588556TFL	A2-S1L	12:25	50			X			
588556TFMS5	A2-S1MS	12:27	10			X			
588556TFAS	A2-S1AS	12:29	10						
ZZZ	ZZZ	12:32	1						
CRI234	CRI234	12:34	1			X			
CCV	CCV	12:37	1			X			
CCB	CCB	12:39	1			X			

SOUTHWEST RESEARCH INSTITUTE

Metals Report - Form XII

Analysis Run Log

010026

Client: Tetra Tech
Task Order: 160115-1
Analytical Batch: 20160211-A022
Analysis Method: SW-846 Method 6020

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Instrument: ICP-MS PE NexION

Case: 1116399
Project: 21431.01.001
Start Date: 02/10/2016
End Date: 02/10/2016

Lab Sample ID	Client Sample ID	Time	DF	%U	Tot	234	235	236	U
S-0	S-0	15:52	1					X	
S-1	S-1	15:55	1					X	
ICV	ICV	15:57	1					X	
ICB	ICB	15:59	1					X	
CRI236	CRI236	16:02	1					X	
ICSA	ICSA	16:04	1					X	
ICSAB	ICSAB	16:07	1					X	
ZZZ	ZZZ	16:09	1						
CCV	CCV	16:11	1					X	
CCB	CCB	16:14	1					X	
PB16A26KE3	NA	16:17	1					X	
LCS16A26KE6	NA	16:20	1					X	
LCS16A26KE7	NA	16:22	100						
LCS16A26KE8	NA	16:25	100						
588049TF	1D7-84-85	16:27	1					X	
588556TF	A2-S1	16:29	1					X	
588556TFD	A2-S1D	16:32	1					X	
588556TFL	A2-S1L	16:34	5					X	
588556TFMS6	A2-S1MS	16:37	1					X	
588556TFAS	A2-S1AS	16:39	1						
CCV	CCV	16:41	1					X	
CCB	CCB	16:44	1					X	
590212TF	A1-AC-1	16:46	1					X	
590213TF	A1-AC-3	16:49	1					X	
590214TF	A2-AC-21	16:51	1					X	
591000TF	WL-234CT	16:53	1					X	
ZZZ	ZZZ	16:56	1						
CRI236	CRI236	16:58	1					X	
CCV	CCV	17:01	1					X	
CCB	CCB	17:03	1					X	

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form XIV

010027

Internal Standards Relative Intensity Summary

Client: Tetra Tech
Task Order: 160115-1
Analytical Batch: 20160211-A014
Analysis Method: SW-846 Method 6020

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Instrument: ICP-MS PE NexION

Case: 1116399
Project: 21431.01.001
Start Date: 02/10/2016
End Date: 02/10/2016

Lab Sample ID	Client Sample ID	Time	DF	U233
S-0	S-0	11:10	1	-
S-234	S-234	11:13	1	-
ICV	ICV	11:15	1	102
ICB	ICB	11:18	1	98.2
CRI234	CRI234	11:20	1	96.9
ICSA	ICSA	11:23	1	82.5
ICSAB	ICSAB	11:25	1	82.2
ZZZ	ZZZ	11:28	1	96.4
CCV	CCV	11:30	1	98.9
CCB	CCB	11:32	1	97.6
590214TF	A2-AC-21	11:35	50	99.7
588049TF	1D7-84-85	11:37	10	97.2
588556TF	A2-S1	11:40	10	96.0
590212TF	A1-AC-1	11:42	10	96.1
590213TF	A1-AC-3	11:45	5	91.1
591000TF	WL-234CT	11:47	2	96.0
CCV	CCV	11:49	1	106
CCB	CCB	11:52	1	98.0
PB16A26KE3	NA	12:12	2	97.9
LCS16A26KE5	NA	12:15	1	98.8
LCS16A26KE7	NA	12:17	100	-
LCS16A26KE8	NA	12:20	100	-
588556TFD	A2-S1D	12:22	10	93.8
588556TFL	A2-S1L	12:25	50	95.0
588556TFMS5	A2-S1MS	12:27	10	95.0
588556TFAS	A2-S1AS	12:29	10	-
ZZZ	ZZZ	12:32	1	99.0
CRI234	CRI234	12:34	1	95.9
CCV	CCV	12:37	1	101
CCB	CCB	12:39	1	98.7

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form XIV
Internal Standards Relative Intensity Summary

Client: Tetra Tech
Task Order: 160115-1
Analytical Batch: 20160211-A022
Analysis Method: SW-846 Method 6020

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Instrument: ICP-MS PE NexION

Case: 1116399
Project: 21431.01.001
Start Date: 02/10/2016
End Date: 02/10/2016

Lab Sample ID	Client Sample ID	Time	DF	233
S-0	S-0	15:52	1	-
S-1	S-1	15:55	1	-
ICV	ICV	15:57	1	98.4
ICB	ICB	15:59	1	99.2
CRI236	CRI236	16:02	1	97.2
ICSA	ICSA	16:04	1	81.3
ICSAB	ICSAB	16:07	1	82.8
ZZZ	ZZZ	16:09	1	93.8
CCV	CCV	16:11	1	93.5
CCB	CCB	16:14	1	93.8
PB16A26KE3	NA	16:17	1	94.5
LCS16A26KE6	NA	16:20	1	96.0
LCS16A26KE7	NA	16:22	100	-
LCS16A26KE8	NA	16:25	100	-
588049TF	1D7-84-85	16:27	1	70.2
588556TF	A2-S1	16:29	1	63.5
588556TFD	A2-S1D	16:32	1	64.8
588556TFL	A2-S1L	16:34	5	88.7
588556TFMS6	A2-S1MS	16:37	1	63.4
588556TFAS	A2-S1AS	16:39	1	-
CCV	CCV	16:41	1	95.5
CCB	CCB	16:44	1	94.9
590212TF	A1-AC-1	16:46	1	82.4
590213TF	A1-AC-3	16:49	1	70.3
590214TF	A2-AC-21	16:51	1	76.4
591000TF	WL-234CT	16:53	1	84.6
ZZZ	ZZZ	16:56	1	108
CRI236	CRI236	16:58	1	108
CCV	CCV	17:01	1	109
CCB	CCB	17:03	1	110

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form XIV
Internal Standards Relative Intensity Summary

Client: Tetra Tech
Task Order: 160115-1
Analytical Batch: 20160211-A004
Analysis Method: SW-846 Method 6020

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Instrument: ICP-MS PE DRC II

Case: 1116399
Project: 21431.01.001
Start Date: 02/09/2016
End Date: 02/09/2016

Lab Sample ID	Client Sample ID	Time	DF	U233
S-0	S-0	14:33	1	-
S-1	S-1	14:35	1	-
ICV	ICV	14:38	1	99.1
ICB	ICB	14:40	1	100
CRI238	CRI238	14:42	1	108
CRI235	CRI235	14:45	1	110
ZZZ	ZZZ	14:47	1	106
ICSA	ICSA	14:50	1	97.5
ICSAB	ICSAB	14:53	1	99.1
ZZZ	ZZZ	14:55	1	103
CCV	CCV	14:57	1	102
CCB	CCB	15:00	1	102
PB16A26KE3	NA	15:02	100	-
LCS16A26KE5	NA	15:04	100	-
LCS16A26KE7	NA	15:07	100	-
LCS16A26KE8	NA	15:09	100	-
CCV	CCV	15:12	1	97.4
CCB	CCB	15:14	1	101
590214TF	A2-AC-21	15:16	1000	98.5
588049TF	1D7-84-85	15:19	100	97.0
588556TF	A2-S1	15:23	100	96.9
588556TFD	A2-S1D	15:26	100	97.1
588556TFL	A2-S1L	15:28	500	94.0
588556TFAS	A2-S1AS	15:30	100	-
590212TF	A1-AC-1	15:33	100	96.6
590213TF	A1-AC-3	15:35	100	93.2
591000TF	WL-234CT	15:38	100	96.1
CCV	CCV	15:43	1	102
CCB	CCB	15:45	1	99.4
PB16A26KE3	NA	15:48	100	94.6
LCS16A26KE5	NA	15:50	100	97.2
LCS16A26KE7	NA	15:52	100	99.3
LCS16A26KE8	NA	15:55	100	99.6
CRI238	CRI238	15:59	1	111
CRI235	CRI235	16:02	1	110
CCV	CCV	16:04	1	104
CCB	CCB	16:06	1	99.0
588556TFMS	A2-S1MS	16:20	100	98.3
CRI238	CRI238	16:22	1	93.9
CRI235	CRI235	16:25	1	101
CCV	CCV	16:27	1	100
CCB	CCB	16:29	1	99.4

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form XVII
Linear Ranges

Client: Tetra Tech
Task Order: 160115-1
Result Units: ug/L

SDG: 588049
SRR: 56785, 56591, 56639, 56876
Instrument: ICP-MS PE DRC II

Case: 1116399
Project: 21431.01.001
Date: 02/09/2016

Analyte	Upper Calibration Limit
Uranium Total	102.7454
Uranium-235	0.74
Uranium-238	102

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form XVII
Linear Ranges

Client: Tetra Tech
Task Order: 160115-1
Result Units: ug/L

SDG: 588049
SRR: 56785, 56591, 56639, 56876
Instrument: ICP-MS PE NexION

Case: 1116399
Project: 21431.01.001
Date: 02/10/2016

Analyte	Upper Calibration Limit
Uranium-234	0.1
Uranium-236	20

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form XVIII
Preparation/Digestion Summary

Client: Tetra Tech
Task Order: 160115-1

SDG: 588049
SRR: 56785, 56591, 56639, 56876

Case: 1116399
Project: 21431.01.001

Prep Batch	Method	Preparation Date
20160126-P004	Teflon Beaker	01/26/2016

Digestion Log

010033

Southwest Research Institute
San Antonio, Texas 78228

Batch: 20160126-P004 (Ver. 2)
Status: APPROVED

Client(s): Tetra Tech
Task Order(s): 160115-1
SDG(s): 588049
Project(s): 21431.01.001
Method(s): Teflon Beaker (TAP: 01-0406-150/008)
Matrix(s): Soil, Solid
Intrument(s): ICP, ICP-MS
Reagent(s): HNO3 62999, HClO4 54738, HCl 65771, HF 63016
Balance(s): Balance#88
Pipette(s): 1000-3, 200-1
Heating Device: HP #2, #5 Temperature (C): 95-200
Time In: 01/26/2016 17:10:36 Time Out: NA
Location: S18-B10

☢ Rad Samples Present

Sample Identification	Client Identification	Weight (g)	Final Volume (mL)
PB16A26KE3	NA	0.50000	50.00
LCS16A26KE3 *	NA	0.50000	50.00
LCS16A26KE4 **	NA	0.50000	50.00
LCS16A26KE5 ***	NA	0.50000	50.00
LCS16A26KE6 ****	NA	0.50000	50.00
LCS16A26KE7 *****	NA	0.10080	50.00
LCS16A26KE8 ******	NA	0.10790	50.00
588049tf	1D7-84-85	1.01030	100.00
588556tf	A2-S1	1.00150	100.00
588556tfD	A2-S1	1.02970	100.00
588556tfMS3 *******	A2-S1	1.01660	100.00
588556tfMS4 **	A2-S1	1.06690	100.00
588556tfMS5 ***	A2-S1	1.01240	100.00
588556tfMS6 ****	A2-S1	1.01800	100.00
590212tf	A1-AC-1	1.06220	100.00
590213tf	A1-AC-3	1.06710	100.00
590214tf	A2-AC-21	1.06540	100.00
591000tf	WL-234CT	1.01090	100.00

Prepared by: EDRISI, KHALED Date: 01/26/2016

Reviewed by: SEILER, NICHOLLE Date: 02/09/2016

Disposal Int/Date/Loc: _____

Program version(8/11/2011)

Digestion Log

010034

Southwest Research Institute
San Antonio, Texas 78228

Batch: 20160126-P004 (Ver. 2)
Status: APPROVED

☢ Rad Samples Present

Client(s): Tetra Tech
Task Order(s): 160115-1
SDG(s): 588049
Project(s): 21431.01.001
Method(s): Teflon Beaker (TAP: 01-0406-150/008)
Matrix(s): Soil, Solid
Intrument(s): ICP, ICP-MS
Reagent(s): HNO3 62999, HClO4 54738, HCl 65771, HF 63016
Balance(s): Balance#88
Pipette(s): 1000-3, 200-1
Heating Device: HP #2, #5 Temperature (C): 95-200
Time In: 01/26/2016 17:10:36 Time Out: NA
Location: S18-B10

Sample Identification	Client Identification	Weight (g)	Final Volume (mL)

* spiked 0.2 mL of Instrument Calibration Standard 1-58932 (ChemInv# 12-56YPY, Source: Spex Certiprep, Exp: 06/30/2016) and 0.1 mL of Phosphorus-60421 (ChemInv# J2-P02062, Source: Inorganic Ventures, Exp: 04/23/2018) and 1.0 mL of Spike Sample Standard I-60136 (ChemInv# 12-62YPX, Source: Spex Certiprep, Exp: 07/30/2016) and 0.1 mL of Sulfur-61569 (ChemInv# J2-S02028, Source: Inorganic Ventures, Exp: 09/22/2016)

** spiked 0.125 mL of CCS-1-55933 (ChemInv# G2-MEB468086, Source: Inorganic Ventures, Exp: 02/26/2016) and 0.125 mL of CCS-2-55934 (ChemInv# G2-MEB500143, Source: Inorganic Ventures, Exp: 02/26/2016) and 0.125 mL of CCS-4-55936 (ChemInv# H2-MEB550029, Source: Inorganic Ventures, Exp: 02/26/2016) and 0.125 mL of CCS-5-55937 (ChemInv# H2-MEB556118, Source: Inorganic Ventures, Exp: 02/26/2016) and 0.125 mL of CCS-6-55938 (ChemInv# H2-MEB526142, Source: Inorganic Ventures, Exp: 02/26/2016) and 0.125 mL of Tellurium-55935 (ChemInv# H2-TE01117R, Source: Inorganic Ventures, Exp: 02/26/2016)

*** spiked 0.1 mL of Nat.U. 106RadSol3 47552 (ChemInv# 1705-8, Source: Eckert&Ziegler Isoto, Exp: 04/07/2016)

**** spiked 0.1 mL of Uranium-236 098RadSol3-47222 (ChemInv# 47222, Source: UNDEFINED, Exp: 07/13/2015)

***** spiked 0.1008 g of SRM 278 - 36005 (ChemInv# Obisdian 278, Source: NIST SRM-278, Exp: 04/11/2022)

****** spiked 0.1079 g of SRM 688 - 34847 (ChemInv# 688, Source: NIST SRM-688, Exp: 12/04/2020)

******* spiked 0.2 mL of Instrument Calibration Standard 1-58932 (ChemInv# 12-56YPY, Source: Spex Certiprep, Exp: 06/30/2016) and 0.1 mL of Phosphorus-60421 (ChemInv# J2-P02062, Source: Inorganic Ventures, Exp: 04/23/2018) and 0.5 mL of Spike Sample Standard I-60136 (ChemInv# 12-62YPX, Source: Spex Certiprep, Exp: 07/30/2016) and 0.1 mL of Sulfur-61569 (ChemInv# J2-S02028, Source: Inorganic Ventures, Exp: 09/22/2016)

Comments:
bk 15-0406-046 pg 77

Add 10mL each hno3, hclo4, and hf, heat to dryness, add 2.5mL of each, heat to dryness, add 5mL di water, 2.5mL hno3 and 2.5mL hcl, heat and transferred to a ct, centrifuged at 2300rpm for 40min, transferred solutions into another ct.
transferred residue back to the Teflon beaker, add 5ml of each hno3 and hclo4 and 10mL hf, heat to dryness, and add 5mL of each hno3 hclo4 and hf heat to dryness, add 5mL di water, 2.5mL hno3 and 2.5mL hcl, heat and transferred to a ct, centrifuged for 30 min at 2300rpm, saved residue
Combined all fractions, fv 100mL.

Prepared by: EDRISI, KHALED Date: 01/26/2016

Reviewed by: SEILER, NICHOLLE Date: 02/09/2016

Disposal Int/Date/Loc:

Program version(8/11/2011)

010035

SOUTHWEST RESEARCH INSTITUTE

☐ 200.8 TAP No. 01-0406-107 Rev 8/May 15

☑ 6020 TAP No. 01-0406-046 Rev18/May 15

☐ 6020a TAP No. 01-0406-046 Rev18/May 15

☐ TAP No. 01-0406-148 Rev 4/May 15

☐ Other_____

ICP-MS CALIB. STD. ID's

S0 12-19-1
STD. 1 12-19-3
I. STD 12-8-8
I. STD ——

QC STD. ID's

ICV/CCV 12-19-2
UCL ——
CRI 12-19-6,7
ICSA 12-19-8
ICSAB 12-19-10

ANALYSIS

U_{tot}, U_{238}, U_{235}

IDL Date: 01/08/2016
STD's IV, CCS 1-6 expire 11/13/16
STD's Spex, ME 1-4 expire 8/30/16

PROJECT#	CLIENT	TO#	DATE	MATRIX	LOGBK PG
21431.01.001	TETRA TECH	160115-1	2/9/16	Solid, T.B.	20160126-P004

INSTRUMENT: DRCII FILENAME: 160209

Analyst: _____ Date: 2/9/16 ☐ CONVERTED (.DAT)

Analytical Batch: 20160211A004

010036

S-0	2/9/2016 14:33	C:\Elandata\Method\swri\tot u-233 is.mth	Standard #1	S-0.302
S-1	2/9/2016 14:35	C:\Elandata\Method\swri\tot u-233 is.mth	Standard #2	S-1.303
icv	2/9/2016 14:38	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	icv.304
icb	2/9/2016 14:40	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	icb.305
cri238	2/9/2016 14:42	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	cri238.306
cri235	2/9/2016 14:45	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	cri235.307
zzz	2/9/2016 14:47	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	zzz.308
icsa	2/9/2016 14:50	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	icsa.309
icsab	2/9/2016 14:53	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	icsab.310
zzz	2/9/2016 14:55	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	zzz.311
ccv	2/9/2016 14:57	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	ccv.312
ccb	2/9/2016 15:00	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	ccb.313
PB16A26KE3 DF100	2/9/2016 15:02	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	PB16A26KE3 DF100.314
LCS16A26KE5 DF100	2/9/2016 15:04	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	LCS16A26KE5 DF100.315
LCS16A26KE7 DF100	2/9/2016 15:07	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	LCS16A26KE7 DF100.316
LCS16A26KE8 DF100	2/9/2016 15:09	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	LCS16A26KE8 DF100.317
ccv	2/9/2016 15:12	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	ccv.318
ccb	2/9/2016 15:14	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	ccb.319
590214tf df1000	2/9/2016 15:16	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	590214tf df1000.320
588049tf DF100	2/9/2016 15:19	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	588049tf DF100.321
588556tf df100	2/9/2016 15:23	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	588556tf df100.322
588556tfD df100	2/9/2016 15:26	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	588556tfD df100.323
588556tfL df500	2/9/2016 15:28	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	588556tfL df500.324
588556tfAS df100	2/9/2016 15:30	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	588556tfAS df100.325
590212tf df100	2/9/2016 15:33	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	590212tf df100.326
590213tf df100	2/9/2016 15:35	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	590213tf df100.327
591000tf df100	2/9/2016 15:38	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	591000tf df100.328
ccv	2/9/2016 15:43	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	ccv.329
ccb	2/9/2016 15:45	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	ccb.330
PB16A26KE3 DF100	2/9/2016 15:48	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	PB16A26KE3 DF100.331
LCS16A26KE5 DF100	2/9/2016 15:50	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	LCS16A26KE5 DF100.332
LCS16A26KE7 DF100	2/9/2016 15:52	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	LCS16A26KE7 DF100.333
LCS16A26KE8 DF100	2/9/2016 15:55	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	LCS16A26KE8 DF100.334
cri238	2/9/2016 15:59	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	cri238.335
cri235	2/9/2016 16:02	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	cri235.336
ccv	2/9/2016 16:04	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	ccv.337
ccb	2/9/2016 16:06	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	ccb.338
588556tfMS5 df100	2/9/2016 16:20	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	588556tfMS5 df100.339
cri238	2/9/2016 16:22	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	cri238.340
cri235	2/9/2016 16:25	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	cri235.341
ccv	2/9/2016 16:27	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	ccv.342
ccb	2/9/2016 16:29	C:\Elandata\Method\swri\tot u-233 is.mth	Sample	ccb.343

SWRI

2/9/14

Spiked 72uL df10 #514453 (11-201-4) IN 5mL

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Daily Performance Report

Sample ID: Daily Performance Check
Sample Date/Time: Tuesday, February 09, 2016 09:54:30
Sample Description:
Method File: C:\Elandata\Method\Daily Performance_ns.mth
Dataset File:
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Dual Detector Mode: Pulse
Acq. Dead Time(ns): 45
Current Dead Time (ns): 45

M Seiler 2/9/16 NS

Summary

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Net Intens. SD	Net Intens. RSD
	Mg	24.0	7333.4	7333.353	61.120	0.8
	In	114.9	21074.4	21074.434	81.328	0.4
	U	238.1	9358.5	9358.540	61.734	0.7
⌈>	Ce	139.9	17443.8	17443.816	94.352	0.5
⌊	CeO	155.9	528.9	0.030	0.001	3.8
⌈>	Ba	137.9	141680.3	141680.255	608.963	0.4
⌊	Ba++	69.0	5820.5	0.041	0.001	1.8
	Bkgd	220.0	0.8	0.767	0.253	33.0
	Bkgd	8.5	17.9	17.933	0.805	4.5

Current Optimization File Data

Current Value	Description
1.02	Nebulizer Gas Flow [NEB]
1.20	Auxiliary Gas Flow
15.00	Plasma Gas Flow
8.25	Lens Voltage
1250.00	ICP RF Power
-1600.00	Analog Stage Voltage
1000.00	Pulse Stage Voltage
-11.00	Quadrupole Rod Offset Std [QRO]
-10.00	Cell Rod Offset Std [CRO]
20.00	Discriminator Threshold
-16.00	Cell Path Voltage Std [CPV]
0.00	RPa
0.88	RPq
1.02	DRC Mode NEB
-7.50	DRC Mode QRO
-2.00	DRC Mode CRO
-15.00	DRC Mode CPV
0.00	Cell Gas A
0.00	Cell Gas B

2/31/16

Current Autolens Data

Analyte	Mass	Num of Pts	DAC Value	Maximum Intensity
Be	9	45	7.0	764.0
Co	59	45	7.5	11237.7
In	115	45	8.8	20577.0

Southwest Research Institute

	U	238	45	11.3	9208.8

Southwest Research Institute: Instrument Mass Calibration Report

File Name: Default.tun
File Path: C:\Elandata\Tuning\Default.tun

Sample ID: Daily Performance Check
Sample Acquistion Date/Time: Tuesday, February 09, 2016 09:54:30
Method File: C:\Elandata\Method\Daily Performance_ns.mth
Dataset File:
Dual Detector Mode: Pulse
Acq. Dead Time(ns): 45
Current Dead Time (ns): 45

NBeiler 2/9/16

Analyte	Exact Mass	Meas. Mass	Mass DAC	Res. DAC	Meas. Pk. Width
Mg	23.985	24.025	5688	2093	0.710
Ar2	75.930	75.925	18321	2140	0.701
In	114.904	114.925	27802	2169	0.697
Ce	139.905	139.925	33897	2180	0.689
Pb	207.977	207.975	50469	2240	0.691
Th	232.038	232.125	56345	2261	0.743

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: S-0

Sample Date/Time: Tuesday, February 09, 2016 14:33:37
Solution Type: Standard
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\S-0.302
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	4	62.984	0.000	
	U	235	5	0.000	0.000	
	236	236	2	91.652	0.000	
	U	238	69	11.123	0.000	
	U 232	232	2	89.214	0.000	
⌈	U-tot	238	313	1.758	0.000	
|	U-238a	238	69	11.123	0.000	
|	U-235a	235	5	0.000	0.000	
⌊>	U233	233	1813	1.736	0.000	
	U 233-IS	233	1813	1.736	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	3.667				ng/L
	U	235	5.000				ng/L
	236	236	1.667				ng/L
	U	238	68.667				ng/L
	U 232	232	2.333				ng/L
⌈	U-tot	238	0.173				ng/L
|	U-238a	238	0.038				ng/L
|	U-235a	235	0.003				ng/L
⌊>	U233	233	1813.148				ng/L
	U 233-IS	233	1813.148	**100.000**	1.74	1.7	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: S-1

Sample Date/Time: Tuesday, February 09, 2016 14:35:55
Solution Type: Standard
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\S-1.303
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	48	16.851	0.000	
	U	235	6004	0.742	0.000	
	236	236	2	49.487	0.000	
	U	238	801527	0.062	0.000	
	U 232	232	4	48.038	0.000	
⌈	U-tot	238	807815	0.056	0.000	
|	U-238a	238	801527	0.062	0.000	
|	U-235a	235	6004	0.742	0.000	
⌊>	U233	233	1773	1.957	0.000	
	U 233-IS	233	1773	1.957	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	48.333				ng/L
	U	235	6004.289				ng/L
	236	236	2.333				ng/L
	U	238	801526.580				ng/L
	U 232	232	4.333				ng/L
⌈	U-tot	238	455.703	**102745.400**	2046.75	2.0	ng/L
|	U-238a	238	452.155	**102000.000**	2036.62	2.0	ng/L
|	U-235a	235	3.387	**740.000**	10.91	1.5	ng/L
⌊>	U233	233	1773.142				ng/L
	U 233-IS	233	1773.142	**97.794**	1.91	2.0	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: icv

Sample Date/Time: Tuesday, February 09, 2016 14:38:13
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\icv.304
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	40	8.660	0.000	
	U	235	4679	2.416	0.000	
	236	236	3	62.450	0.000	
	U	238	632659	0.341	0.000	
	U 232	232	2	50.000	0.000	
⌈	U-tot	238	637614	0.356	0.000	
|	U-238a	238	632659	0.341	0.000	
|	U-235a	235	4679	2.416	0.000	
⌊>	U233	233	1796	3.036	0.000	
	U 233-IS	233	1796	3.036	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	40.000				ng/L
	U	235	4678.652				ng/L
	236	236	3.333				ng/L
	U	238	632659.130				ng/L
	U 232	232	2.000				ng/L
⌈	U-tot	238	355.144	**80064.318**	2473.40	3.1	ng/L
|	U-238a	238	352.384	**79491.130**	2449.92	3.1	ng/L
|	U-235a	235	2.606	**569.299**	24.57	4.3	ng/L
⌊>	U233	233	1796.479				ng/L
	U 233-IS	233	1796.479	**99.081**	3.01	3.0	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: icb

Sample Date/Time: Tuesday, February 09, 2016 14:40:32
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\icb.305
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	5	10.825	0.000	
	U	235	7	60.622	0.000	
	236	236	1	100.000	0.000	
	U	238	97	20.228	0.000	
	U 232	232	4	68.635	0.000	
⌈	U-tot	238	345	6.905	0.000	
|	U-238a	238	97	20.228	0.000	
|	U-235a	235	7	60.622	0.000	
⌊>	U233	233	1817	1.298	0.000	
	U 233-IS	233	1817	1.298	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	5.333				ng/L
	U	235	6.667				ng/L
	236	236	1.000				ng/L
	U	238	96.667				ng/L
	U 232	232	3.667				ng/L
⌈	U-tot	238	0.190	**3.775**	2.56	67.7	ng/L
|	U-238a	238	0.053	**3.434**	2.32	67.5	ng/L
|	U-235a	235	0.004	**0.197**	0.48	245.1	ng/L
⌊>	U233	233	1817.149				ng/L
	U 233-IS	233	1817.149	**100.221**	1.30	1.3	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: cri238

Sample Date/Time: Tuesday, February 09, 2016 14:42:52
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\cri238.306
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	5	12.372	0.000	
	U	235	6	71.199	0.000	
	236	236	1	100.000	0.000	
	U	238	372	8.081	0.000	
	U 232	232	5	65.848	0.000	
⌈	U-tot	238	619	5.407	0.000	
|	U-238a	238	372	8.081	0.000	
|	U-235a	235	6	71.199	0.000	
⌊>	U233	233	1961	3.022	0.000	
	U 233-IS	233	1961	3.022	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	4.667				ng/L
	U	235	6.333				ng/L
	236	236	1.000				ng/L
	U	238	372.340				ng/L
	U 232	232	5.333				ng/L
⌈	U-tot	238	0.316	**32.296**	4.73	14.6	ng/L
|	U-238a	238	0.190	**34.315**	3.84	11.2	ng/L
|	U-235a	235	0.003	**0.110**	0.51	465.8	ng/L
⌊>	U233	233	1961.173				ng/L
	U 233-IS	233	1961.173	**108.164**	3.27	3.0	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: cri235

Sample Date/Time: Tuesday, February 09, 2016 14:45:13
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\cri235.307
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	4	0.000	0.000	
	U	235	51	1.961	0.000	
	236	236	1	0.000	0.000	
	U	238	5900	1.329	0.000	
	U 232	232	9	22.222	0.000	
⌈	U-tot	238	6191	1.266	0.000	
|	U-238a	238	5900	1.329	0.000	
|	U-235a	235	51	1.961	0.000	
⌊>	U233	233	2001	3.481	0.000	
	U 233-IS	233	2001	3.481	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	4.000				ng/L
	U	235	51.000				ng/L
	236	236	1.000				ng/L
	U	238	5900.233				ng/L
	U 232	232	9.000				ng/L
⌈	U-tot	238	3.098	**659.702**	33.26	5.0	ng/L
|	U-238a	238	2.952	**657.468**	32.10	4.9	ng/L
|	U-235a	235	0.026	**4.976**	0.25	5.0	ng/L
⌊>	U233	233	2000.847				ng/L
	U 233-IS	233	2000.847	**110.352**	3.84	3.5	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: zzz

Sample Date/Time: Tuesday, February 09, 2016 14:47:36
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\zzz.308
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	5	10.825	0.000	
	U	235	5	20.000	0.000	
	236	236	1	86.603	0.000	
	U	238	33	4.676	0.000	
	U 232	232	6	24.119	0.000	
⌈	U-tot	238	279	0.717	0.000	
|	U-238a	238	33	4.676	0.000	
|	U-235a	235	5	20.000	0.000	
⌊>	U233	233	1919	1.280	0.000	
	U 233-IS	233	1919	1.280	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	5.333				ng/L
	U	235	5.000				ng/L
	236	236	1.333				ng/L
	U	238	32.667				ng/L
	U 232	232	6.333				ng/L
⌈	U-tot	238	0.145	**-6.199**	0.31	5.1	ng/L
|	U-238a	238	0.017	**-4.712**	0.14	3.1	ng/L
|	U-235a	235	0.003	**-0.034**	0.11	322.4	ng/L
⌊>	U233	233	1919.166				ng/L
	U 233-IS	233	1919.166	**105.847**	1.35	1.3	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: icsa

Sample Date/Time: Tuesday, February 09, 2016 14:50:00
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\icsa.309
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	3	17.321	0.000	
	U	235	18	41.660	0.000	
	236	236	1	86.603	0.000	
	U	238	36	22.835	0.000	
	U 232	232	30	28.038	0.000	
⌈	U-tot	238	293	4.501	0.000	
|	U-238a	238	36	22.835	0.000	
|	U-235a	235	18	41.660	0.000	
⌊>	U233	233	1768	2.009	0.000	
	U 233-IS	233	1768	2.009	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	3.333				ng/L
	U	235	18.333				ng/L
	236	236	0.667				ng/L
	U	238	35.667				ng/L
	U 232	232	30.333				ng/L
⌈	U-tot	238	0.166	**-1.577**	0.96	60.8	ng/L
|	U-238a	238	0.020	**-4.011**	0.95	23.6	ng/L
|	U-235a	235	0.010	**1.657**	0.93	55.9	ng/L
⌊>	U233	233	1767.807				ng/L
	U 233-IS	233	1767.807	**97.499**	1.96	2.0	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: icsab

Sample Date/Time: Tuesday, February 09, 2016 14:53:12
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\icsab.310
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	18	28.490	0.000	
	U	235	1691	2.728	0.000	
	236	236	1	100.000	0.000	
	U	238	225812	0.406	0.000	
	U 232	232	30	11.578	0.000	
⌈	U-tot	238	227757	0.384	0.000	
|	U-238a	238	225812	0.406	0.000	
|	U-235a	235	1691	2.728	0.000	
⌊>	U233	233	1797	1.642	0.000	
	U 233-IS	233	1797	1.642	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	17.667				ng/L
	U	235	1691.129				ng/L
	236	236	1.000				ng/L
	U	238	225812.211				ng/L
	U 232	232	30.333				ng/L
⌈	U-tot	238	126.750	**28549.707**	363.15	1.3	ng/L
|	U-238a	238	125.668	**28342.701**	354.17	1.2	ng/L
|	U-235a	235	0.941	**205.265**	8.91	4.3	ng/L
⌊>	U233	233	1797.145				ng/L
	U 233-IS	233	1797.145	**99.117**	1.63	1.6	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: zzz

Sample Date/Time: Tuesday, February 09, 2016 14:55:36
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\zzz.311
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	5	39.031	0.000	
	U	235	16	19.500	0.000	
	236	236	1	114.564	0.000	
	U	238	56	11.152	0.000	
	U 232	232	3	62.450	0.000	
⌈	U-tot	238	313	2.730	0.000	
|	U-238a	238	56	11.152	0.000	
|	U-235a	235	16	19.500	0.000	
⌊>	U233	233	1865	1.525	0.000	
	U 233-IS	233	1865	1.525	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	5.333				ng/L
	U	235	15.667				ng/L
	236	236	1.333				ng/L
	U	238	56.000				ng/L
	U 232	232	3.333				ng/L
⌈	U-tot	238	0.168	**-1.126**	1.25	111.4	ng/L
|	U-238a	238	0.030	**-1.772**	0.81	45.6	ng/L
|	U-235a	235	0.008	**1.234**	0.36	29.1	ng/L
⌊>	U233	233	1864.823				ng/L
	U 233-IS	233	1864.823	**102.850**	1.57	1.5	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: ccv

Sample Date/Time: Tuesday, February 09, 2016 14:57:59
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\ccv.312
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	37	13.727	0.000	
	U	235	4658	0.609	0.000	
	236	236	1	114.564	0.000	
	U	238	628164	0.823	0.000	
	U 232	232	4	78.730	0.000	
⌈	U-tot	238	633095	0.814	0.000	
|	U-238a	238	628164	0.823	0.000	
|	U-235a	235	4658	0.609	0.000	
⌊>	U233	233	1843	0.492	0.000	
	U 233-IS	233	1843	0.492	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	36.667				ng/L
	U	235	4657.976				ng/L
	236	236	1.333				ng/L
	U	238	628164.163				ng/L
	U 232	232	3.667				ng/L
⌈	U-tot	238	343.551	**77449.397**	679.50	0.9	ng/L
|	U-238a	238	340.875	**76894.607**	678.29	0.9	ng/L
|	U-235a	235	2.528	**552.134**	5.96	1.1	ng/L
⌊>	U233	233	1842.819				ng/L
	U 233-IS	233	1842.819	**101.636**	0.50	0.5	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: ccb

Sample Date/Time: Tuesday, February 09, 2016 15:00:18
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\ccb.313
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	2	137.766	0.000	
	U	235	10	29.565	0.000	
	236	236	1	43.301	0.000	
	U	238	92	9.149	0.000	
	U 232	232	3	0.000	0.000	
⌈	U-tot	238	340	2.393	0.000	
|	U-238a	238	92	9.149	0.000	
|	U-235a	235	10	29.565	0.000	
⌊>	U233	233	1843	2.008	0.000	
	U 233-IS	233	1843	2.008	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	2.333				ng/L
	U	235	10.333				ng/L
	236	236	1.333				ng/L
	U	238	91.667				ng/L
	U 232	232	3.000				ng/L
⌈	U-tot	238	0.185	**2.673**	1.80	67.5	ng/L
|	U-238a	238	0.050	**2.683**	1.24	46.1	ng/L
|	U-235a	235	0.006	**0.619**	0.34	55.7	ng/L
⌊>	U233	233	1843.486				ng/L
	U 233-IS	233	1843.486	**101.673**	2.04	2.0	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: PB16A26KE3 DF100

Sample Date/Time: Tuesday, February 09, 2016 15:02:37
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\PB16A26KE3 DF100.314
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	2	132.288	0.000	
	U	235	10	41.808	0.000	
	236	236	2	34.641	0.000	
	U	238	29	9.123	0.000	
	U 232	232	5	75.255	0.000	
⌈	U-tot	238	277	2.899	0.000	
|	U-238a	238	29	9.123	0.000	
|	U-235a	235	10	41.808	0.000	
⌊>	U233	233	1	100.000	0.000	
	U 233-IS	233	1	100.000	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	2.000				ng/L
	U	235	9.667				ng/L
	236	236	1.667				ng/L
	U	238	29.000				ng/L
	U 232	232	4.667				ng/L
⌈	U-tot	238					ng/L
|	U-238a	238					ng/L
|	U-235a	235					ng/L
⌊>	U233	233	1.000				ng/L
	U 233-IS	233	1.000	**0.055**	0.06	100.0	%R

not reported
2/11/16 NS

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: LCS16A26KE5 DF100

Sample Date/Time: Tuesday, February 09, 2016 15:04:58
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\LCS16A26KE5 DF100.315
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	2	0.000	0.000	
	U	235	100	12.057	0.000	
	236	236	1	43.301	0.000	
	U	238	11992	1.011	0.000	
	U 232	232	2	91.652	0.000	
⌈	U-tot	238	12330	0.886	0.000	
|	U-238a	238	11992	1.011	0.000	
|	U-235a	235	100	12.057	0.000	
⌊>	U233	233	1	86.603	0.000	
	U 233-IS	233	1	86.603	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	2.000				ng/L
	U	235	100.334				ng/L
	236	236	1.333				ng/L
	U	238	11992.135				ng/L
	U 232	232	1.667				ng/L
⌈	U-tot	238					ng/L
|	U-238a	238					ng/L
|	U-235a	235					ng/L
⌊>	U233	233	0.667				ng/L
	U 233-IS	233	0.667	**0.037**	0.03	86.6	%R

not reported 2/11/16 NS

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: LCS16A26KE7 DF100

Sample Date/Time: Tuesday, February 09, 2016 15:07:20
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\LCS16A26KE7 DF100.316
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	5	12.372	0.000	
	U	235	252	6.199	0.000	
	236	236	2	65.465	0.000	
	U	238	828	1.898	0.000	
	U 232	232	1953	3.304	0.000	
⌈	U-tot	238	1321	1.164	0.000	
|	U-238a	238	828	1.898	0.000	
|	U-235a	235	252	6.199	0.000	
⌊>	U233	233	1	100.000	0.000	
	U 233-IS	233	1	100.000	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	4.667				ng/L
	U	235	252.003				ng/L
	236	236	2.333				ng/L
	U	238	828.031				ng/L
	U 232	232	1952.838				ng/L
⌈	U-tot	238					ng/L
|	U-238a	238					ng/L
|	U-235a	235					ng/L
⌊>	U233	233	1.000				ng/L
	U 233-IS	233	1.000	**0.055**	0.06	100.0	%R

not reported 2/11/16 NS

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: LCS16A26KE8 DF100

Sample Date/Time: Tuesday, February 09, 2016 15:09:45
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\LCS16A26KE8 DF100.317
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	4	66.144	0.000	
	U	235	152	7.201	0.000	
	236	236	3	33.333	0.000	
	U	238	133	6.046	0.000	
	U 232	232	68	7.641	0.000	
⌈	U-tot	238	525	1.143	0.000	
|	U-238a	238	133	6.046	0.000	
|	U-235a	235	152	7.201	0.000	
⌊>	U233	233	1	0.000	0.000	
	U 233-IS	233	1	0.000	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	4.000				ng/L
	U	235	152.334				ng/L
	236	236	3.000				ng/L
	U	238	132.667				ng/L
	U 232	232	68.000				ng/L
⌈	U-tot	238	525.002	**118375.947**	1353.32	1.1	ng/L
|	U-238a	238	132.667	**29921.902**	1809.56	6.0	ng/L
|	U-235a	235	152.334	**33310.321**	2398.76	7.2	ng/L
⌊>	U233	233	1.000				ng/L
	U 233-IS	233	1.000	**0.055**	0.00	0.0	%R

not reported
2/11/16 NS

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: ccv

Sample Date/Time: Tuesday, February 09, 2016 15:12:06
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\ccv.318
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	44	14.900	0.000	
	U	235	4611	0.973	0.000	
	236	236	1	173.205	0.000	
	U	238	631885	0.766	0.000	
	U 232	232	4	35.251	0.000	
⌈	U-tot	238	636775	0.758	0.000	
|	U-238a	238	631885	0.766	0.000	
|	U-235a	235	4611	0.973	0.000	
⌊>	U233	233	1765	1.652	0.000	
	U 233-IS	233	1765	1.652	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	43.667				ng/L
	U	235	4610.957				ng/L
	236	236	0.667				ng/L
	U	238	631884.726				ng/L
	U 232	232	4.333				ng/L
⌈	U-tot	238	360.733	**81324.895**	1172.23	1.4	ng/L
|	U-238a	238	357.962	**80749.542**	1158.30	1.4	ng/L
|	U-235a	235	2.612	**570.666**	14.69	2.6	ng/L
⌊>	U233	233	1765.474				ng/L
	U 233-IS	233	1765.474	**97.371**	1.61	1.7	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: ccb

Sample Date/Time: Tuesday, February 09, 2016 15:14:25
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\ccb.319
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	4	66.617	0.000	
	U	235	6	65.737	0.000	
	236	236	0	173.205	0.000	
	U	238	61	1.883	0.000	
	U 232	232	2	91.652	0.000	
⌈	U-tot	238	308	1.975	0.000	
|	U-238a	238	61	1.883	0.000	
|	U-235a	235	6	65.737	0.000	
⌊>	U233	233	1827	2.276	0.000	
	U 233-IS	233	1827	2.276	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	4.333				ng/L
	U	235	6.333				ng/L
	236	236	0.333				ng/L
	U	238	61.334				ng/L
	U 232	232	1.667				ng/L
⌈	U-tot	238	0.169	**-0.946**	1.60	169.0	ng/L
|	U-238a	238	0.034	**-0.976**	0.23	23.9	ng/L
|	U-235a	235	0.003	**0.161**	0.52	322.1	ng/L
⌊>	U233	233	1827.150				ng/L
	U 233-IS	233	1827.150	**100.772**	2.29	2.3	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: 590214tf df1000

Sample Date/Time: Tuesday, February 09, 2016 15:16:47
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\590214tf df1000.320
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	12	39.996	0.000	
	U	235	1508	0.627	0.000	
	236	236	1	173.205	0.000	
	U	238	202136	0.472	0.000	
	U 232	232	1872	3.609	0.000	
⌈	U-tot	238	203892	0.462	0.000	
|	U-238a	238	202136	0.472	0.000	
|	U-235a	235	1508	0.627	0.000	
⌊>	U233	233	1787	2.421	0.000	
	U 233-IS	233	1787	2.421	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	12.333				ng/L
	U	235	1507.769				ng/L
	236	236	0.667				ng/L
	U	238	202135.769				ng/L
	U 232	232	1872.491				ng/L
⌈	U-tot	238	114.163	**25710.693**	752.16	2.9	ng/L
|	U-238a	238	113.180	**25525.462**	748.46	2.9	ng/L
|	U-235a	235	0.844	**183.973**	3.43	1.9	ng/L
⌊>	U233	233	1786.810				ng/L
	U 233-IS	233	1786.810	**98.547**	2.39	2.4	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: 588049tf DF100

Sample Date/Time: Tuesday, February 09, 2016 15:19:27
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\588049tf DF100.321
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	27	12.055	0.000	
	U	235	3445	3.264	0.000	
	236	236	2	34.641	0.000	
	U	238	455937	1.602	0.000	
	U 232	232	54842	0.889	0.000	
⌈	U-tot	238	459645	1.609	0.000	
|	U-238a	238	455937	1.602	0.000	
|	U-235a	235	3445	3.264	0.000	
⌊>	U233	233	1759	4.277	0.000	
	U 233-IS	233	1759	4.277	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	26.667				ng/L
	U	235	3444.534				ng/L
	236	236	1.667				ng/L
	U	238	455937.318				ng/L
	U 232	232	54841.683				ng/L
⌈	U-tot	238	261.661	**58979.035**	2736.95	4.6	ng/L
|	U-238a	238	259.552	**58547.608**	2721.15	4.6	ng/L
|	U-235a	235	1.960	**427.954**	16.09	3.8	ng/L
⌊>	U233	233	1758.806				ng/L
	U 233-IS	233	1758.806	**97.003**	4.15	4.3	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: 588556tf df100

Sample Date/Time: Tuesday, February 09, 2016 15:23:55
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\588556tf df100.322
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	27	31.116	0.000	
	U	235	2674	2.843	0.000	
	236	236	1	173.205	0.000	
	U	238	355960	0.907	0.000	
	U 232	232	47018	0.860	0.000	
⌈	U-tot	238	358897	0.915	0.000	
|	U-238a	238	355960	0.907	0.000	
|	U-235a	235	2674	2.843	0.000	
⌊>	U233	233	1757	2.550	0.000	
	U 233-IS	233	1757	2.550	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	27.333				ng/L
	U	235	2674.322				ng/L
	236	236	1.000				ng/L
	U	238	355959.563				ng/L
	U 232	232	47017.608				ng/L
⌈	U-tot	238	204.308	**46043.073**	773.24	1.7	ng/L
|	U-238a	238	202.636	**45707.210**	767.33	1.7	ng/L
|	U-235a	235	1.522	**332.287**	9.98	3.0	ng/L
⌊>	U233	233	1757.139				ng/L
	U 233-IS	233	1757.139	**96.911**	2.47	2.5	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: 588556tfD df100

Sample Date/Time: Tuesday, February 09, 2016 15:26:15
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\588556tfD df100.323
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	28	14.264	0.000	
	U	235	2885	2.530	0.000	
	236	236	1	0.000	0.000	
	U	238	391342	0.621	0.000	
	U 232	232	46850	0.888	0.000	
⌈	U-tot	238	394492	0.615	0.000	
|	U-238a	238	391342	0.621	0.000	
|	U-235a	235	2885	2.530	0.000	
⌊>	U233	233	1761	2.309	0.000	
	U 233-IS	233	1761	2.309	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	28.333				ng/L
	U	235	2885.041				ng/L
	236	236	1.000				ng/L
	U	238	391342.264				ng/L
	U 232	232	46849.567				ng/L
⌈	U-tot	238	224.041	**50493.798**	1291.74	2.6	ng/L
|	U-238a	238	222.253	**50132.874**	1290.86	2.6	ng/L
|	U-235a	235	1.638	**357.538**	2.03	0.6	ng/L
⌊>	U233	233	1761.473				ng/L
	U 233-IS	233	1761.473	**97.150**	2.24	2.3	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: 588556tfL df500

Sample Date/Time: Tuesday, February 09, 2016 15:28:35
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\588556tfL df500.324
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	9	48.313	0.000	
	U	235	546	4.164	0.000	
	236	236	0	173.205	0.000	
	U	238	74364	0.743	0.000	
	U 232	232	9645	1.111	0.000	
⌈	U-tot	238	75155	0.750	0.000	
|	U-238a	238	74364	0.743	0.000	
|	U-235a	235	546	4.164	0.000	
⌊>	U233	233	1703	2.353	0.000	
	U 233-IS	233	1703	2.353	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	9.333				ng/L
	U	235	545.680				ng/L
	236	236	0.333				ng/L
	U	238	74364.365				ng/L
	U 232	232	9644.851				ng/L
⌈	U-tot	238	44.139	**9916.541**	285.76	2.9	ng/L
|	U-238a	238	43.674	**9844.509**	280.98	2.9	ng/L
|	U-235a	235	0.321	**69.517**	4.60	6.6	ng/L
⌊>	U233	233	1703.464				ng/L
	U 233-IS	233	1703.464	**93.951**	2.21	2.4	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: 588556tfAS df100

Sample Date/Time: Tuesday, February 09, 2016 15:30:56
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\588556tfAS df100.325
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	40	15.149	0.000	
	U	235	4492	2.176	0.000	
	236	236	2	49.487	0.000	
	U	238	595055	0.637	0.000	
	U 232	232	46638	0.812	0.000	
⌈	U-tot	238	599824	0.629	0.000	
|	U-238a	238	595055	0.637	0.000	
|	U-235a	235	4492	2.176	0.000	
⌊>	U233	233	1722	4.074	0.000	
	U 233-IS	233	1722	4.074	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	40.333				ng/L
	U	235	4492.242				ng/L
	236	236	2.333				ng/L
	U	238	595055.269				ng/L
	U 232	232	46637.678				ng/L
⌈	U-tot	238	348.739	**78619.558**	3621.08	4.6	ng/L
|	U-238a	238	345.967	**78043.351**	3598.31	4.6	ng/L
|	U-235a	235	2.611	**570.376**	24.61	4.3	ng/L
⌊>	U233	233	1722.134				ng/L
	U 233-IS	233	1722.134	**94.980**	3.87	4.1	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: 590212tf df100

Sample Date/Time: Tuesday, February 09, 2016 15:33:18
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\590212tf df100.326
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	27	2.165	0.000	
	U	235	3492	0.405	0.000	
	236	236	3	141.973	0.000	
	U	238	477975	0.732	0.000	
	U 232	232	45756	0.110	0.000	
⌈	U-tot	238	481729	0.727	0.000	
|	U-238a	238	477975	0.732	0.000	
|	U-235a	235	3492	0.405	0.000	
⌊>	U233	233	1751	4.147	0.000	
	U 233-IS	233	1751	4.147	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	26.667				ng/L
	U	235	3491.882				ng/L
	236	236	2.667				ng/L
	U	238	477974.908				ng/L
	U 232	232	45755.684				ng/L
⌈	U-tot	238	275.412	**62080.586**	2165.81	3.5	ng/L
|	U-238a	238	273.265	**61641.425**	2145.90	3.5	ng/L
|	U-235a	235	1.997	**436.026**	18.39	4.2	ng/L
⌊>	U233	233	1750.805				ng/L
	U 233-IS	233	1750.805	**96.562**	4.00	4.1	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: 590213tf df100

Sample Date/Time: Tuesday, February 09, 2016 15:35:41
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\590213tf df100.327
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	19	5.973	0.000	
	U	235	1687	2.096	0.000	
	236	236	1	173.205	0.000	
	U	238	230369	0.993	0.000	
	U 232	232	28876	0.572	0.000	
⌈	U-tot	238	232311	0.997	0.000	
|	U-238a	238	230369	0.993	0.000	
|	U-235a	235	1687	2.096	0.000	
⌊>	U233	233	1689	2.817	0.000	
	U 233-IS	233	1689	2.817	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	19.333				ng/L
	U	235	1686.795				ng/L
	236	236	1.000				ng/L
	U	238	230368.789				ng/L
	U 232	232	28876.475				ng/L
⌈	U-tot	238	137.582	**30992.882**	601.23	1.9	ng/L
|	U-238a	238	136.432	**30771.249**	598.98	1.9	ng/L
|	U-235a	235	0.999	**217.799**	2.41	1.1	ng/L
⌊>	U233	233	1689.128				ng/L
	U 233-IS	233	1689.128	**93.160**	2.62	2.8	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: 591000tf df100

Sample Date/Time: Tuesday, February 09, 2016 15:38:05
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\591000tf df100.328
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	13	15.385	0.000	
	U	235	1225	2.739	0.000	
	236	236	2	49.487	0.000	
	U	238	167209	0.591	0.000	
	U 232	232	14741	0.882	0.000	
⌜	U-tot	238	168683	0.574	0.000	
|	U-238a	238	167209	0.591	0.000	
|	U-235a	235	1225	2.739	0.000	
⌞>	U233	233	1742	4.722	0.000	
	U 233-IS	233	1742	4.722	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	13.000				ng/L
	U	235	1224.734				ng/L
	236	236	2.333				ng/L
	U	238	167208.777				ng/L
	U 232	232	14741.106				ng/L
⌜	U-tot	238	97.006	**21840.803**	1163.31	5.3	ng/L
|	U-238a	238	96.159	**21685.397**	1158.41	5.3	ng/L
|	U-235a	235	0.704	**153.254**	3.34	2.2	ng/L
⌞>	U233	233	1741.803				ng/L
	U 233-IS	233	1741.803	**96.065**	4.54	4.7	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: ccv

Sample Date/Time: Tuesday, February 09, 2016 15:43:20
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\ccv.329
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	34	22.971	0.000	
	U	235	4624	1.909	0.000	
	236	236	3	33.333	0.000	
	U	238	634182	0.948	0.000	
	U 232	232	8	59.195	0.000	
⌈	U-tot	238	639076	0.953	0.000	
|	U-238a	238	634182	0.948	0.000	
|	U-235a	235	4624	1.909	0.000	
⌊>	U233	233	1843	1.873	0.000	
	U 233-IS	233	1843	1.873	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	34.000				ng/L
	U	235	4624.296				ng/L
	236	236	3.000				ng/L
	U	238	634181.899				ng/L
	U 232	232	8.333				ng/L
⌈	U-tot	238	346.715	**78163.120**	966.45	1.2	ng/L
|	U-238a	238	344.060	**77613.101**	956.23	1.2	ng/L
|	U-235a	235	2.509	**547.985**	10.50	1.9	ng/L
⌊>	U233	233	1843.486				ng/L
	U 233-IS	233	1843.486	**101.673**	1.90	1.9	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: ccb

Sample Date/Time: Tuesday, February 09, 2016 15:45:39
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\ccb.330
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	4	58.076	0.000	
	U	235	4	50.000	0.000	
	236	236	3	66.667	0.000	
	U	238	72	7.733	0.000	
	U 232	232	10	36.330	0.000	
⌈	U-tot	238	316	1.278	0.000	
|	U-238a	238	72	7.733	0.000	
|	U-235a	235	4	50.000	0.000	
⌊>	U233	233	1803	2.247	0.000	
	U 233-IS	233	1803	2.247	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	4.333				ng/L
	U	235	4.000				ng/L
	236	236	3.000				ng/L
	U	238	72.000				ng/L
	U 232	232	9.667				ng/L
⌈	U-tot	238	0.176	**0.596**	0.86	143.9	ng/L
|	U-238a	238	0.040	**0.465**	0.80	172.6	ng/L
|	U-235a	235	0.002	**-0.120**	0.24	200.4	ng/L
⌊>	U233	233	1802.813				ng/L
	U 233-IS	233	1802.813	**99.430**	2.23	2.2	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: PB16A26KE3 DF100

Sample Date/Time: Tuesday, February 09, 2016 15:48:00
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\PB16A26KE3 DF100.331
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	4	25.000	0.000	
	U	235	6	32.868	0.000	
	236	236	1	100.000	0.000	
	U	238	49	3.535	0.000	
	U 232	232	11	42.274	0.000	
⌈	U-tot	238	295	0.195	0.000	
|	U-238a	238	49	3.535	0.000	
|	U-235a	235	6	32.868	0.000	
⌊>	U233	233	1715	2.692	0.000	
	U 233-IS	233	1715	2.692	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	4.000				ng/L
	U	235	6.333				ng/L
	236	236	1.000				ng/L
	U	238	49.000				ng/L
	U 232	232	10.667				ng/L
⌈	U-tot	238	0.172	**-0.135**	1.00	740.7	ng/L
|	U-238a	238	0.029	**-2.104**	0.26	12.3	ng/L
|	U-235a	235	0.004	**0.207**	0.28	133.9	ng/L
⌊>	U233	233	1715.132				ng/L
	U 233-IS	233	1715.132	**94.594**	2.55	2.7	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: LCS16A26KE5 DF100

Sample Date/Time: Tuesday, February 09, 2016 15:50:21
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\LCS16A26KE5 DF100.332
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	6	20.377	0.000	
	U	235	85	11.855	0.000	
	236	236	2	124.900	0.000	
	U	238	11954	0.815	0.000	
	U 232	232	8	12.500	0.000	
⌈	U-tot	238	12281	0.795	0.000	
|	U-238a	238	11954	0.815	0.000	
|	U-235a	235	85	11.855	0.000	
⌊>	U233	233	1762	1.494	0.000	
	U 233-IS	233	1762	1.494	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	5.667				ng/L
	U	235	85.334				ng/L
	236	236	1.667				ng/L
	U	238	11953.760				ng/L
	U 232	232	8.000				ng/L
⌈	U-tot	238	6.972	**1533.504**	30.28	2.0	ng/L
|	U-238a	238	6.786	**1522.448**	30.55	2.0	ng/L
|	U-235a	235	0.048	**9.978**	1.10	11.0	ng/L
⌊>	U233	233	1761.806				ng/L
	U 233-IS	233	1761.806	**97.168**	1.45	1.5	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: LCS16A26KE7 DF100

Sample Date/Time: Tuesday, February 09, 2016 15:52:43
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\LCS16A26KE7 DF100.333
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	4	26.647	0.000	
	U	235	10	24.354	0.000	
	236	236	1	86.603	0.000	
	U	238	738	3.639	0.000	
	U 232	232	1960	2.525	0.000	
⌈	U-tot	238	989	2.870	0.000	
|	U-238a	238	738	3.639	0.000	
|	U-235a	235	10	24.354	0.000	
⌊>	U233	233	1800	0.326	0.000	
	U 233-IS	233	1800	0.326	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	4.333				ng/L
	U	235	10.333				ng/L
	236	236	1.333				ng/L
	U	238	738.025				ng/L
	U 232	232	1960.173				ng/L
⌈	U-tot	238	0.549	**84.917**	3.84	4.5	ng/L
|	U-238a	238	0.410	**83.965**	3.57	4.3	ng/L
|	U-235a	235	0.006	**0.653**	0.31	47.4	ng/L
⌊>	U233	233	1799.812				ng/L
	U 233-IS	233	1799.812	**99.265**	0.32	0.3	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: LCS16A26KE8 DF100

Sample Date/Time: Tuesday, February 09, 2016 15:55:06
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\LCS16A26KE8 DF100.334
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	6	53.913	0.000	
	U	235	11	18.368	0.000	
	236	236	1	173.205	0.000	
	U	238	116	11.610	0.000	
	U 232	232	62	19.930	0.000	
⌜	U-tot	238	369	4.930	0.000	
|	U-238a	238	116	11.610	0.000	
|	U-235a	235	11	18.368	0.000	
⌞>	U233	233	1806	2.303	0.000	
	U 233-IS	233	1806	2.303	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	5.667				ng/L
	U	235	11.333				ng/L
	236	236	0.667				ng/L
	U	238	115.667				ng/L
	U 232	232	62.334				ng/L
⌜	U-tot	238	0.204	**7.099**	3.34	47.0	ng/L
|	U-238a	238	0.064	**5.926**	2.02	34.0	ng/L
|	U-235a	235	0.006	**0.773**	0.28	36.3	ng/L
⌞>	U233	233	1806.147				ng/L
	U 233-IS	233	1806.147	**99.614**	2.29	2.3	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: cri238

Sample Date/Time: Tuesday, February 09, 2016 15:59:53
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\cri238.335
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	5	20.000	0.000	
	U	235	7	28.571	0.000	
	236	236	2	34.641	0.000	
	U	238	351	2.151	0.000	
	U 232	232	9	46.632	0.000	
⌜	U-tot	238	599	1.336	0.000	
|	U-238a	238	351	2.151	0.000	
|	U-235a	235	7	28.571	0.000	
⌞>	U233	233	2011	2.774	0.000	
	U 233-IS	233	2011	2.774	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	5.000				ng/L
	U	235	7.000				ng/L
	236	236	1.667				ng/L
	U	238	351.006				ng/L
	U 232	232	8.667				ng/L
⌜	U-tot	238	0.298	**28.234**	1.54	5.5	ng/L
|	U-238a	238	0.175	**30.848**	1.02	3.3	ng/L
|	U-235a	235	0.003	**0.155**	0.20	127.1	ng/L
⌞>	U233	233	2010.515				ng/L
	U 233-IS	233	2010.515	**110.885**	3.08	2.8	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: cri235

Sample Date/Time: Tuesday, February 09, 2016 16:02:14
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\cri235.336
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	4	66.144	0.000	
	U	235	53	8.973	0.000	
	236	236	1	100.000	0.000	
	U	238	6014	1.314	0.000	
	U 232	232	13	26.647	0.000	
⌈	U-tot	238	6307	1.336	0.000	
|	U-238a	238	6014	1.314	0.000	
|	U-235a	235	53	8.973	0.000	
⌊>	U233	233	1990	1.234	0.000	
	U 233-IS	233	1990	1.234	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	4.000				ng/L
	U	235	52.667				ng/L
	236	236	1.000				ng/L
	U	238	6014.294				ng/L
	U 232	232	13.000				ng/L
⌈	U-tot	238	3.169	**675.786**	0.95	0.1	ng/L
|	U-238a	238	3.022	**673.220**	1.22	0.2	ng/L
|	U-235a	235	0.026	**5.180**	0.46	8.8	ng/L
⌊>	U233	233	1990.178				ng/L
	U 233-IS	233	1990.178	**109.764**	1.35	1.2	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: ccv

Sample Date/Time: Tuesday, February 09, 2016 16:04:35
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\ccv.337
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	38	12.262	0.000	
	U	235	4763	0.995	0.000	
	236	236	2	50.000	0.000	
	U	238	640981	0.420	0.000	
	U 232	232	5	61.859	0.000	
⌈	U-tot	238	646018	0.412	0.000	
|	U-238a	238	640981	0.420	0.000	
|	U-235a	235	4763	0.995	0.000	
⌊>	U233	233	1891	1.516	0.000	
	U 233-IS	233	1891	1.516	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	37.667				ng/L
	U	235	4763.354				ng/L
	236	236	2.000				ng/L
	U	238	640980.732				ng/L
	U 232	232	4.667				ng/L
⌈	U-tot	238	341.596	**77008.428**	1317.67	1.7	ng/L
|	U-238a	238	338.933	**76456.360**	1314.96	1.7	ng/L
|	U-235a	235	2.518	**550.105**	3.48	0.6	ng/L
⌊>	U233	233	1891.494				ng/L
	U 233-IS	233	1891.494	**104.321**	1.58	1.5	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: ccb

Sample Date/Time: Tuesday, February 09, 2016 16:06:54
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\ccb.338
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	4	35.251	0.000	
	U	235	7	31.225	0.000	
	236	236	1	86.603	0.000	
	U	238	89	15.280	0.000	
	U 232	232	5	20.000	0.000	
⌈	U-tot	238	336	4.383	0.000	
|	U-238a	238	89	15.280	0.000	
|	U-235a	235	7	31.225	0.000	
⌊>	U233	233	1796	2.921	0.000	
	U 233-IS	233	1796	2.921	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	4.333				ng/L
	U	235	6.667				ng/L
	236	236	1.333				ng/L
	U	238	89.334				ng/L
	U 232	232	5.000				ng/L
⌈	U-tot	238	0.187	**3.290**	2.60	79.2	ng/L
|	U-238a	238	0.050	**2.693**	1.91	71.0	ng/L
|	U-235a	235	0.004	**0.211**	0.27	126.4	ng/L
⌊>	U233	233	1795.812				ng/L
	U 233-IS	233	1795.812	**99.044**	2.89	2.9	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: 588556tfMS5 df100

Sample Date/Time: Tuesday, February 09, 2016 16:20:39
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\588556tfMS5 df100.339
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	25	12.689	0.000	
	U	235	2909	0.751	0.000	
	236	236	2	24.744	0.000	
	U	238	398644	0.868	0.000	
	U 232	232	48639	0.489	0.000	
⌈	U-tot	238	401814	0.860	0.000	
|	U-238a	238	398644	0.868	0.000	
|	U-235a	235	2909	0.751	0.000	
⌊>	U233	233	1782	2.814	0.000	
	U 233-IS	233	1782	2.814	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	25.333				ng/L
	U	235	2908.714				ng/L
	236	236	2.333				ng/L
	U	238	398644.257				ng/L
	U 232	232	48638.559				ng/L
⌈	U-tot	238	225.569	**50838.395**	1767.16	3.5	ng/L
|	U-238a	238	223.790	**50479.535**	1758.61	3.5	ng/L
|	U-235a	235	1.633	**356.379**	8.03	2.3	ng/L
⌊>	U233	233	1782.476				ng/L
	U 233-IS	233	1782.476	**98.308**	2.77	2.8	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: cri238

Sample Date/Time: Tuesday, February 09, 2016 16:22:58
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\cri238.340
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	4	35.251	0.000	
	U	235	5	20.000	0.000	
	236	236	1	86.603	0.000	
	U	238	350	1.904	0.000	
	U 232	232	28	5.391	0.000	
⌈	U-tot	238	595	0.936	0.000	
|	U-238a	238	350	1.904	0.000	
|	U-235a	235	5	20.000	0.000	
⌊>	U233	233	1703	1.289	0.000	
	U 233-IS	233	1703	1.289	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	4.333				ng/L
	U	235	5.000				ng/L
	236	236	0.667				ng/L
	U	238	349.672				ng/L
	U 232	232	28.333				ng/L
⌈	U-tot	238	0.349	**39.833**	1.34	3.4	ng/L
|	U-238a	238	0.205	**37.783**	1.17	3.1	ng/L
|	U-235a	235	0.003	**0.040**	0.14	338.0	ng/L
⌊>	U233	233	1702.797				ng/L
	U 233-IS	233	1702.797	**93.914**	1.21	1.3	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: cri235

Sample Date/Time: Tuesday, February 09, 2016 16:25:19
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\cri235.341
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	5	34.641	0.000	
	U	235	46	5.752	0.000	
	236	236	1	100.000	0.000	
	U	238	5492	1.814	0.000	
	U 232	232	9	40.062	0.000	
⌈	U-tot	238	5779	1.688	0.000	
|	U-238a	238	5492	1.814	0.000	
|	U-235a	235	46	5.752	0.000	
⌊>	U233	233	1830	1.326	0.000	
	U 233-IS	233	1830	1.326	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	5.000				ng/L
	U	235	46.000				ng/L
	236	236	1.000				ng/L
	U	238	5491.690				ng/L
	U 232	232	9.000				ng/L
⌈	U-tot	238	3.157	**673.176**	5.72	0.8	ng/L
|	U-238a	238	3.001	**668.398**	5.72	0.9	ng/L
|	U-235a	235	0.025	**4.896**	0.38	7.9	ng/L
⌊>	U233	233	1830.151				ng/L
	U 233-IS	233	1830.151	**100.938**	1.34	1.3	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: ccv

Sample Date/Time: Tuesday, February 09, 2016 16:27:40
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\ccv.342
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	47	17.968	0.000	
	U	235	4541	0.248	0.000	
	236	236	2	107.855	0.000	
	U	238	629145	0.372	0.000	
	U 232	232	12	33.333	0.000	
⌈	U-tot	238	633969	0.372	0.000	
|	U-238a	238	629145	0.372	0.000	
|	U-235a	235	4541	0.248	0.000	
⌊>	U233	233	1813	2.492	0.000	
	U 233-IS	233	1813	2.492	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	47.333				ng/L
	U	235	4540.928				ng/L
	236	236	2.333				ng/L
	U	238	629145.145				ng/L
	U 232	232	12.000				ng/L
⌈	U-tot	238	349.816	**78862.457**	2233.45	2.8	ng/L
|	U-238a	238	347.154	**78311.098**	2217.00	2.8	ng/L
|	U-235a	235	2.506	**547.286**	14.68	2.7	ng/L
⌊>	U233	233	1813.148				ng/L
	U 233-IS	233	1813.148	**100.000**	2.49	2.5	%R

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: ccb

Sample Date/Time: Tuesday, February 09, 2016 16:29:59
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 45

Sample File: C:\Elandata\Sample\totU_6020_233IS.sam
Method File: C:\Elandata\Method\swri\tot u-233 is.mth
Dataset File: C:\Elandata\DataSet\16 Feb\ccb.343
Tuning File: C:\Elandata\Tuning\Default.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	U	234	4	50.000	0.000	
	U	235	3	66.667	0.000	
	236	236	2	91.652	0.000	
	U	238	77	2.692	0.000	
	U 232	232	9	16.366	0.000	
⌜	U-tot	238	320	0.477	0.000	
|	U-238a	238	77	2.692	0.000	
|	U-235a	235	3	66.667	0.000	
⌞>	U233	233	1803	3.680	0.000	
	U 233-IS	233	1803	3.680	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	U	234	4.000				ng/L
	U	235	3.000				ng/L
	236	236	1.667				ng/L
	U	238	77.334				ng/L
	U 232	232	9.333				ng/L
⌜	U-tot	238	0.178	**1.125**	1.57	139.7	ng/L
|	U-238a	238	0.043	**1.132**	0.33	29.2	ng/L
|	U-235a	235	0.002	**-0.238**	0.25	105.4	ng/L
⌞>	U233	233	1802.813				ng/L
	U 233-IS	233	1802.813	**99.430**	3.66	3.7	%R

010082

SOUTHWEST RESEARCH INSTITUTE

☐ 200.8 TAP No. 01-0406-107 Rev 8/May 15

☑ 6020 TAP No. 01-0406-046 Rev18/May 15

☐ 6020a TAP No. 01-0406-046 Rev18/May 15

☐ TAP No. 01-0406-148 Rev 4/May 15

☐ Other_____

ANALYSIS

U^{234}

ICP-MS CALIB. STD. ID's

S0 12-47-5
STD. 1 12-47-7
I. STD 12-29-1
I. STD _____

QC STD. ID's

ICV/CCV 12-47-10
UCL _____
CRI 12-47-9
ICSA 12-47-16
ICSAB 12-47-11

IDL Date: 1/06/2016
STD's IV, CCS 1-6 expire 11/13/16
STD's Spex, ME 1-4 expire 8/30/16

PROJECT#	CLIENT	TO#	DATE	MATRIX	LOGBK PG
21431.01.001	TETRA TECH	160115-1	2/10/16	Solid, TB.	20160126-P004

INSTRUMENT: NexIon FILENAME: n160210

Analyst: _____ Date: 2/10/16 ☐ CONVERTED (.DAT)

Analytical Batch: 20160211A014

S-0	2/10/2016 11:10	C:\NexIONData\Method\SwRI\U 234.mth	Standard #1	S-0.025
S-234	2/10/2016 11:13	C:\NexIONData\Method\SwRI\U 234.mth	Standard #2	S-234.026
icv	2/10/2016 11:15	C:\NexIONData\Method\SwRI\U 234.mth	Sample	icv.027
icb	2/10/2016 11:18	C:\NexIONData\Method\SwRI\U 234.mth	Sample	icb.028
cri234	2/10/2016 11:20	C:\NexIONData\Method\SwRI\U 234.mth	Sample	cri234.029
icsa	2/10/2016 11:23	C:\NexIONData\Method\SwRI\U 234.mth	Sample	icsa.030
icsab	2/10/2016 11:25	C:\NexIONData\Method\SwRI\U 234.mth	Sample	icsab.031
zzz	2/10/2016 11:28	C:\NexIONData\Method\SwRI\U 234.mth	Sample	zzz.032
ccv	2/10/2016 11:30	C:\NexIONData\Method\SwRI\U 234.mth	Sample	ccv.033
ccb	2/10/2016 11:32	C:\NexIONData\Method\SwRI\U 234.mth	Sample	ccb.034
590214tf df50	2/10/2016 11:35	C:\NexIONData\Method\SwRI\U 234.mth	Sample	590214tf df50.035
588049tf df10	2/10/2016 11:37	C:\NexIONData\Method\SwRI\U 234.mth	Sample	588049tf df10.036
588556tf df10	2/10/2016 11:40	C:\NexIONData\Method\SwRI\U 234.mth	Sample	588556tf df10.037
590212tf df10	2/10/2016 11:42	C:\NexIONData\Method\SwRI\U 234.mth	Sample	590212tf df10.038
590213tf dfS	2/10/2016 11:45	C:\NexIONData\Method\SwRI\U 234.mth	Sample	590213tf df5.039
591000tf df2	2/10/2016 11:47	C:\NexIONData\Method\SwRI\U 234.mth	Sample	591000tf df2.040
ccv	2/10/2016 11:49	C:\NexIONData\Method\SwRI\U 234.mth	Sample	ccv.041
ccb	2/10/2016 11:52	C:\NexIONData\Method\SwRI\U 234.mth	Sample	ccb.042
PB16A26KE3 DF2	2/10/2016 12:12	C:\NexIONData\Method\SwRI\U 234.mth	Sample	PB16A26KE3 DF2.043
LCS16A26KE5	2/10/2016 12:15	C:\NexIONData\Method\SwRI\U 234.mth	Sample	LCS16A26KE5 .044
LCS16A26KE7 DF100	2/10/2016 12:17	C:\NexIONData\Method\SwRI\U 234.mth	Sample	LCS16A26KE7 DF100.045
LCS16A26KE8 DF100	2/10/2016 12:20	C:\NexIONData\Method\SwRI\U 234.mth	Sample	LCS16A26KE8 DF100.046
588556tfD df10	2/10/2016 12:22	C:\NexIONData\Method\SwRI\U 234.mth	Sample	588556tfD df10.047
588556tfL df50	2/10/2016 12:25	C:\NexIONData\Method\SwRI\U 234.mth	Sample	588556tfL df50.048
588556tfMS5 df10	2/10/2016 12:27	C:\NexIONData\Method\SwRI\U 234.mth	Sample	588556tfMS5 df10.049
* 588S56tfAS df10	2/10/2016 12:29	C:\NexIONData\Method\SwRI\U 234.mth	Sample	588556tfAS df10.050
zzz	2/10/2016 12:32	C:\NexIONData\Method\SwRI\U 234.mth	Sample	zzz.051
cri234	2/10/2016 12:34	C:\NexIONData\Method\SwRI\U 234.mth	Sample	cri234.052
ccv	2/10/2016 12:37	C:\NexIONData\Method\SwRI\U 234.mth	Sample	ccv.053
ccb	2/10/2016 12:39	C:\NexIONData\Method\SwRI\U 234.mth	Sample	ccb.054

SWRI

* Spiked 0.0925 mL (#514S3) IN 5 mL

2/10/16

010084
2/10/16

Southwest Research Institute: Daily Performance Report

Sample ID: Daily Performance Check
Sample Date/Time: Wednesday, February 10, 2016 09:31:52
Sample Description:
Method File: C:\NexION Data\Method\Daily Performance_ns.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\Daily Performance Check.024
MassCal File: C:\NexION Data\MassCal\Default.tun
Conditions File: C:\NexION Data\Conditions\Default.dac
Dual Detector Mode: Pulse
Acq. Dead Time (ns): 40
Current Dead Time (ns): 40
Torch Z position (mm): -1.50

Summary

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Net Intens. SD	Net Intens. RSD	Mode
	Be	9.0	5617.0	5616.996	152.709	2.7	Standard
	Mg	24.0	41157.8	41157.755	1140.145	2.8	Standard
	In	114.9	82836.0	82835.979	641.428	0.8	Standard
	U	238.1	67769.1	67769.148	385.078	0.6	Standard
⌈	CeO	155.9	1697.2	0.019	0.000	2.3	Standard
| >	Ce	139.9	88557.8	88557.808	698.219	0.8	Standard
⌊	Ce++	70.0	948.9	0.011	0.000	2.4	Standard
	Bkgd	220.0	0.3	0.267	0.279	104.6	Standard

Current Conditions File Data

Current Value	Description
0.90	Nebulizer Gas Flow STD/KED [NEB]
1.10	Auxiliary Gas Flow
18.00	Plasma Gas Flow
-12.00	Deflector Voltage
1600.00	ICP RF Power
-2043.00	Analog Stage Voltage
1100.00	Pulse Stage Voltage
0.00	Quadrupole Rod Offset STD [QRO]
-4.00	Cell Rod Offset STD [CRO]
6.00	Discriminator Threshold
-10.00	Cell Entrance/Exit Voltage STD
0.00	RPa
0.45	RPq
0.90	DRC Mode NEB
-8.50	DRC Mode QRO
-3.00	DRC Mode CRO
-13.00	DRC Mode Cell Entrance/Exit Voltage
0.10	Cell Gas A
0.00	Cell Gas B
300.00	Axial Field Voltage
-13.00	KED Mode CRO
-12.00	KED Mode QRO
-3.00	KED Mode Cell Entrance Voltage
-24.00	KED Mode Cell Exit Voltage
0.00	KED Cell Gas A
2.00	KED Cell Gas B
0.00	KED RPa
0.25	KED RPq

3/31/16

475.00 KED Mode Axial Field Voltage

Southwest Research Institute: Instrument Mass Calibration Report

File Name: Default.tun
File Path: C:\NexION Data\MassCal\Default.tun
Acq. Date/Time: 09:31:52 Wed 10-Feb-16

Analyte	Exact Mass	Meas. Mass	Mass DAC	Res. DAC	Meas. Peak Width	Custom Res.
Li	7.016	7.025	1314	2020	0.694	
Mg	23.985	24.025	4708	2019	0.695	
In	114.904	114.925	22873	2025	0.713	
U	238.050	238.075	47478	2044	0.720	

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: S-0

Sample Date/Time: Wednesday, February 10, 2016 11:10:56
Solution Type: Standard
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U234.sam
Method File: C:\NexION Data\Method\SwRI\U 234.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\S-0.025
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	220	220	0	173.205	0.000	
⌈	U	234	27	24.109	0.000	
⌊>	U233	233	8397	3.157	0.000	
	U233-IS	233	8397	3.157	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	220	220	0.333				ng/L
⌈	U	234	0.003				ng/L
⌊>	U233	233	8397.488				ng/L
	U233-IS	233	8397.488	**100.000**	3.16	3.2	ng/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: S-234

Sample Date/Time: Wednesday, February 10, 2016 11:13:22
Solution Type: Standard
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U234.sam
Method File: C:\NexION Data\Method\SwRI\U 234.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\S-234.026
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	220	220	0		0.000	
⌈	U	234	4699	4.322	0.000	
⌊>	U233	233	8512	5.279	0.000	
	U233-IS	233	8512	5.279	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	220	220	0.000				ng/L
⌈	U	234	0.552	**100.000**	1.27	1.3	ng/L
⌊>	U233	233	8511.569				ng/L
	U233-IS	233	8511.569	**101.359**	5.35	5.3	ng/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: icv

Sample Date/Time: Wednesday, February 10, 2016 11:15:48
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U234.sam
Method File: C:\NexION Data\Method\SwRI\U 234.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\icv.027
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	220	220	0		0.000	
⌈	U	234	4571	4.179	0.000	
⌊>	U233	233	8531	2.227	0.000	
	U233-IS	233	8531	2.227	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	220	220	0.000				ng/L
⌈	U	234	0.536	**96.961**	1.99	2.1	ng/L
⌊>	U233	233	8530.911				ng/L
	U233-IS	233	8530.911	**101.589**	2.26	2.2	ng/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: icb

Sample Date/Time: Wednesday, February 10, 2016 11:18:14
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U234.sam
Method File: C:\NexION Data\Method\SwRI\U 234.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\icb.028
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	220	220	0		0.000	
⌈	U	234	32	15.578	0.000	
⌊>	U233	233	8243	1.920	0.000	
	U233-IS	233	8243	1.920	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	220	220	0.000				ng/L
⌈	U	234	0.004	**0.120**	0.12	98.9	ng/L
⌊>	U233	233	8243.385				ng/L
	U233-IS	233	8243.385	**98.165**	1.88	1.9	ng/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: cri234

Sample Date/Time: Wednesday, February 10, 2016 11:20:39
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U234.sam
Method File: C:\NexION Data\Method\SwRI\U 234.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\cri234.029
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	220	220	0		0.000	
⌈	U	234	122	3.706	0.000	
⌊>	U233	233	8137	2.133	0.000	
	U233-IS	233	8137	2.133	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	220	220	0.000				ng/L
⌈	U	234	0.015	**2.144**	0.14	6.7	ng/L
⌊>	U233	233	8136.648				ng/L
	U233-IS	233	8136.648	**96.894**	2.07	2.1	ng/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: icsa

Sample Date/Time: Wednesday, February 10, 2016 11:23:06
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U234.sam
Method File: C:\NexION Data\Method\SwRI\U 234.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\icsa.030
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	220	220	0	173.205	0.000	
⌈	U	234	24	10.342	0.000	
⌊>	U233	233	6932	1.292	0.000	
	U233-IS	233	6932	1.292	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	220	220	0.333				ng/L
⌈	U	234	0.004	**0.059**	0.07	117.4	ng/L
⌊>	U233	233	6931.922				ng/L
	U233-IS	233	6931.922	**82.548**	1.07	1.3	ng/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: icsab

Sample Date/Time: Wednesday, February 10, 2016 11:25:32
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U234.sam
Method File: C:\NexION Data\Method\SwRI\U 234.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\icsab.031
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	220	220	0	173.205	0.000	
⌈	U	234	762	4.796	0.000	
⌊>	U233	233	6900	2.295	0.000	
	U233-IS	233	6900	2.295	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	220	220	0.333				ng/L
⌈	U	234	0.110	**19.518**	0.63	3.2	ng/L
⌊>	U233	233	6899.904				ng/L
	U233-IS	233	6899.904	**82.166**	1.89	2.3	ng/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: zzz

Sample Date/Time: Wednesday, February 10, 2016 11:28:00
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U234.sam
Method File: C:\NexION Data\Method\SwRI\U 234.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\zzz.032
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	220	220	0	173.205	0.000	
⌈	U	234	34	18.149	0.000	
⌊>	U233	233	8099	3.517	0.000	
	U233-IS	233	8099	3.517	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	220	220	0.333				ng/L
⌈	U	234	0.004	**0.175**	0.12	68.1	ng/L
⌊>	U233	233	8098.958				ng/L
	U233-IS	233	8098.958	**96.445**	3.39	3.5	ng/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: ccv

Sample Date/Time: Wednesday, February 10, 2016 11:30:27
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U234.sam
Method File: C:\NexION Data\Method\SwRI\U 234.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\ccv.033
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	220	220	0		0.000	
⌈	U	234	4423	2.963	0.000	
⌊>	U233	233	8305	1.986	0.000	
	U233-IS	233	8305	1.986	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	220	220	0.000				ng/L
⌈	U	234	0.533	**96.409**	1.63	1.7	ng/L
⌊>	U233	233	8305.092				ng/L
	U233-IS	233	8305.092	**98.900**	1.96	2.0	ng/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: ccb

Sample Date/Time: Wednesday, February 10, 2016 11:32:53
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U234.sam
Method File: C:\NexION Data\Method\SwRI\U 234.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\ccb.034
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	220	220	0		0.000	
⌈	U	234	31	15.410	0.000	
⌊>	U233	233	8200	2.355	0.000	
	U233-IS	233	8200	2.355	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	220	220	0.000				ng/L
⌈	U	234	0.004	**0.099**	0.09	90.8	ng/L
⌊>	U233	233	8200.023				ng/L
	U233-IS	233	8200.023	**97.649**	2.30	2.4	ng/L

Sample ID: 590214tf df50

Sample Date/Time: Wednesday, February 10, 2016 11:35:18
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U234.sam
Method File: C:\NexION Data\Method\SwRI\U 234.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\590214tf df50.035
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	220	220	1	173.205	0.000	
⌈	U	234	1266	4.319	0.000	
⌊>	U233	233	8371	3.902	0.000	
	U233-IS	233	8371	3.902	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	220	220	0.667				ng/L
⌈	U	234	0.151	**26.967**	0.16	0.6	ng/L
⌊>	U233	233	8371.138				ng/L
	U233-IS	233	8371.138	**99.686**	3.89	3.9	ng/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: 588049tf df10

Sample Date/Time: Wednesday, February 10, 2016 11:37:44
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U234.sam
Method File: C:\NexION Data\Method\SwRI\U 234.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\588049tf df10.036
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	220	220	3	21.651	0.000	
⌈	U	234	1484	4.577	0.000	
⌊>	U233	233	8166	3.759	0.000	
	U233-IS	233	8166	3.759	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	220	220	2.667				ng/L
⌈	U	234	0.182	**32.516**	0.28	0.9	ng/L
⌊>	U233	233	8166.336				ng/L
	U233-IS	233	8166.336	**97.247**	3.66	3.8	ng/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: 588556tf df10

Sample Date/Time: Wednesday, February 10, 2016 11:40:10
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U234.sam
Method File: C:\NexION Data\Method\SwRI\U 234.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\588556tf df10.037
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	220	220	3	88.192	0.000	
⌈	U	234	1119	7.577	0.000	
⌊>	U233	233	8065	3.726	0.000	
	U233-IS	233	8065	3.726	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	220	220	3.000				ng/L
⌈	U	234	0.139	**24.668**	1.04	4.2	ng/L
⌊>	U233	233	8064.603				ng/L
	U233-IS	233	8064.603	**96.036**	3.58	3.7	ng/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: 590212tf df10

Sample Date/Time: Wednesday, February 10, 2016 11:42:36
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U234.sam
Method File: C:\NexION Data\Method\SwRI\U 234.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\590212tf df10.038
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	220	220	3	21.651	0.000	
⌜	U	234	1491	5.970	0.000	
⌞>	U233	233	8074	2.778	0.000	
	U233-IS	233	8074	2.778	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	220	220	2.667				ng/L
⌜	U	234	0.185	**33.041**	1.09	3.3	ng/L
⌞>	U233	233	8073.608				ng/L
	U233-IS	233	8073.608	**96.143**	2.67	2.8	ng/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: 590213tf df5

Sample Date/Time: Wednesday, February 10, 2016 11:45:02
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U234.sam
Method File: C:\NexION Data\Method\SwRI\U 234.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\590213tf df5.039
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	220	220	6	45.580	0.000	
⌈	U	234	1334	4.337	0.000	
⌊>	U233	233	7648	3.400	0.000	
	U233-IS	233	7648	3.400	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	220	220	6.333				ng/L
⌈	U	234	0.174	**31.191**	0.52	1.7	ng/L
⌊>	U233	233	7647.674				ng/L
	U233-IS	233	7647.674	**91.071**	3.10	3.4	ng/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: 591000tf df2

Sample Date/Time: Wednesday, February 10, 2016 11:47:28
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U234.sam
Method File: C:\NexION Data\Method\SwRI\U 234.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\591000tf df2.040
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	220	220	3	88.192	0.000	
⌜	U	234	2463	6.152	0.000	
⌞>	U233	233	8062	3.516	0.000	
	U233-IS	233	8062	3.516	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	220	220	3.000				ng/L
⌜	U	234	0.305	**55.022**	1.55	2.8	ng/L
⌞>	U233	233	8061.934				ng/L
	U233-IS	233	8061.934	**96.004**	3.38	3.5	ng/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: ccv

Sample Date/Time: Wednesday, February 10, 2016 11:49:54
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U234.sam
Method File: C:\NexION Data\Method\SwRI\U 234.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\ccv.041
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	220	220	0	173.205	0.000	
⌈	U	234	4770	2.323	0.000	
⌊>	U233	233	8907	2.580	0.000	
	U233-IS	233	8907	2.580	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	220	220	0.333				ng/L
⌈	U	234	0.536	**96.992**	3.37	3.5	ng/L
⌊>	U233	233	8907.174				ng/L
	U233-IS	233	8907.174	**106.069**	2.74	2.6	ng/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: ccb

Sample Date/Time: Wednesday, February 10, 2016 11:52:20
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U234.sam
Method File: C:\NexION Data\Method\SwRI\U 234.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\ccb.042
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	220	220	0		0.000	
⌈	U	234	21	28.966	0.000	
⌊>	U233	233	8229	3.000	0.000	
	U233-IS	233	8229	3.000	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	220	220	0.000				ng/L
⌈	U	234	0.003	**-0.118**	0.12	101.4	ng/L
⌊>	U233	233	8228.709				ng/L
	U233-IS	233	8228.709	**97.990**	2.94	3.0	ng/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: PB16A26KE3 DF2

Sample Date/Time: Wednesday, February 10, 2016 12:12:48
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U234.sam
Method File: C:\NexION Data\Method\SwRI\U 234.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\PB16A26KE3 DF2.043
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	220	220	0		0.000	
⌈	U	234	31	6.644	0.000	
⌊>	U233	233	8223	3.839	0.000	
	U233-IS	233	8223	3.839	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	220	220	0.000				ng/L
⌈	U	234	0.004	**0.115**	0.07	62.2	ng/L
⌊>	U233	233	8223.040				ng/L
	U233-IS	233	8223.040	**97.923**	3.76	3.8	ng/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: LCS16A26KE5

Sample Date/Time: Wednesday, February 10, 2016 12:15:15
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U234.sam
Method File: C:\NexION Data\Method\SwRI\U 234.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\LCS16A26KE5 .044
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	220	220	0	173.205	0.000	
⌈	U	234	399	3.482	0.000	
⌊>	U233	233	8297	2.426	0.000	
	U233-IS	233	8297	2.426	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	220	220	0.333				ng/L
⌈	U	234	0.048	**8.177**	0.16	2.0	ng/L
⌊>	U233	233	8296.754				ng/L
	U233-IS	233	8296.754	**98.800**	2.40	2.4	ng/L

Southwest Research Institute: Quantitative Analysis - Summary Report 010107

Sample ID: LCS16A26KE7 DF100

Sample Date/Time: Wednesday, February 10, 2016 12:17:42
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U234.sam
Method File: C:\NexION Data\Method\SwRI\U 234.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\LCS16A26KE7 DF100.045
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	220	220	0	173.205	0.000	
⌜	U	234	23	6.739	0.000	
⌞>	U233	233	8406	1.037	0.000	
	U233-IS	233	8406	1.037	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	220	220	0.333				ng/L
⌜	U	234	0.003	**-0.089**	0.03	35.1	ng/L
⌞>	U233	233	8406.493				ng/L
	U233-IS	233	8406.493	**100.107**	1.04	1.0	ng/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: LCS16A26KE8 DF100

Sample Date/Time: Wednesday, February 10, 2016 12:20:08
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U234.sam
Method File: C:\NexION Data\Method\SwRI\U 234.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\LCS16A26KE8 DF100.046
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	220	220	0	173.205	0.000	
⌜	U	234	21	7.160	0.000	
⌞>	U233	233	8189	2.379	0.000	
	U233-IS	233	8189	2.379	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	220	220	0.333				ng/L
⌜	U	234	0.003	**-0.106**	0.02	21.4	ng/L
⌞>	U233	233	8189.016				ng/L
	U233-IS	233	8189.016	**97.517**	2.32	2.4	ng/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: 588556tfD df10

Sample Date/Time: Wednesday, February 10, 2016 12:22:35
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U234.sam
Method File: C:\NexION Data\Method\SwRI\U 234.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\588556tfD df10.047
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	220	220	1	86.603	0.000	
⌈	U	234	1190	4.908	0.000	
⌊>	U233	233	7877	2.082	0.000	
	U233-IS	233	7877	2.082	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	220	220	1.333				ng/L
⌈	U	234	0.151	**26.925**	0.86	3.2	ng/L
⌊>	U233	233	7876.815				ng/L
	U233-IS	233	7876.815	**93.800**	1.95	2.1	ng/L

Southwest Research Institute: Quantitative Analysis - Summary Report 010110

Sample ID: 588556tfL df50

Sample Date/Time: Wednesday, February 10, 2016 12:25:02
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U234.sam
Method File: C:\NexION Data\Method\SwRI\U 234.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\588556tfL df50.048
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	220	220	2	50.000	0.000	
⌜	U	234	246	4.126	0.000	
⌞>	U233	233	7978	3.166	0.000	
	U233-IS	233	7978	3.166	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	220	220	2.000				ng/L
⌜	U	234	0.031	**5.037**	0.22	4.4	ng/L
⌞>	U233	233	7977.547				ng/L
	U233-IS	233	7977.547	**94.999**	3.01	3.2	ng/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: 588556tfMS5 df10

Sample Date/Time: Wednesday, February 10, 2016 12:27:28
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U234.sam
Method File: C:\NexION Data\Method\SwRI\U 234.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\588556tfMS5 df10.049
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	220	220	7	45.826	0.000	
⌈	U	234	1216	3.630	0.000	
⌊>	U233	233	7978	3.826	0.000	
	U233-IS	233	7978	3.826	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	220	220	6.667				ng/L
⌈	U	234	0.153	**27.192**	1.06	3.9	ng/L
⌊>	U233	233	7978.214				ng/L
	U233-IS	233	7978.214	**95.007**	3.63	3.8	ng/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: 588556tfAS df10

Sample Date/Time: Wednesday, February 10, 2016 12:29:55
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U234.sam
Method File: C:\NexION Data\Method\SwRI\U 234.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\588556tfAS df10.050
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	220	220	3	34.641	0.000	
⌈	U	234	1998	2.000	0.000	
⌊>	U233	233	7839	2.014	0.000	
	U233-IS	233	7839	2.014	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	220	220	3.333				ng/L
⌈	U	234	0.255	**45.841**	0.52	1.1	ng/L
⌊>	U233	233	7839.125				ng/L
	U233-IS	233	7839.125	**93.351**	1.88	2.0	ng/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: zzz

Sample Date/Time: Wednesday, February 10, 2016 12:32:22
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U234.sam
Method File: C:\NexION Data\Method\SwRI\U 234.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\zzz.051
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	220	220	1	173.205	0.000	
⌜	U	234	25	6.030	0.000	
⌞>	U233	233	8312	3.190	0.000	
	U233-IS	233	8312	3.190	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	220	220	0.667				ng/L
⌜	U	234	0.003	**-0.025**	0.05	186.4	ng/L
⌞>	U233	233	8311.764				ng/L
	U233-IS	233	8311.764	**98.979**	3.16	3.2	ng/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: cri234

Sample Date/Time: Wednesday, February 10, 2016 12:34:50
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U234.sam
Method File: C:\NexION Data\Method\SwRI\U 234.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\cri234.052
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	220	220	1	100.000	0.000	
⌈	U	234	106	6.158	0.000	
⌊>	U233	233	8056	2.702	0.000	
	U233-IS	233	8056	2.702	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	220	220	1.000				ng/L
⌈	U	234	0.013	**1.809**	0.15	8.6	ng/L
⌊>	U233	233	8056.263				ng/L
	U233-IS	233	8056.263	**95.937**	2.59	2.7	ng/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: ccv

Sample Date/Time: Wednesday, February 10, 2016 12:37:16
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U234.sam
Method File: C:\NexION Data\Method\SwRI\U 234.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\ccv.053
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	220	220	1	86.603	0.000	
⌈	U	234	4659	3.632	0.000	
⌊>	U233	233	8444	2.990	0.000	
	U233-IS	233	8444	2.990	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	220	220	0.667				ng/L
⌈	U	234	0.552	**99.890**	1.26	1.3	ng/L
⌊>	U233	233	8443.853				ng/L
	U233-IS	233	8443.853	**100.552**	3.01	3.0	ng/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: ccb

Sample Date/Time: Wednesday, February 10, 2016 12:39:41
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U234.sam
Method File: C:\NexION Data\Method\SwRI\U 234.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\ccb.054
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
	220	220	0		0.000	
⌈	U	234	19	20.904	0.000	
⌊>	U233	233	8285	3.419	0.000	
	U233-IS	233	8285	3.419	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
	220	220	0.000				ng/L
⌈	U	234	0.002	**-0.157**	0.07	46.8	ng/L
⌊>	U233	233	8285.414				ng/L
	U233-IS	233	8285.414	**98.665**	3.37	3.4	ng/L

010117

SOUTHWEST RESEARCH INSTITUTE

☐ 200.8 TAP No. 01-0406-107 Rev 8/May 15

☑ 6020 TAP No. 01-0406-046 Rev18/May 15

☐ 6020a TAP No. 01-0406-046 Rev18/May 15

☐ TAP No. 01-0406-148 Rev 4/May 15

☐ Other_____

ANALYSIS

U 236

IDL Date: 1/06/2016
STD's IV, CCS 1-6 expire 11/13/16
STD's Spex, ME 1-4 expire 8/30/16

ICP-MS CALIB. STD. ID's

S0 12-47-5
STD. 1 12-47-12
I. STD 12-29-1
I. STD ———

QC STD. ID's

ICV/CCV 12-47-14
UCL ———
CRI 12-47-15
ICSA 12-47-6
ICSAB 12-47-16 (RE) 2/10/16 16

PROJECT#	CLIENT	TO#	DATE	MATRIX	LOGBK PG
21431.01.001	Tetra Tech	160115-1	2/10/16	Solid, T.B.	20160126-P004

INSTRUMENT: NexIon FILENAME: n160210a

Analyst: _____ Date: 2/10/16 ☐ CONVERTED (.DAT)

(RE) 2/11/16 NS

Analytical Batch: 20160211A016 202

(RE) 2/11/16 NS

010118

S-0	2/10/2016 15:52	C:\NexIONData\Method\SwRI\U 236.mth	Standard #1	S-0.085
S-1	2/10/2016 15:55	C:\NexIONData\Method\SwRI\U 236.mth	Standard #2	S-1.086
icv	2/10/2016 15:57	C:\NexIONData\Method\SwRI\U 236.mth	Sample	icv.087
icb	2/10/2016 15:59	C:\NexIONData\Method\SwRI\U 236.mth	Sample	icb.088
cri236	2/10/2016 16:02	C:\NexIONData\Method\SwRI\U 236.mth	Sample	cri236.089
icsa	2/10/2016 16:04	C:\NexIONData\Method\SwRI\U 236.mth	Sample	icsa.090
icsab	2/10/2016 16:07	C:\NexIONData\Method\SwRI\U 236.mth	Sample	icsab.091
zzz	2/10/2016 16:09	C:\NexIONData\Method\SwRI\U 236.mth	Sample	zzz.092
ccv	2/10/2016 16:11	C:\NexIONData\Method\SwRI\U 236.mth	Sample	ccv.093
ccb	2/10/2016 16:14	C:\NexIONData\Method\SwRI\U 236.mth	Sample	ccb.094
PB16A26KE3	2/10/2016 16:17	C:\NexIONData\Method\SwRI\U 236.mth	Sample	PB16A26KE3.095
LCS16A26KE6	2/10/2016 16:20	C:\NexIONData\Method\SwRI\U 236.mth	Sample	LCS16A26KE6.096
LCS16A26KE7 df100	2/10/2016 16:22	C:\NexIONData\Method\SwRI\U 236.mth	Sample	LCS16A26KE7 df100.097
LCS16A26KE8 df100	2/10/2016 16:25	C:\NexIONData\Method\SwRI\U 236.mth	Sample	LCS16A26KE8 df100.098
588049tf	2/10/2016 16:27	C:\NexIONData\Method\SwRI\U 236.mth	Sample	588049tf .099
588556tf	2/10/2016 16:29	C:\NexIONData\Method\SwRI\U 236.mth	Sample	588556tf.100
588556tfD	2/10/2016 16:32	C:\NexIONData\Method\SwRI\U 236.mth	Sample	588556tfD.101
588556tfL df5	2/10/2016 16:34	C:\NexIONData\Method\SwRI\U 236.mth	Sample	588556tfL df5.102
588556tfMS6	2/10/2016 16:37	C:\NexIONData\Method\SwRI\U 236.mth	Sample	588556tfMS6.103
* 588556tfAS	2/10/2016 16:39	C:\NexIONData\Method\SwRI\U 236.mth	Sample	588556tfAS.104
ccv	2/10/2016 16:41	C:\NexIONData\Method\SwRI\U 236.mth	Sample	ccv.105
ccb	2/10/2016 16:44	C:\NexIONData\Method\SwRI\U 236.mth	Sample	ccb.106
590212tf	2/10/2016 16:46	C:\NexIONData\Method\SwRI\U 236.mth	Sample	590212tf.107
590213tf	2/10/2016 16:49	C:\NexIONData\Method\SwRI\U 236.mth	Sample	590213tf.108
590214tf	2/10/2016 16:51	C:\NexIONData\Method\SwRI\U 236.mth	Sample	590214tf.109
591000tf	2/10/2016 16:53	C:\NexIONData\Method\SwRI\U 236.mth	Sample	591000tf.110
zzz	2/10/2016 16:56	C:\NexIONData\Method\SwRI\U 236.mth	Sample	zzz.111
cri236	2/10/2016 16:58	C:\NexIONData\Method\SwRI\U 236.mth	Sample	cri236.112
ccv	2/10/2016 17:01	C:\NexIONData\Method\SwRI\U 236.mth	Sample	ccv.113
ccb	2/10/2016 17:03	C:\NexIONData\Method\SwRI\U 236.mth	Sample	ccb.114

SWRI

* Spiked 0.062 ml (12-8-16) in 5ml

2/10/16

010119 2/10/16

Southwest Research Institute: Daily Performance Report

Sample ID: Daily Performance Check
Sample Date/Time: Wednesday, February 10, 2016 09:31:52
Sample Description:
Method File: C:\NexION Data\Method\Daily Performance_ns.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\Daily Performance Check.024
MassCal File: C:\NexION Data\MassCal\Default.tun
Conditions File: C:\NexION Data\Conditions\Default.dac
Dual Detector Mode: Pulse
Acq. Dead Time (ns): 40
Current Dead Time (ns): 40
Torch Z position (mm): -1.50

Summary

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Net Intens. SD	Net Intens. RSD	Mode
	Be	9.0	5617.0	5616.996	152.709	2.7	Standard
	Mg	24.0	41157.8	41157.755	1140.145	2.8	Standard
	In	114.9	82836.0	82835.979	641.428	0.8	Standard
	U	238.1	67769.1	67769.148	385.078	0.6	Standard
⌈	CeO	155.9	1697.2	0.019	0.000	2.3	Standard
| >	Ce	139.9	88557.8	88557.808	698.219	0.8	Standard
⌊	Ce++	70.0	948.9	0.011	0.000	2.4	Standard
	Bkgd	220.0	0.3	0.267	0.279	104.6	Standard

Current Conditions File Data

Current Value	Description
0.90	Nebulizer Gas Flow STD/KED [NEB]
1.10	Auxiliary Gas Flow
18.00	Plasma Gas Flow
-12.00	Deflector Voltage
1600.00	ICP RF Power
-2043.00	Analog Stage Voltage
1100.00	Pulse Stage Voltage
0.00	Quadrupole Rod Offset STD [QRO]
-4.00	Cell Rod Offset STD [CRO]
6.00	Discriminator Threshold
-10.00	Cell Entrance/Exit Voltage STD
0.00	RPa
0.45	RPq
0.90	DRC Mode NEB
-8.50	DRC Mode QRO
-3.00	DRC Mode CRO
-13.00	DRC Mode Cell Entrance/Exit Voltage
0.10	Cell Gas A
0.00	Cell Gas B
300.00	Axial Field Voltage
-13.00	KED Mode CRO
-12.00	KED Mode QRO
-3.00	KED Mode Cell Entrance Voltage
-24.00	KED Mode Cell Exit Voltage
0.00	KED Cell Gas A
2.00	KED Cell Gas B
0.00	KED RPa
0.25	KED RPq

3/31/16

475.00 KED Mode Axial Field Voltage

Southwest Research Institute: Instrument Mass Calibration Report

File Name: Default.tun
File Path: C:\NexION Data\MassCal\Default.tun
Acq. Date/Time: 09:31:52 Wed 10-Feb-16

Analyte	Exact Mass	Meas. Mass	Mass DAC	Res. DAC	Meas. Peak Width	Custom Res.
Li	7.016	7.025	1314	2020	0.694	
Mg	23.985	24.025	4708	2019	0.695	
In	114.904	114.925	22873	2025	0.713	
U	238.050	238.075	47478	2044	0.720	

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: S-0

Sample Date/Time: Wednesday, February 10, 2016 15:52:43
Solution Type: Standard
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U236.sam
Method File: C:\NexION Data\Method\SwRI\U 236.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\S-0.085
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌈	u236	236	31	14.704	0.000	
⌊>	233	233	10777	0.219	0.000	
	233-IS	233	10777	0.219	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌈	u236	236	0.003				ug/L
⌊>	233	233	10777.311				ng/L
	233-IS	233	10777.311	**100.000**	0.22	0.2	ug/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: S-1

Sample Date/Time: Wednesday, February 10, 2016 15:55:05
Solution Type: Standard
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U236.sam
Method File: C:\NexION Data\Method\SwRI\U 236.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\S-1.086
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌜	u236	236	1482576	1.173	0.000	
⌞>	233	233	10606	0.894	0.000	
	233-IS	233	10606	0.894	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	u236	236	139.794	**20.000**	0.38	1.9	ug/L
⌞>	233	233	10606.498				ng/L
	233-IS	233	10606.498	**98.415**	0.88	0.9	ug/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: icv

Sample Date/Time: Wednesday, February 10, 2016 15:57:28
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U236.sam
Method File: C:\NexION Data\Method\SwRI\U 236.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\icv.087
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌈	u236	236	1433914	1.335	0.000	
⌊>	233	233	10601	0.657	0.000	
	233-IS	233	10601	0.657	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌈	u236	236	135.252	**19.350**	0.13	0.7	ug/L
⌊>	233	233	10601.494				ng/L
	233-IS	233	10601.494	**98.369**	0.65	0.7	ug/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: icb

Sample Date/Time: Wednesday, February 10, 2016 15:59:51
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U236.sam
Method File: C:\NexION Data\Method\SwRI\U 236.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\icb.088
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌈	u236	236	50	13.406	0.000	
⌊>	233	233	10686	2.629	0.000	
	233-IS	233	10686	2.629	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌈	u236	236	0.005	**0.000**	0.00	28.5	ug/L
⌊>	233	233	10685.901				ng/L
	233-IS	233	10685.901	**99.152**	2.61	2.6	ug/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: cri236

Sample Date/Time: Wednesday, February 10, 2016 16:02:14
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U236.sam
Method File: C:\NexION Data\Method\SwRI\U 236.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\cri236.089
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌈	u236	236	727	1.261	0.000	
⌊>	233	233	10480	2.076	0.000	
	233-IS	233	10480	2.076	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌈	u236	236	0.069	**0.010**	0.00	3.4	ug/L
⌊>	233	233	10480.059				ng/L
	233-IS	233	10480.059	**97.242**	2.02	2.1	ug/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: icsa

Sample Date/Time: Wednesday, February 10, 2016 16:04:38
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U236.sam
Method File: C:\NexION Data\Method\SwRI\U 236.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\icsa.090
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌜	u236	236	5	52.915	0.000	
⌞>	233	233	8761	4.217	0.000	
	233-IS	233	8761	4.217	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	u236	236	0.001	**-0.000**	0.00	14.4	ug/L
⌞>	233	233	8761.073				ng/L
	233-IS	233	8761.073	**81.292**	3.43	4.2	ug/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: icsab

Sample Date/Time: Wednesday, February 10, 2016 16:07:02
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U236.sam
Method File: C:\NexION Data\Method\SwRI\U 236.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\icsab.091
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌜	u236	236	1204324	0.688	0.000	
⌞>	233	233	8927	1.284	0.000	
	233-IS	233	8927	1.284	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	u236	236	134.928	**19.304**	0.32	1.6	ug/L
⌞>	233	233	8926.853				ng/L
	233-IS	233	8926.853	**82.830**	1.06	1.3	ug/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: zzz

Sample Date/Time: Wednesday, February 10, 2016 16:09:27
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U236.sam
Method File: C:\NexION Data\Method\SwRI\U 236.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\zzz.092
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌈	u236	236	39	8.882	0.000	
⌊>	233	233	10107	2.413	0.000	
	233-IS	233	10107	2.413	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌈	u236	236	0.004	**0.000**	0.00	29.8	ug/L
⌊>	233	233	10107.086				ng/L
	233-IS	233	10107.086	**93.781**	2.26	2.4	ug/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: ccv

Sample Date/Time: Wednesday, February 10, 2016 16:11:51
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U236.sam
Method File: C:\NexION Data\Method\SwRI\U 236.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\ccv.093
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌜	u236	236	1351353	1.357	0.000	
⌞>	233	233	10079	3.373	0.000	
	233-IS	233	10079	3.373	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	u236	236	134.143	**19.192**	0.45	2.4	ug/L
⌞>	233	233	10079.065				ng/L
	233-IS	233	10079.065	**93.521**	3.15	3.4	ug/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: ccb

Sample Date/Time: Wednesday, February 10, 2016 16:14:14
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U236.sam
Method File: C:\NexION Data\Method\SwRI\U 236.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\ccb.094
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌈	u236	236	44	27.273	0.000	
⌊>	233	233	10105	2.606	0.000	
	233-IS	233	10105	2.606	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌈	u236	236	0.004	**0.000**	0.00	81.1	ug/L
⌊>	233	233	10105.418				ng/L
	233-IS	233	10105.418	**93.766**	2.44	2.6	ug/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: PB16A26KE3

Sample Date/Time: Wednesday, February 10, 2016 16:17:56
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U236.sam
Method File: C:\NexION Data\Method\SwRI\U 236.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\PB16A26KE3.095
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌈	u236	236	6	36.464	0.000	
⌊>	233	233	10186	1.855	0.000	
	233-IS	233	10186	1.855	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌈	u236	236	0.001	**-0.000**	0.00	10.5	ug/L
⌊>	233	233	10186.150				ng/L
	233-IS	233	10186.150	**94.515**	1.75	1.9	ug/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: LCS16A26KE6

Sample Date/Time: Wednesday, February 10, 2016 16:20:21
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U236.sam
Method File: C:\NexION Data\Method\SwRI\U 236.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\LCS16A26KE6.096
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌜	u236	236	224498	1.791	0.000	
⌞>	233	233	10349	3.022	0.000	
	233-IS	233	10349	3.022	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	u236	236	21.698	**3.104**	0.05	1.5	ug/L
⌞>	233	233	10349.285				ng/L
	233-IS	233	10349.285	**96.028**	2.90	3.0	ug/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: LCS16A26KE7 df100

Sample Date/Time: Wednesday, February 10, 2016 16:22:45
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U236.sam
Method File: C:\NexION Data\Method\SwRI\U 236.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\LCS16A26KE7 df100.097
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌈	u236	236	12	40.507	0.000	
⌊>	233	233	10157	3.941	0.000	
	233-IS	233	10157	3.941	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌈	u236	236	0.001	**-0.000**	0.00	26.4	ug/L
⌊>	233	233	10157.129				ng/L
	233-IS	233	10157.129	**94.245**	3.71	3.9	ug/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: LCS16A26KE8 df100

Sample Date/Time: Wednesday, February 10, 2016 16:25:08
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U236.sam
Method File: C:\NexION Data\Method\SwRI\U 236.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\LCS16A26KE8 df100.098
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌜	u236	236	3	17.321	0.000	
⌞>	233	233	10251	2.574	0.000	
	233-IS	233	10251	2.574	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	u236	236	0.000	**-0.000**	0.00	2.2	ug/L
⌞>	233	233	10250.536				ng/L
	233-IS	233	10250.536	**95.112**	2.45	2.6	ug/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: 588049tf

Sample Date/Time: Wednesday, February 10, 2016 16:27:33
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U236.sam
Method File: C:\NexION Data\Method\SwRI\U 236.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\588049tf .099
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌈	u236	236	82	9.817	0.000	
⌊>	233	233	7571	0.755	0.000	
	233-IS	233	7571	0.755	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌈	u236	236	0.011	**0.001**	0.00	12.5	ug/L
⌊>	233	233	7570.959				ng/L
	233-IS	233	7570.959	**70.249**	0.53	0.8	ug/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: 588556tf

Sample Date/Time: Wednesday, February 10, 2016 16:29:56
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U236.sam
Method File: C:\NexION Data\Method\SwRI\U 236.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\588556tf.100
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌈	u236	236	61	7.790	0.000	
⌊>	233	233	6838	1.744	0.000	
	233-IS	233	6838	1.744	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌈	u236	236	0.009	**0.001**	0.00	14.0	ug/L
⌊>	233	233	6838.204				ng/L
	233-IS	233	6838.204	**63.450**	1.11	1.7	ug/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: 588556tfD

Sample Date/Time: Wednesday, February 10, 2016 16:32:20
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U236.sam
Method File: C:\NexION Data\Method\SwRI\U 236.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\588556tfD.101
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌈	u236	236	55	7.524	0.000	
⌊>	233	233	6981	1.562	0.000	
	233-IS	233	6981	1.562	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌈	u236	236	0.008	**0.001**	0.00	12.7	ug/L
⌊>	233	233	6980.616				ng/L
	233-IS	233	6980.616	**64.771**	1.01	1.6	ug/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: 588556tfL df5

Sample Date/Time: Wednesday, February 10, 2016 16:34:45
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U236.sam
Method File: C:\NexION Data\Method\SwRI\U 236.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\588556tfL df5.102
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌜	u236	236	19	2.986	0.000	
⌞>	233	233	9560	1.897	0.000	
	233-IS	233	9560	1.897	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	u236	236	0.002	**-0.000**	0.00	10.7	ug/L
⌞>	233	233	9560.322				ng/L
	233-IS	233	9560.322	**88.708**	1.68	1.9	ug/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: 588556tfMS6

Sample Date/Time: Wednesday, February 10, 2016 16:37:09
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U236.sam
Method File: C:\NexION Data\Method\SwRI\U 236.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\588556tfMS6.103
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌈	u236	236	57924	1.109	0.000	
⌊>	233	233	6835	1.272	0.000	
	233-IS	233	6835	1.272	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌈	u236	236	8.476	**1.212**	0.02	1.6	ug/L
⌊>	233	233	6834.535				ng/L
	233-IS	233	6834.535	**63.416**	0.81	1.3	ug/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: 588556tfAS

Sample Date/Time: Wednesday, February 10, 2016 16:39:33
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U236.sam
Method File: C:\NexION Data\Method\SwRI\U 236.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\588556tfAS.104
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌈	u236	236	730877	0.712	0.000	
⌊>	233	233	6829	1.061	0.000	
	233-IS	233	6829	1.061	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌈	u236	236	107.033	**15.313**	0.14	0.9	ug/L
⌊>	233	233	6828.865				ng/L
	233-IS	233	6828.865	**63.363**	0.67	1.1	ug/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: ccv

Sample Date/Time: Wednesday, February 10, 2016 16:41:57
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U236.sam
Method File: C:\NexION Data\Method\SwRI\U 236.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\ccv.105
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌈	u236	236	1401676	0.422	0.000	
⌊>	233	233	10288	2.299	0.000	
	233-IS	233	10288	2.299	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌈	u236	236	136.290	**19.499**	0.43	2.2	ug/L
⌊>	233	233	10287.900				ng/L
	233-IS	233	10287.900	**95.459**	2.20	2.3	ug/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: ccb

Sample Date/Time: Wednesday, February 10, 2016 16:44:20
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U236.sam
Method File: C:\NexION Data\Method\SwRI\U 236.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\ccb.106
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌜	u236	236	54	5.693	0.000	
⌞>	233	233	10225	0.588	0.000	
	233-IS	233	10225	0.588	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	u236	236	0.005	**0.000**	0.00	12.0	ug/L
⌞>	233	233	10224.513				ng/L
	233-IS	233	10224.513	**94.871**	0.56	0.6	ug/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: 590212tf

Sample Date/Time: Wednesday, February 10, 2016 16:46:43
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U236.sam
Method File: C:\NexION Data\Method\SwRI\U 236.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\590212tf.107
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌜	u236	236	74	11.754	0.000	
⌞>	233	233	8883	3.249	0.000	
	233-IS	233	8883	3.249	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	u236	236	0.008	**0.001**	0.00	14.1	ug/L
⌞>	233	233	8883.491				ng/L
	233-IS	233	8883.491	**82.428**	2.68	3.2	ug/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: 590213tf

Sample Date/Time: Wednesday, February 10, 2016 16:49:08
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U236.sam
Method File: C:\NexION Data\Method\SwRI\U 236.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\590213tf.108
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌈	u236	236	26	35.352	0.000	
⌊>	233	233	7581	2.037	0.000	
	233-IS	233	7581	2.037	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌈	u236	236	0.003	**0.000**	0.00	215.4	ug/L
⌊>	233	233	7581.299				ng/L
	233-IS	233	7581.299	**70.345**	1.43	2.0	ug/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: 590214tf

Sample Date/Time: Wednesday, February 10, 2016 16:51:33
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U236.sam
Method File: C:\NexION Data\Method\SwRI\U 236.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\590214tf.109
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌜	u236	236	872	0.993	0.000	
⌞>	233	233	8232	1.434	0.000	
	233-IS	233	8232	1.434	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	u236	236	0.106	**0.015**	0.00	1.8	ug/L
⌞>	233	233	8232.043				ng/L
	233-IS	233	8232.043	**76.383**	1.10	1.4	ug/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: 591000tf

Sample Date/Time: Wednesday, February 10, 2016 16:53:58
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U236.sam
Method File: C:\NexION Data\Method\SwRI\U 236.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\591000tf.110
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌜	u236	236	26	5.951	0.000	
⌞>	233	233	9122	0.281	0.000	
	233-IS	233	9122	0.281	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	u236	236	0.003	**-0.000**	0.00	516.8	ug/L
⌞>	233	233	9121.994				ng/L
	233-IS	233	9121.994	**84.641**	0.24	0.3	ug/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: zzz

Sample Date/Time: Wednesday, February 10, 2016 16:56:32
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U236.sam
Method File: C:\NexION Data\Method\SwRI\U 236.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\zzz.111
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌈	u236	236	44	7.922	0.000	
⌊>	233	233	11601	1.890	0.000	
	233-IS	233	11601	1.890	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌈	u236	236	0.004	**0.000**	0.00	34.8	ug/L
⌊>	233	233	11601.049				ng/L
	233-IS	233	11601.049	**107.643**	2.03	1.9	ug/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: cri236

Sample Date/Time: Wednesday, February 10, 2016 16:58:56
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U236.sam
Method File: C:\NexION Data\Method\SwRI\U 236.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\cri236.112
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌜	u236	236	806	3.064	0.000	
⌞>	233	233	11622	3.179	0.000	
	233-IS	233	11622	3.179	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	u236	236	0.069	**0.010**	0.00	4.1	ug/L
⌞>	233	233	11622.071				ng/L
	233-IS	233	11622.071	**107.838**	3.43	3.2	ug/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: ccv

Sample Date/Time: Wednesday, February 10, 2016 17:01:19
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U236.sam
Method File: C:\NexION Data\Method\SwRI\U 236.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\ccv.113
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌜	u236	236	1601399	1.091	0.000	
⌞>	233	233	11718	2.500	0.000	
	233-IS	233	11718	2.500	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	u236	236	136.696	**19.557**	0.34	1.7	ug/L
⌞>	233	233	11718.159				ng/L
	233-IS	233	11718.159	**108.730**	2.72	2.5	ug/L

Southwest Research Institute: Quantitative Analysis - Summary Report

Sample ID: ccb

Sample Date/Time: Wednesday, February 10, 2016 17:03:42
Solution Type: Sample
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 40

Sample File: C:\NexION Data\Sample\SwRI\U236.sam
Method File: C:\NexION Data\Method\SwRI\U 236.mth
Dataset File: C:\NexION Data\DataSet\16 Feb\ccb.114
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌜	u236	236	69	7.330	0.000	
⌞>	233	233	11819	2.381	0.000	
	233-IS	233	11819	2.381	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	u236	236	0.006	**0.000**	0.00	13.8	ug/L
⌞>	233	233	11818.587				ng/L
	233-IS	233	11818.587	**109.662**	2.61	2.4	ug/L

SOUTHWEST RESEARCH INSTITUTE
CLIENT: Tetra Tech
TASK ORDER#: 160115-1
SRR#: 56591, 56639, 56785, 56876
SDG: 588049
VTSR: 11.20.15, 12.01.15, 12.01.15, 01.15.16
PROJECT#: 21431.01.001

ALPHA SPEC RAW DATA

Southwest Research Institute, Division 1, Radiochemistry

Alpha Spectroscopy Bench Sheet
Thorium 228, 230,232 (1 sig)

Client: Tetra Tech
Task Order: 160115-1
Prep Page: 19-173
Prep Date: 30-Mar-16

4/22/16

Project #: 21431.01.001
SRR: 56591, 56639, 56785, 56876
Units: g
RL: 1000 pCi/g Th-228
1000 pCi/g Th-230
1000 pCi/g Th-232
TPU sig factor: 1

Prep Information	A	B	A2	C	D1	D2	D3	D	E	F
Item	Lab Id	Initial Sample Amount (g)	Digestion Final Volume (ml)	% Solids	(g/ml)	Amount used for Column Sep. (mL)	Amount after Column Sep. (mL)	Amount taken for precip (mL)	Equilvant used (mL)	Sample aliquot analyzed (g)	Total DF
1	PBWB11KE2	0.50	50.0	100.0	0.01000	0.050	25	25	0.05	0.0005	2000.0
2	LCSWB11KE2	0.50	50.0	100.0	0.01000	0.050	25	25	0.05	0.0005	2000.0
3	588049R	0.5109	50.0	100.0	0.01022	0.050	25	25	0.05	0.0005	1957.3
4	588556R	0.5136	50.0	100.0	0.01027	0.050	25	25	0.05	0.0005	1947.0
5	588556DR	0.5165	50.0	100.0	0.01033	0.050	25	25	0.05	0.0005	1936.1
6	590212R	0.5133	50.0	100.0	0.01027	0.050	25	25	0.05	0.0005	1948.2
7	590213R	0.5131	50.0	100.0	0.01026	0.050	25	25	0.05	0.0005	1948.9
8	590214R	0.5076	50.0	100.0	0.01015	0.250	25	25	0.25	0.0025	394.0
9	591000R	0.5039	50.0	100.0	0.01008	0.050	25	25	0.05	0.0005	1984.5

Sample Calculations:

C = (A / B * A2) E = (C * D)
D = D3 * (D1 / D2)

F = (1 / E)
F = 1 / ((A / B * A2) * D)

Laboratory Control Sample Information		Spike Information	
Analyte:	Natural Thorium		
Standard ID:	022RadSol3	**Th228 RL:**	1000
Activity Th228 (pCi/ml):	N/A	**Th230 RL:**	1000
Activity Th230 (pCi/ml):	N/A	**Th232 RL:**	1000
Activity Th232 (pCi/ml):	110.10		
Reference Date:	20-Jan-10		
Analysis Date:	3/30/2016		
Decay Corrected TV Th228:	N/A	**Half-Life Th228 (yrs):**	1.9131
Decay Corrected TV Th230:	N/A	**Half-Life Th230 (yrs):**	75380
Decay Corrected TV Th232:	110.100	**Half-Life Th232 (yrs):**	1.405E+10
Volume Used (ml):	0.091	**Volume Used (ml):**	N/A

LCS Duplicate Evaluation		
RPD	**Dup Eval**	
N/A	N/A	Th230
N/A	N/A	Th232

4/22/16

010153

Southwest Research Institute, Division 1, Radiochemistry

Alpha Spectroscopy Bench Sheet

Thorium 228, 230,232 (1 sig)

							G	H	I	J	K	L	M	N			
			TRACER				Raw pCi/ planchet				Report pCi/g						Relative
Item	Lab Id	Date Analyzed	Nuclide	Rec %	FWHM	Nuclide	Act	TPU	MDC	ERR	Act	TPU	MDC	ERR	TV	%r	Bias
1	PBWB11KE2	3/30/16 23:46	Th229 056-Rad-Sol3	92.0	38.8	TH-228	5.22E-02	1.20E-02	2.27E-02	1.16E-02	1.04E+02	2.41E+01	4.54E+01	2.32E+01		PB > 3*TPU	
						TH-230	9.07E-02	1.55E-02	1.74E-02	1.45E-02	1.81E+02	3.10E+01	3.47E+01	2.90E+01		PB > 3*TPU	
						TH-232	6.78E-03	5.07E-03	2.17E-02	5.06E-03	1.36E+01	1.01E+01	4.33E+01	1.01E+01		PB < 3*TPU	
2	LCSWB11KE2	3/30/16 23:46	Th229 056-Rad-Sol3	75.6	47.7	TH-228	6.87E+00	4.38E-01	5.33E-02	1.39E-01	1.37E+04	8.77E+02	1.07E+02	2.77E+02			
						TH-230	1.62E+00	1.18E-01	2.04E-02	6.57E-02	3.23E+03	2.36E+02	4.08E+01	1.31E+02			
						TH-232	1.01E+01	6.34E-01	2.03E-02	1.64E-01	2.02E+04	1.27E+03	4.07E+01	3.28E+02	2.00E+04	101.0%	0.0101
3	588049R	3/30/16 23:46	Th229 056-Rad-Sol3	88.7	49.7	TH-228	5.44E-02	1.30E-02	3.04E-02	1.26E-02	1.06E+02	2.55E+01	5.95E+01	2.47E+01			
						TH-230	2.93E+01	1.78E+00	1.76E-02	2.60E-01	5.74E+04	3.49E+03	3.45E+01	5.08E+02			
						TH-232	1.33E-01	1.94E-02	1.76E-02	1.76E-02	2.61E+02	3.79E+01	3.44E+01	3.45E+01			
4	588556R	3/30/16 23:46	Th229 056-Rad-Sol3	89.4	37.9	TH-228	3.89E-02	1.21E-02	3.92E-02	1.19E-02	7.56E+01	2.36E+01	7.64E+01	2.32E+01			
						TH-230	2.66E+01	1.62E+00	1.73E-02	2.45E-01	5.18E+04	3.15E+03	3.37E+01	4.77E+02			
						TH-232	6.09E-02	1.25E-02	1.72E-02	1.19E-02	1.18E+02	2.43E+01	3.36E+01	2.32E+01	RPD	Dup Eval (1 sig)	
5	588556DR	3/30/16 23:46	Th229 056-Rad-Sol3	88.8	49.7	TH-228	8.00E-02	1.72E-02	4.57E-02	1.65E-02	1.55E+02	3.33E+01	8.84E+01	3.20E+01	68.7	1.9	Pass
						TH-230	2.59E+01	1.58E+00	2.30E-02	2.50E-01	5.02E+04	3.07E+03	4.45E+01	4.83E+02	3.1	0.4	Pass
						TH-232	9.82E-02	1.66E-02	1.83E-02	1.55E-02	1.90E+02	3.22E+01	3.55E+01	3.01E+01	46.4	1.8	Pass
6	590212R	3/30/16 23:46	Th229 056-Rad-Sol3	88.7	42.6	TH-228	5.35E-02	1.33E-02	3.50E-02	1.29E-02	1.04E+02	2.58E+01	6.81E+01	2.50E+01			
						TH-230	3.02E+01	1.84E+00	2.17E-02	2.61E-01	5.88E+04	3.58E+03	4.22E+01	5.09E+02			
						TH-232	6.09E-02	1.25E-02	1.73E-02	1.19E-02	1.19E+02	2.43E+01	3.36E+01	2.33E+01			
7	590213R	3/30/16 23:46	Th229 056-Rad-Sol3	90.0	44.2	TH-228	2.64E-02	1.06E-02	3.88E-02	1.05E-02	5.15E+01	2.06E+01	7.55E+01	2.04E+01			
						TH-230	1.96E+01	1.20E+00	1.71E-02	2.09E-01	3.82E+04	2.33E+03	3.33E+01	4.08E+02			
						TH-232	3.12E-02	8.83E-03	1.70E-02	8.63E-03	6.08E+01	1.72E+01	3.32E+01	1.68E+01			
8	590214R	3/30/16 23:46	Th229 056-Rad-Sol3	88.1	43.3	TH-228	9.06E-02	1.70E-02	3.52E-02	1.61E-02	3.57E+01	6.68E+00	1.39E+01	6.32E+00			
						TH-230	1.70E+01	1.04E+00	3.68E-02	1.97E-01	6.68E+03	4.10E+02	1.45E+01	7.75E+01			
						TH-232	2.50E-02	8.01E-03	1.74E-02	7.87E-03	9.85E+00	3.16E+00	6.85E+00	3.10E+00			
9	591000R	3/30/16 23:46	Th229 056-Rad-Sol3	90.4	43.0	TH-228	4.33E-02	1.25E-02	3.88E-02	1.23E-02	8.58E+01	2.49E+01	7.70E+01	2.43E+01			
						TH-230	1.32E+01	8.12E-01	1.71E-02	1.72E-01	2.62E+04	1.61E+03	3.40E+01	3.41E+02			
						TH-232	2.45E-02	7.87E-03	1.71E-02	7.73E-03	4.87E+01	1.56E+01	3.39E+01	1.53E+01			

Sample Calculations

G, H, I, J results from Alpha Spec printouts

Duplicate Evaluation = (Sample-Duplicate) / sqrt ((TPUsample^2) + (TPUdup^2)) ≤ 3

K = G * F

L = H * F

M = I * F

N = J * F

010154

Apex-Alpha™

Tetra Tech
21431.01.001
TO#160115-1
19-173
WAN 04/06/16

010155

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133973.cnf
Detector Name: ALPHA 026
Chamber Serial Number: 13000553B
Detector Serial Number: 84466
Geometry Description: Shelf 2

Energy Calibration: 11/7/2015 12:59:27 AM by Administrator
Shape Calibration: 11/7/2015 12:59:27 AM by Administrator
Efficiency Calibration: 11/7/2015 12:59:28 AM by Administrator
Certificate Name: In7859 - primary

ENERGY / SHAPE CALIBRATION

Version: Alpha Encal v1.1
Energy = 3.435 MeV + 3.0209E-003*ch
FWHM = 2.8939E-002 MeV
Low Tail = 4.0718E-003 MeV

Energy (MeV)	Centroid Channel	Centroid error	FWHM (ch)	FWHM error	TAIL (ch)	TAIL error
4.184	248.54	0.1918	8.63	0.4318	1.09	0.1238
4.761	439.48	0.2473	9.02	0.5564	1.13	0.1580
5.148	566.19	0.1476	9.33	0.3539	1.71	0.1581
5.479	677.31	0.2241	12.54	0.5775	3.32	0.4196

EFFICIENCY CALIBRATION

Version: Alpha Efcal v1.0
Avg Efficiency: 0.2165
Uncertainty: +/- 0.0025

Energy (MeV)	Efficiency	Error
4.184	2.2146E-001	5.13E-003
4.761	2.1314E-001	5.03E-003
5.148	2.2152E-001	5.23E-003
5.479	2.1060E-001	4.98E-003

010156

Apex-Alpha™

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133973.cnf
Batch Identification: 160330TH
Sample Identification: PBWB11KE2
Sample Geometry: Shelf 2
Procedure Description: Th - 1000 min

Detector Name: ALPHA_026
Chamber Serial Number: 13000553B
Detector Serial Number: 84466
Env. Background: System Bkgd 121753
Reagent Blank: <not performed>

Sample Size: 1.000 +/- 0.0000 unit
Sample Date/Time: 2/11/2016 11:34:29 PM
Acquisition Date/Time: 3/30/2016 11:46:17 PM
Acquisition Live Time: 1000.0 minutes
Acquisition Real Time: 1000.1 minutes

Tracer Certificate: Th229 056-Rad-Sol3
Tracer Quantity: 0.200 mL
Effective Efficiency: 0.1992 +/- 0.0036
Counting Efficiency: 0.2165 +/- 0.0025 on 11/7/2015 12:59:28 AM
Chem. Recovery Factor: 0.9201 +/- 0.0199

Peak Match Tolerance: 0.200 MeV

PEAK Location REPORT

Nuclide		Left Channel	Channel Width	Right Channel	Left Energy Marker	Right Energy Marker
TH-228		551	133	683	5099.9	5498.6
TH-229	T	410	141	550	4673.9	5096.8
TH-230		295	116	410	4326.5	4673.9
TH-232		119	102	220	3794.8	4099.9

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-228		5.332	22.00	22.27	1.00	0.00E+000	4.5
TH-229	T	4.875	4318.00	1.52	1.00	0.00E+000	38.8
TH-230		4.569	40.00	16.01	0.00	0.00E+000	4.0
TH-232		3.958	3.00	74.54	1.00	0.00E+000	3.0

010157

Apex-Alpha™

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133973.cnf
Batch Identification: 160330TH
Sample Identification: PBWB11KE2
Sample Geometry: Shelf 2
Procedure Description: Th - 1000 min

Detector Name: ALPHA_026
Chamber Serial Number: 13000553B
Detector Serial Number: 84466

Sample Size: 1.000 unit
Sample Date/Time: 2/11/2016 11:34:29 PM
Acquisition Date/Time: 3/30/2016 11:46:17 PM
Acquisition Live Time: 1000.1 minutes
Acquisition Real Time: 1000.1 minutes

NUCLIDE ACTIVITY REPORT

Nuclide	Energy (MeV)	Activity (pCi/unit)	Activity Error %	MDA (pCi/unit)	MDA Error %
TH-228		5.2176E-002	23.07	2.2711E-002	6.02
	5.400	5.2176E-002	23.07		
TH-229		1.0608E+001	6.02	2.3525E-002	6.02
	4.872	1.0608E+001	6.02		
TH-230		9.0724E-002	17.10	1.7351E-002	6.02
	4.672	9.0724E-002	17.10		
TH-232		6.7839E-003	74.78	2.1654E-002	6.02
	3.997	6.7839E-003	74.78		

Errors quoted at 1.000 sigma

010158

Apex-Alpha™

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133973.cnf
Batch Identification: 160330TH
Sample Identification: PBWB11KE2
Sample Geometry: Shelf 2
Procedure Description: Th - 1000 min

Detector Name: ALPHA_026
Chamber Serial Number: 13000553B
Detector Serial Number: 84466

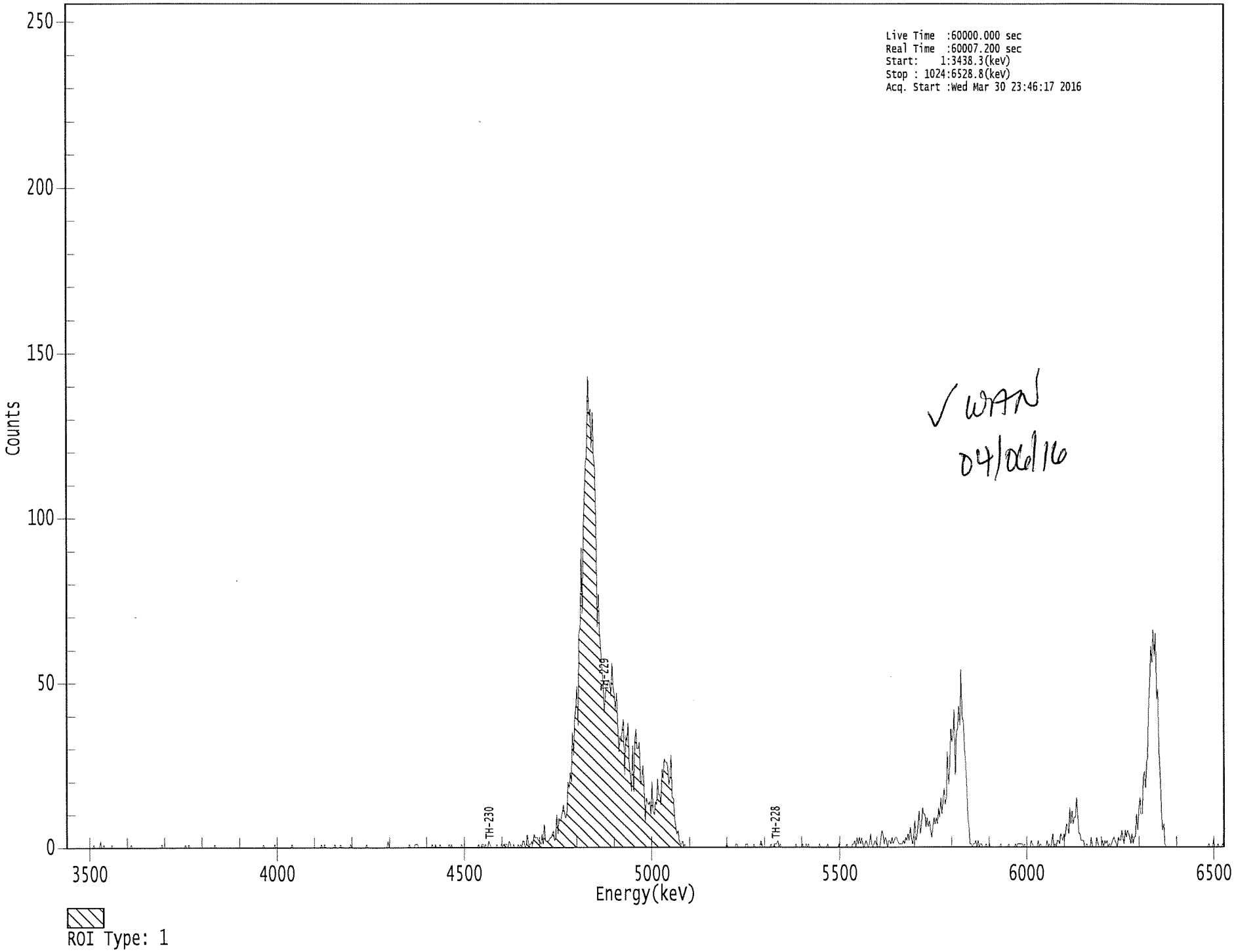
Sample Size: 1.000 unit
Sample Date/Time: 2/11/2016 11:34:29 PM
Acquisition Date/Time: 3/30/2016 11:46:17 PM
Acquisition Live Time: 1000.1 minutes
Acquisition Real Time: 1000.1 minutes

----- NUCLIDE ANALYSIS RESULTS -----

Nuclide Name	Id Conf.	Energy (keV)	Activity (pCi/unit)	MDA (pCi/unit)
TH-228	0.982	5400.00*	5.218E-002 +/- 1.204E-002	2.271E-002 +/- 1.368E-003
TH-229	1.000	4872.00*	1.061E+001 +/- 6.388E-001	2.352E-002 +/- 1.417E-003
TH-230	0.959	4672.00*	9.072E-002 +/- 1.552E-002	1.735E-002 +/- 1.045E-003
TH-232	0.994	3997.00*	6.784E-003 +/- 5.073E-003	2.165E-002 +/- 1.304E-003

Activity reported as of : 3/30/16 11:46:17 PM

0000133973.CNF



010159

010160

Apex-Alpha™

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133974.cnf
Detector Name: ALPHA_027
Chamber Serial Number: 13000554A
Detector Serial Number: 84467
Geometry Description: Shelf 2

Energy Calibration: 1/6/2016 9:35:54 PM by Administrator
Shape Calibration: 1/6/2016 9:35:54 PM by Administrator
Efficiency Calibration: 1/6/2016 9:35:55 PM by Administrator
Certificate Name: In7860 - primary

ENERGY / SHAPE CALIBRATION

Version: Alpha Encal v1.1
Energy = 3.436 MeV + 3.0322E-003*ch
FWHM = 2.7470E-002 MeV
Low Tail = 4.4421E-003 MeV

Energy (MeV)	Centroid Channel	Centroid error	FWHM (ch)	FWHM error	TAIL (ch)	TAIL error
4.184	247.24	0.1618	8.80	0.3769	1.31	0.1301
4.761	438.04	0.1973	8.69	0.4533	1.22	0.1475
5.148	564.09	0.1108	8.72	0.2668	1.63	0.1228
5.479	674.93	0.2233	11.86	0.5762	3.23	0.4390

EFFICIENCY CALIBRATION

Version: Alpha Efcal v1.0
Avg Efficiency: 0.2243
Uncertainty: +/- 0.0023

Energy (MeV)	Efficiency	Error
4.184	2.2050E-001	4.54E-003
4.761	2.2352E-001	4.60E-003
5.148	2.2913E-001	4.59E-003
5.479	2.2410E-001	4.57E-003

010161

Apex-Alpha™

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133974.cnf
Batch Identification: 160330TH
Sample Identification: LCSWB11KE2
Sample Geometry: Shelf 2
Procedure Description: Th - 1000 min

Detector Name: ALPHA_027
Chamber Serial Number: 13000554A
Detector Serial Number: 84467
Env. Background: System Bkgd 121754
Reagent Blank: <not performed>

Sample Size: 1.000 +/- 0.0000 unit
Sample Date/Time: 2/11/2016 11:34:29 PM
Acquisition Date/Time: 3/30/2016 11:46:19 PM
Acquisition Live Time: 1000.0 minutes
Acquisition Real Time: 1000.1 minutes

Tracer Certificate: Th229 056-Rad-Sol3
Tracer Quantity: 0.200 mL
Effective Efficiency: 0.1695 +/- 0.0033
Counting Efficiency: 0.2243 +/- 0.0023 on 1/6/2016 9:35:55 PM
Chem. Recovery Factor: 0.7557 +/- 0.0165

Peak Match Tolerance: 0.200 MeV

PEAK Location REPORT

Nuclide		Left Channel	Channel Width	Right Channel	Left Energy Marker	Right Energy Marker
TH-228		548	133	680	5097.3	5497.5
TH-229	T	418	125	542	4703.1	5079.1
TH-230		294	123	416	4327.1	4697.0
TH-232		119	101	219	3796.5	4099.7

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-228		5.386	2464.00	2.02	6.00	0.00E+000	29.8
TH-229	T	4.876	3674.00	1.65	0.00	0.00E+000	47.7
TH-230		4.643	606.00	4.07	0.00	0.00E+000	38.5
TH-232		3.969	3808.00	1.62	0.00	0.00E+000	48.6

010162

Apex-Alpha™

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133974.cnf
Batch Identification: 160330TH
Sample Identification: LCSWB11KE2
Sample Geometry: Shelf 2
Procedure Description: Th - 1000 min

Detector Name: ALPHA_027
Chamber Serial Number: 13000554A
Detector Serial Number: 84467

Sample Size: 1.000 unit
Sample Date/Time: 2/11/2016 11:34:29 PM
Acquisition Date/Time: 3/30/2016 11:46:19 PM
Acquisition Live Time: 1000.1 minutes
Acquisition Real Time: 1000.1 minutes

NUCLIDE ACTIVITY REPORT

Nuclide	Energy (MeV)	Activity (pCi/unit)	Activity Error %	MDA (pCi/unit)	MDA Error %
TH-228		6.8681E+000	6.38	5.3261E-002	6.06
	5.400	6.8681E+000	6.38		
TH-229		1.0608E+001	6.06	2.2087E-002	6.06
	4.872	1.0608E+001	6.06		
TH-230		1.6154E+000	7.29	2.0392E-002	6.06
	4.672	1.6154E+000	7.29		
TH-232		1.0120E+001	6.27	2.0331E-002	6.06
	3.997	1.0120E+001	6.27		

Errors quoted at 1.000 sigma

Apex-Alpha™

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133974.cnf
Batch Identification: 160330TH
Sample Identification: LCSWB11KE2
Sample Geometry: Shelf 2
Procedure Description: Th - 1000 min

Detector Name: ALPHA_027
Chamber Serial Number: 13000554A
Detector Serial Number: 84467

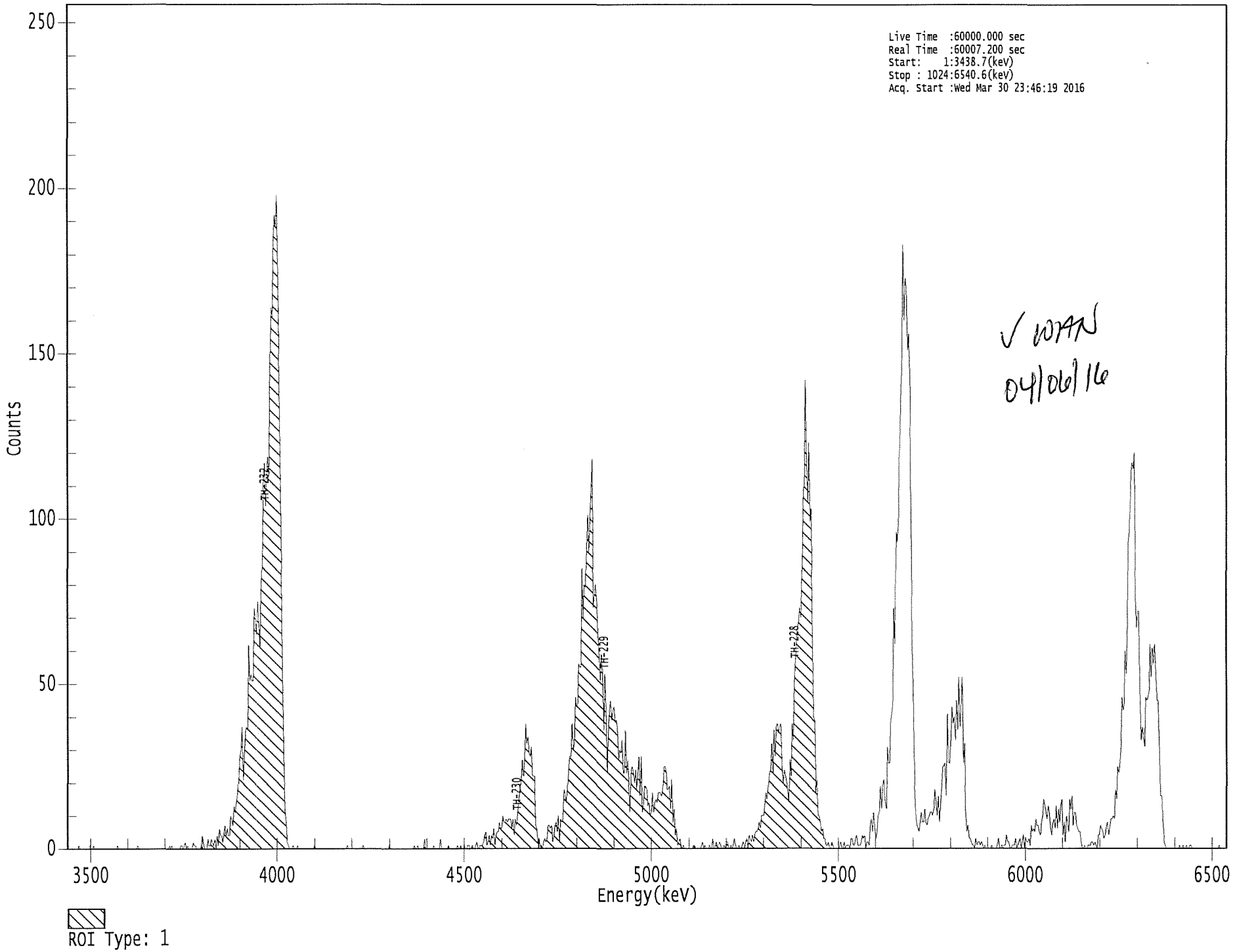
Sample Size: 1.000 unit
Sample Date/Time: 2/11/2016 11:34:29 PM
Acquisition Date/Time: 3/30/2016 11:46:19 PM
Acquisition Live Time: 1000.1 minutes
Acquisition Real Time: 1000.1 minutes

----- NUCLIDE ANALYSIS RESULTS -----

Nuclide Name	Id Conf.	Energy (keV)	Activity (pCi/unit)	MDA (pCi/unit)
TH-228	0.999	5400.00*	6.868E+000 +/- 4.384E-001	5.326E-002 +/- 3.225E-003
TH-229	1.000	4872.00*	1.061E+001 +/- 6.424E-001	2.209E-002 +/- 1.338E-003
TH-230	0.997	4672.00*	1.615E+000 +/- 1.178E-001	2.039E-002 +/- 1.235E-003
TH-232	0.997	3997.00*	1.012E+001 +/- 6.344E-001	2.033E-002 +/- 1.231E-003

Activity reported as of : 3/30/16 11:46:19 PM

0000133974.CNF



✓ WPAN
04/06/16

010163

Apex-Alpha™

010164

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133975.cnf
Detector Name: ALPHA 028
Chamber Serial Number: 13000554B
Detector Serial Number: 84468
Geometry Description: Shelf 2

Energy Calibration: 10/9/2015 10:57:00 PM by Administrator
Shape Calibration: 10/9/2015 10:57:00 PM by Administrator
Efficiency Calibration: 10/9/2015 10:57:01 PM by Administrator
Certificate Name: In7859 - primary

ENERGY / SHAPE CALIBRATION

Version: Alpha Encal v1.1
Energy = 3.431 MeV + 3.0266E-003*ch
FWHM = 2.6322E-002 MeV
Low Tail = 4.0894E-003 MeV

Energy (MeV)	Centroid Channel	Centroid error	FWHM (ch)	FWHM error	TAIL (ch)	TAIL error
4.184	249.15	0.1698	8.76	0.3917	1.23	0.1269
4.761	440.49	0.2047	8.38	0.4653	1.12	0.1427
5.148	566.99	0.0891	8.00	0.2123	1.42	0.0907
5.479	677.40	0.1975	13.21	0.5231	4.28	0.5196

EFFICIENCY CALIBRATION

Version: Alpha Efcal v1.0
Avg Efficiency: 0.2212
Uncertainty: +/- 0.0026

Energy (MeV)	Efficiency	Error
4.184	2.1883E-001	5.09E-003
4.761	2.2429E-001	5.22E-003
5.148	2.1976E-001	5.20E-003
5.479	2.2188E-001	5.17E-003

010165

Apex-Alpha™

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133975.cnf
Batch Identification: 160330TH
Sample Identification: 588049R
Sample Geometry: Shelf 2
Procedure Description: Th - 1000 min

Detector Name: ALPHA_028
Chamber Serial Number: 13000554B
Detector Serial Number: 84468
Env. Background: System Bkgd 121755
Reagent Blank: <not performed>

Sample Size: 1.000 +/- 0.0000 unit
Sample Date/Time: 1/15/2016 11:34:29 PM
Acquisition Date/Time: 3/30/2016 11:46:21 PM
Acquisition Live Time: 1000.0 minutes
Acquisition Real Time: 1000.1 minutes

Tracer Certificate: Th229 056-Rad-Sol3
Tracer Quantity: 0.200 mL
Effective Efficiency: 0.1962 +/- 0.0036
Counting Efficiency: 0.2212 +/- 0.0026 on 10/9/2015 10:57:01 PM
Chem. Recovery Factor: 0.8874 +/- 0.0193

Peak Match Tolerance: 0.200 MeV

PEAK Location REPORT

Nuclide		Left Channel	Channel Width	Right Channel	Left Energy Marker	Right Energy Marker
TH-228		551	133	683	5098.4	5497.9
TH-229	T	424	124	547	4714.1	5086.3
TH-230		296	127	422	4326.7	4708.0
TH-232		120	102	221	3794.0	4099.7

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-228		5.338	22.00	23.18	2.00	0.00E+000	3.0
TH-229	T	4.881	4254.00	1.53	0.00	0.00E+000	49.7
TH-230		4.648	12730.00	0.89	0.00	0.00E+000	31.4
TH-232		3.956	58.00	13.24	0.00	0.00E+000	3.0

010166

Apex-Alpha™

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133975.cnf
Batch Identification: 160330TH
Sample Identification: 588049R
Sample Geometry: Shelf 2
Procedure Description: Th - 1000 min

Detector Name: ALPHA_028
Chamber Serial Number: 13000554B
Detector Serial Number: 84468

Sample Size: 1.000 unit
Sample Date/Time: 1/15/2016 11:34:29 PM
Acquisition Date/Time: 3/30/2016 11:46:21 PM
Acquisition Live Time: 1000.1 minutes
Acquisition Real Time: 1000.1 minutes

NUCLIDE ACTIVITY REPORT

Nuclide	Energy (MeV)	Activity (pCi/unit)	Activity Error %	MDA (pCi/unit)	MDA Error %
TH-228		5.4400E-002	23.95	3.0414E-002	6.02
	5.400	5.4400E-002	23.95		
TH-229		1.0608E+001	6.02	1.9076E-002	6.02
	4.872	1.0608E+001	6.02		
TH-230		2.9307E+001	6.09	1.7612E-002	6.02
	4.672	2.9307E+001	6.09		
TH-232		1.3313E-001	14.55	1.7559E-002	6.02
	3.997	1.3313E-001	14.55		

Errors quoted at 1.000 sigma

010167

Apex-Alpha™

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133975.cnf
Batch Identification: 160330TH
Sample Identification: 588049R
Sample Geometry: Shelf 2
Procedure Description: Th - 1000 min

Detector Name: ALPHA_028
Chamber Serial Number: 13000554B
Detector Serial Number: 84468

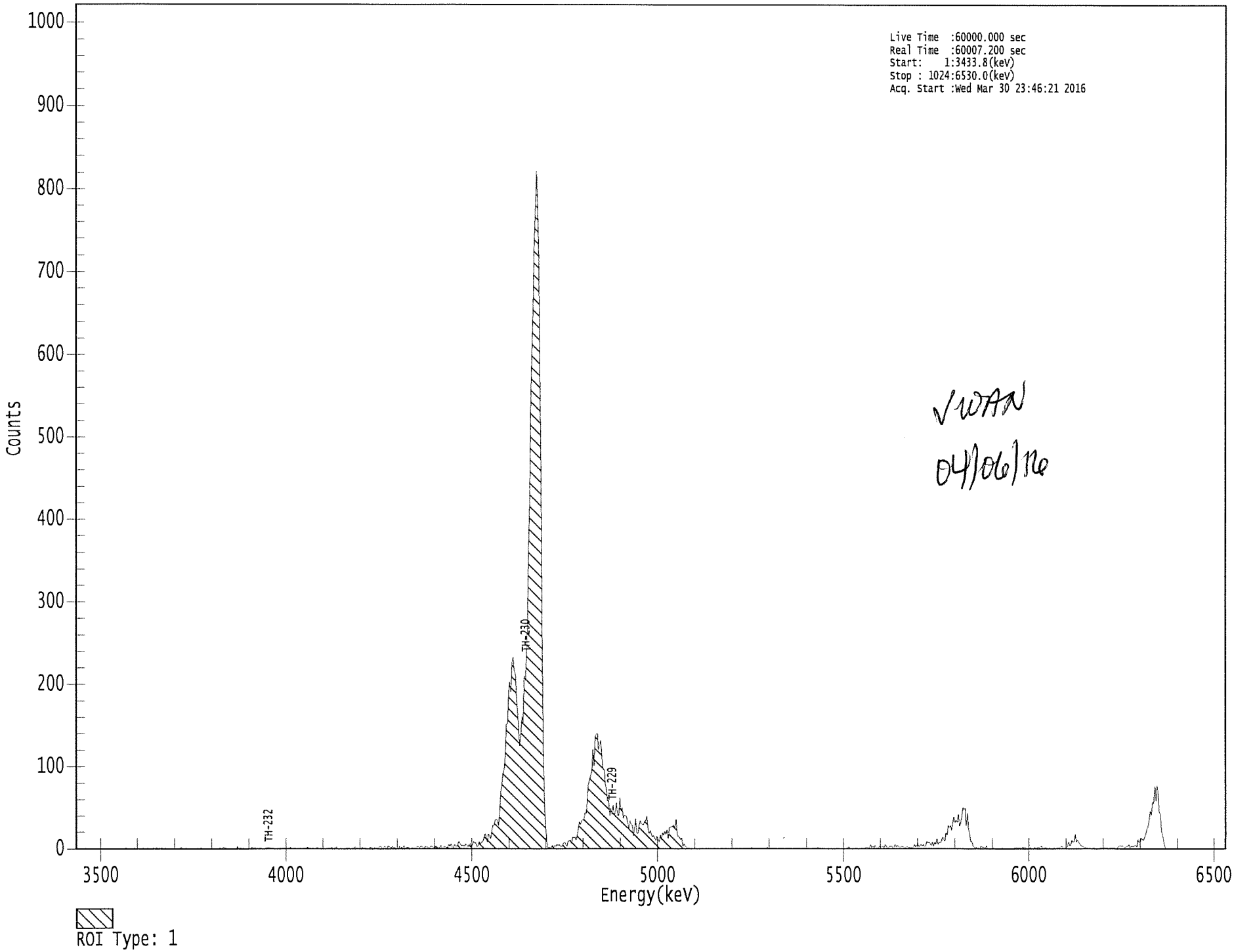
Sample Size: 1.000 unit
Sample Date/Time: 1/15/2016 11:34:29 PM
Acquisition Date/Time: 3/30/2016 11:46:21 PM
Acquisition Live Time: 1000.1 minutes
Acquisition Real Time: 1000.1 minutes

----- NUCLIDE ANALYSIS RESULTS -----

Nuclide Name	Id Conf.	Energy (keV)	Activity (pCi/unit)	MDA (pCi/unit)
TH-228	0.985	5400.00*	5.440E-002 +/- 1.303E-002	3.041E-002 +/- 1.832E-003
TH-229	1.000	4872.00*	1.061E+001 +/- 6.391E-001	1.908E-002 +/- 1.149E-003
TH-230	0.998	4672.00*	2.931E+001 +/- 1.785E+000	1.761E-002 +/- 1.061E-003
TH-232	0.993	3997.00*	1.331E-001 +/- 1.937E-002	1.756E-002 +/- 1.058E-003

Activity reported as of : 3/30/16 11:46:21 PM

0000133975.CNF



VOAN
04/06/16

0101698

010169

Apex-Alpha™

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133976.cnf
Detector Name: ALPHA_029
Chamber Serial Number: 13000555A
Detector Serial Number: 84469
Geometry Description: Shelf 2

Energy Calibration: 1/7/2016 2:44:58 PM by Administrator
Shape Calibration: 1/7/2016 2:44:58 PM by Administrator
Efficiency Calibration: 1/7/2016 2:44:59 PM by Administrator
Certificate Name: In7860 - primary

ENERGY / SHAPE CALIBRATION

Version: Alpha Encal v1.1
Energy = 3.430 MeV + 3.0225E-003*ch
FWHM = 2.9405E-002 MeV
Low Tail = 4.7908E-003 MeV

Energy (MeV)	Centroid Channel	Centroid error	FWHM (ch)	FWHM error	TAIL (ch)	TAIL error
4.184	249.87	0.2149	9.77	0.5046	1.58	0.1933
4.761	441.68	0.2697	8.33	0.6065	1.04	0.1726
5.148	567.48	0.1383	9.40	0.3365	1.86	0.1654
5.479	678.70	0.2278	12.00	0.5875	3.29	0.4507

EFFICIENCY CALIBRATION

Version: Alpha Efcal v1.0
Avg Efficiency: 0.2236
Uncertainty: +/- 0.0023

Energy (MeV)	Efficiency	Error
4.184	2.2063E-001	4.54E-003
4.761	2.2212E-001	4.58E-003
5.148	2.3199E-001	4.63E-003
5.479	2.2000E-001	4.51E-003

010170

Apex-Alpha™

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133976.cnf
Batch Identification: 160330TH
Sample Identification: 588556R
Sample Geometry: Shelf 2
Procedure Description: Th - 1000 min

Detector Name: ALPHA_029
Chamber Serial Number: 13000555A
Detector Serial Number: 84469
Env. Background: System Bkgd 121756
Reagent Blank: <not performed>

Sample Size: 1.000 +/- 0.0000 unit
Sample Date/Time: 1/15/2016 11:34:29 PM
Acquisition Date/Time: 3/30/2016 11:46:22 PM
Acquisition Live Time: 1000.0 minutes
Acquisition Real Time: 1000.1 minutes

Tracer Certificate: Th229 056-Rad-Sol3
Tracer Quantity: 0.200 mL
Effective Efficiency: 0.1998 +/- 0.0036
Counting Efficiency: 0.2236 +/- 0.0023 on 1/7/2016 2:44:59 PM
Chem. Recovery Factor: 0.8937 +/- 0.0186

Peak Match Tolerance: 0.200 MeV

PEAK Location REPORT

Nuclide		Left Channel	Channel Width	Right Channel	Left Energy Marker	Right Energy Marker
TH-228		552	133	684	5098.8	5497.8
TH-229	T	425	124	548	4715.0	5086.7
TH-230		297	128	424	4328.1	4711.9
TH-232		121	101	221	3796.1	4098.4

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-228		5.387	16.00	30.62	4.00	0.00E+000	3.0
TH-229	T	4.882	4332.00	1.52	0.00	0.00E+000	37.9
TH-230		4.650	11760.00	0.92	0.00	0.00E+000	32.6
TH-232		3.957	27.00	19.60	0.00	0.00E+000	3.0

010171

Apex-Alpha™

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133976.cnf
Batch Identification: 160330TH
Sample Identification: 588556R
Sample Geometry: Shelf 2
Procedure Description: Th - 1000 min

Detector Name: ALPHA_029
Chamber Serial Number: 13000555A
Detector Serial Number: 84469

Sample Size: 1.000 unit
Sample Date/Time: 1/15/2016 11:34:29 PM
Acquisition Date/Time: 3/30/2016 11:46:22 PM
Acquisition Live Time: 1000.1 minutes
Acquisition Real Time: 1000.1 minutes

NUCLIDE ACTIVITY REPORT

Nuclide	Energy (MeV)	Activity (pCi/unit)	Activity Error %	MDA (pCi/unit)	MDA Error %
TH-228		3.8851E-002	31.21	3.9221E-002	6.02
	5.400	3.8851E-002	31.21		
TH-229		1.0608E+001	6.02	1.8733E-002	6.02
	4.872	1.0608E+001	6.02		
TH-230		2.6587E+001	6.09	1.7295E-002	6.02
	4.672	2.6587E+001	6.09		
TH-232		6.0858E-002	20.50	1.7243E-002	6.02
	3.997	6.0858E-002	20.50		

Errors quoted at 1.000 sigma

010172

Apex-Alpha™

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133976.cnf
Batch Identification: 160330TH
Sample Identification: 588556R
Sample Geometry: Shelf 2
Procedure Description: Th - 1000 min

Detector Name: ALPHA_029
Chamber Serial Number: 13000555A
Detector Serial Number: 84469

Sample Size: 1.000 unit
Sample Date/Time: 1/15/2016 11:34:29 PM
Acquisition Date/Time: 3/30/2016 11:46:22 PM
Acquisition Live Time: 1000.1 minutes
Acquisition Real Time: 1000.1 minutes

----- NUCLIDE ANALYSIS RESULTS -----

Nuclide Name	Id Conf.	Energy (keV)	Activity (pCi/unit)	MDA (pCi/unit)
TH-228	0.999	5400.00*	3.885E-002 +/- 1.212E-002	3.922E-002 +/- 2.362E-003
TH-229	1.000	4872.00*	1.061E+001 +/- 6.387E-001	1.873E-002 +/- 1.128E-003
TH-230	0.998	4672.00*	2.659E+001 +/- 1.620E+000	1.729E-002 +/- 1.041E-003
TH-232	0.993	3997.00*	6.086E-002 +/- 1.248E-002	1.724E-002 +/- 1.038E-003

Activity reported as of : 3/30/16 11:46:22 PM

010173

Apex-Alpha™

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133976.cnf
Detector Name: ALPHA 029
Chamber Serial Number: 13000555A
Detector Serial Number: 84469
Geometry Description: Shelf 2

Energy Calibration: 1/7/2016 2:44:58 PM by Administrator
Shape Calibration: 1/7/2016 2:44:58 PM by Administrator
Efficiency Calibration: 1/7/2016 2:44:59 PM by Administrator
Certificate Name: In7860 - primary

ENERGY / SHAPE CALIBRATION

Version: Alpha Encal v1.1
Energy = 3.430 MeV + 3.0225E-003*ch
FWHM = 2.9405E-002 MeV
Low Tail = 4.7908E-003 MeV

Energy (MeV)	Centroid Channel	Centroid error	FWHM (ch)	FWHM error	TAIL (ch)	TAIL error
4.184	249.87	0.2149	9.77	0.5046	1.58	0.1933
4.761	441.68	0.2697	8.33	0.6065	1.04	0.1726
5.148	567.48	0.1383	9.40	0.3365	1.86	0.1654
5.479	678.70	0.2278	12.00	0.5875	3.29	0.4507

EFFICIENCY CALIBRATION

Version: Alpha Efcal v1.0
Avg Efficiency: 0.2236
Uncertainty: +/- 0.0023

Energy (MeV)	Efficiency	Error
4.184	2.2063E-001	4.54E-003
4.761	2.2212E-001	4.58E-003
5.148	2.3199E-001	4.63E-003
5.479	2.2000E-001	4.51E-003

010174

Apex-Alpha™

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133976.cnf
Batch Identification: 160330TH
Sample Identification: 588556R
Sample Geometry: Shelf 2
Procedure Description: Th - 1000 min

Detector Name: ALPHA_029
Chamber Serial Number: 13000555A
Detector Serial Number: 84469
Env. Background: System Bkgd 121756
Reagent Blank: <not performed>

Sample Size: 1.000 +/- 0.0000 unit
Sample Date/Time: 1/15/2016 11:34:29 PM
Acquisition Date/Time: 3/30/2016 11:46:22 PM
Acquisition Live Time: 1000.0 minutes
Acquisition Real Time: 1000.1 minutes

Tracer Certificate: Th229 056-Rad-Sol3
Tracer Quantity: 0.200 mL
Effective Efficiency: 0.1998 +/- 0.0036
Counting Efficiency: 0.2236 +/- 0.0023 on 1/7/2016 2:44:59 PM
Chem. Recovery Factor: 0.8937 +/- 0.0186

Peak Match Tolerance: 0.200 MeV

PEAK Location REPORT

Nuclide		Left Channel	Channel Width	Right Channel	Left Energy Marker	Right Energy Marker
TH-228		552	133	684	5098.8	5497.8
TH-229	T	425	124	548	4715.0	5086.7
TH-230		297	128	424	4328.1	4711.9
TH-232		121	101	221	3796.1	4098.4

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-228		5.387	16.00	30.62	4.00	0.00E+000	3.0
TH-229	T	4.882	4332.00	1.52	0.00	0.00E+000	37.9
TH-230		4.650	11760.00	0.92	0.00	0.00E+000	32.6
TH-232		3.957	27.00	19.60	0.00	0.00E+000	3.0

010175

Apex-Alpha™

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133976.cnf
Batch Identification: 160330TH
Sample Identification: 588556R
Sample Geometry: Shelf 2
Procedure Description: Th - 1000 min

Detector Name: ALPHA_029
Chamber Serial Number: 13000555A
Detector Serial Number: 84469

Sample Size: 1.000 unit
Sample Date/Time: 1/15/2016 11:34:29 PM
Acquisition Date/Time: 3/30/2016 11:46:22 PM
Acquisition Live Time: 1000.1 minutes
Acquisition Real Time: 1000.1 minutes

NUCLIDE ACTIVITY REPORT

Nuclide	Energy (MeV)	Activity (pCi/unit)	Activity Error %	MDA (pCi/unit)	MDA Error %
TH-228		3.8851E-002	31.21	3.9221E-002	6.02
	5.400	3.8851E-002	31.21		
TH-229		1.0608E+001	6.02	1.8733E-002	6.02
	4.872	1.0608E+001	6.02		
TH-230		2.6587E+001	6.09	1.7295E-002	6.02
	4.672	2.6587E+001	6.09		
TH-232		6.0858E-002	20.50	1.7243E-002	6.02
	3.997	6.0858E-002	20.50		

Errors quoted at 1.000 sigma

010176

Apex-Alpha™

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133976.cnf
Batch Identification: 160330TH
Sample Identification: 588556R
Sample Geometry: Shelf 2
Procedure Description: Th - 1000 min

Detector Name: ALPHA_029
Chamber Serial Number: 13000555A
Detector Serial Number: 84469

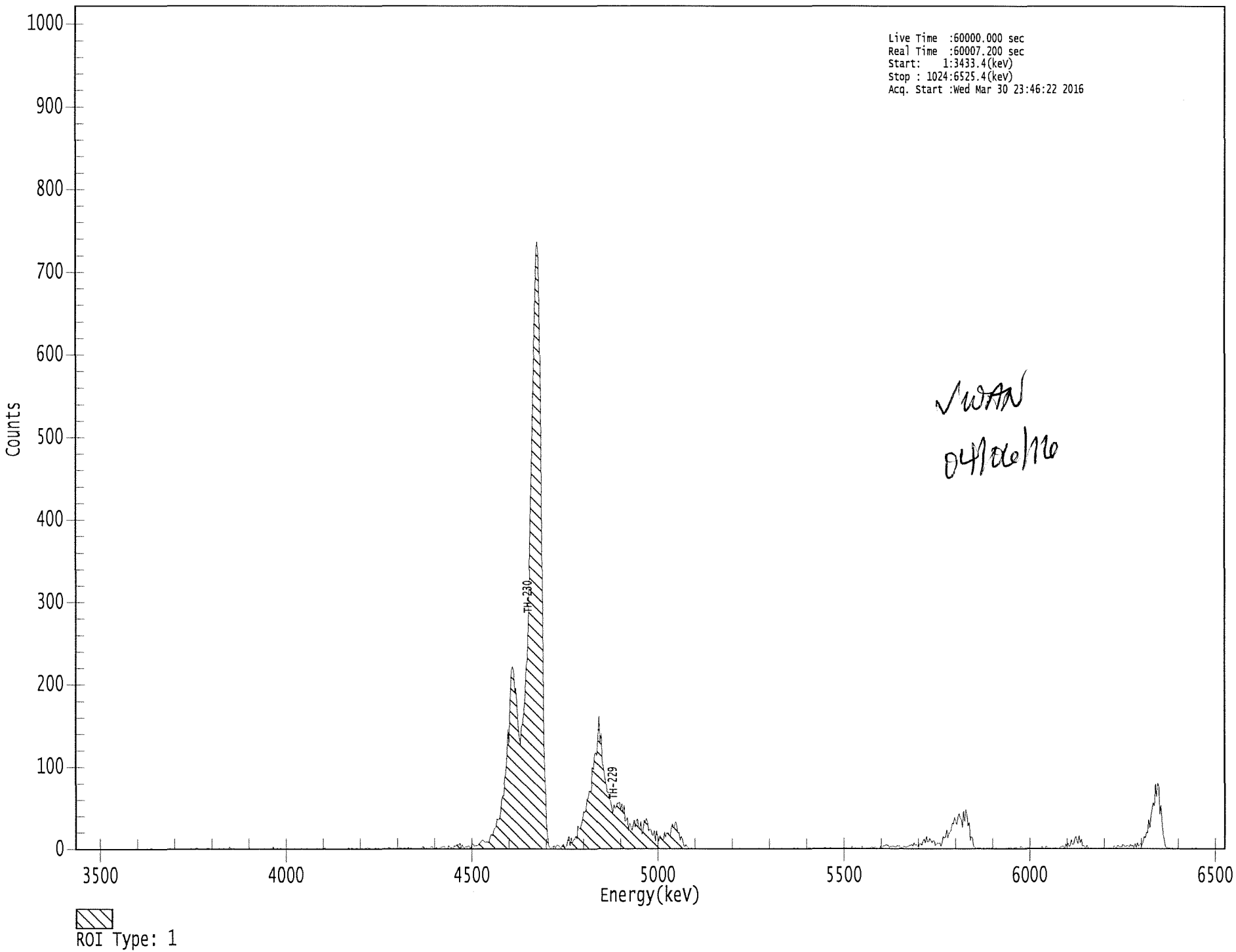
Sample Size: 1.000 unit
Sample Date/Time: 1/15/2016 11:34:29 PM
Acquisition Date/Time: 3/30/2016 11:46:22 PM
Acquisition Live Time: 1000.1 minutes
Acquisition Real Time: 1000.1 minutes

----- NUCLIDE ANALYSIS RESULTS -----

Nuclide Name	Id Conf.	Energy (keV)	Activity (pCi/unit)	MDA (pCi/unit)
TH-228	0.999	5400.00*	3.885E-002 +/- 1.212E-002	3.922E-002 +/- 2.362E-003
TH-229	1.000	4872.00*	1.061E+001 +/- 6.387E-001	1.873E-002 +/- 1.128E-003
TH-230	0.998	4672.00*	2.659E+001 +/- 1.620E+000	1.729E-002 +/- 1.041E-003
TH-232	0.993	3997.00*	6.086E-002 +/- 1.248E-002	1.724E-002 +/- 1.038E-003

Activity reported as of : 3/30/16 11:46:22 PM

0000133976.CNF



JWAN
04/06/16

010177

010178

Apex-Alpha™

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133977.cnf
Detector Name: ALPHA 030
Chamber Serial Number: 13000555B
Detector Serial Number: 84470
Geometry Description: Shelf 2

Energy Calibration: 10/10/2015 2:12:05 AM by Administrator
Shape Calibration: 10/10/2015 2:12:05 AM by Administrator
Efficiency Calibration: 10/10/2015 2:12:06 AM by Administrator
Certificate Name: In7859 - primary

ENERGY / SHAPE CALIBRATION

Version: Alpha Encal v1.1
Energy = 3.426 MeV + 3.0217E-003*ch
FWHM = 2.9379E-002 MeV
Low Tail = 4.2876E-003 MeV

Energy (MeV)	Centroid Channel	Centroid error	FWHM (ch)	FWHM error	TAIL (ch)	TAIL error
4.184	250.55	0.2335	9.63	0.5519	1.55	0.2100
4.761	442.55	0.2506	8.31	0.5618	1.02	0.1548
5.148	569.42	0.1325	8.53	0.3166	1.45	0.1286
5.479	679.45	0.1885	13.88	0.5004	4.63	0.5232

EFFICIENCY CALIBRATION

Version: Alpha Efcal v1.0
Avg Efficiency: 0.2118
Uncertainty: +/- 0.0025

Energy (MeV)	Efficiency	Error
4.184	2.1211E-001	4.98E-003
4.761	2.1002E-001	4.98E-003
5.148	2.1857E-001	5.18E-003
5.479	2.0701E-001	4.92E-003

010179

Apex-Alpha™

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133977.cnf
Batch Identification: 160330TH
Sample Identification: 588556DR
Sample Geometry: Shelf 2
Procedure Description: Th - 1000 min

Detector Name: ALPHA_030
Chamber Serial Number: 13000555B
Detector Serial Number: 84470
Env. Background: System Bkgd 121757
Reagent Blank: <not performed>

Sample Size: 1.000 +/- 0.0000 unit
Sample Date/Time: 1/15/2016 11:34:29 PM
Acquisition Date/Time: 3/30/2016 11:46:24 PM
Acquisition Live Time: 1000.0 minutes
Acquisition Real Time: 1000.1 minutes

Tracer Certificate: Th229 056-Rad-Sol3
Tracer Quantity: 0.200 mL
Effective Efficiency: 0.1881 +/- 0.0035
Counting Efficiency: 0.2118 +/- 0.0025 on 10/10/2015 2:12:06 AM
Chem. Recovery Factor: 0.8881 +/- 0.0196

Peak Match Tolerance: 0.200 MeV

PEAK Location REPORT

Nuclide		Left Channel	Channel Width	Right Channel	Left Energy Marker	Right Energy Marker
TH-228		553	134	686	5097.5	5499.3
TH-229	T	424	127	550	4707.7	5088.4
TH-230		298	127	424	4326.9	4707.7
TH-232		122	101	222	3795.1	4097.3

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-228		5.333	31.00	20.66	5.00	0.00E+000	3.8
TH-229	T	4.877	4077.00	1.57	0.00	0.00E+000	49.7
TH-230		4.645	10794.00	0.96	1.00	0.00E+000	31.0
TH-232		3.967	41.00	15.81	0.00	0.00E+000	3.0

010180

Apex-Alpha™

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133977.cnf
Batch Identification: 160330TH
Sample Identification: 588556DR
Sample Geometry: Shelf 2
Procedure Description: Th - 1000 min

Detector Name: ALPHA_030
Chamber Serial Number: 13000555B
Detector Serial Number: 84470

Sample Size: 1.000 unit
Sample Date/Time: 1/15/2016 11:34:29 PM
Acquisition Date/Time: 3/30/2016 11:46:24 PM
Acquisition Live Time: 1000.1 minutes
Acquisition Real Time: 1000.1 minutes

NUCLIDE ACTIVITY REPORT

Nuclide	Energy (MeV)	Activity (pCi/unit)	Activity Error %	MDA (pCi/unit)	MDA Error %
TH-228		7.9982E-002	21.52	4.5679E-002	6.03
	5.400	7.9982E-002	21.52		
TH-229		1.0608E+001	6.03	1.9904E-002	6.03
	4.872	1.0608E+001	6.03		
TH-230		2.5929E+001	6.11	2.3003E-002	6.03
	4.672	2.5929E+001	6.11		
TH-232		9.8193E-002	16.92	1.8321E-002	6.03
	3.997	9.8193E-002	16.92		

Errors quoted at 1.000 sigma

010181

Apex-Alpha™

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133977.cnf
Batch Identification: 160330TH
Sample Identification: 588556DR
Sample Geometry: Shelf 2
Procedure Description: Th - 1000 min

Detector Name: ALPHA_030
Chamber Serial Number: 13000555B
Detector Serial Number: 84470

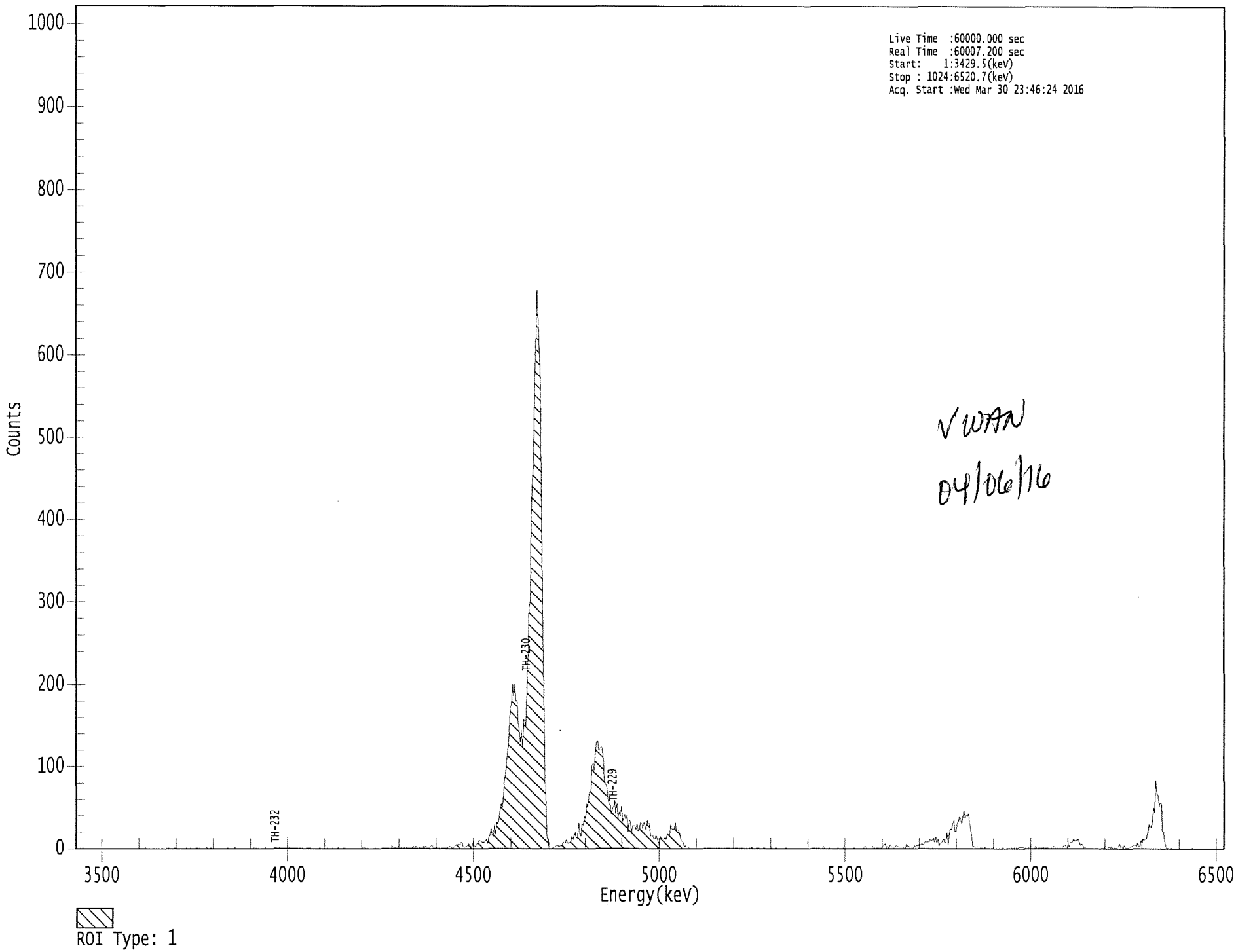
Sample Size: 1.000 unit
Sample Date/Time: 1/15/2016 11:34:29 PM
Acquisition Date/Time: 3/30/2016 11:46:24 PM
Acquisition Live Time: 1000.1 minutes
Acquisition Real Time: 1000.1 minutes

----- NUCLIDE ANALYSIS RESULTS -----

Nuclide Name	Id Conf.	Energy (keV)	Activity (pCi/unit)	MDA (pCi/unit)
TH-228	0.982	5400.00*	7.998E-002 +/- 1.721E-002	4.568E-002 +/- 2.756E-003
TH-229	1.000	4872.00*	1.061E+001 +/- 6.400E-001	1.990E-002 +/- 1.201E-003
TH-230	0.997	4672.00*	2.593E+001 +/- 1.584E+000	2.300E-002 +/- 1.388E-003
TH-232	0.996	3997.00*	9.819E-002 +/- 1.661E-002	1.832E-002 +/- 1.105E-003

Activity reported as of : 3/30/16 11:46:24 PM

0000133977.CNF



V WAN
04/06/16

010182

Apex-Alpha™

010183

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133978.cnf
Detector Name: ALPHA_031
Chamber Serial Number: 13000558A
Detector Serial Number: 84471
Geometry Description: Shelf 2

Energy Calibration: 11/7/2015 12:59:41 AM by Administrator
Shape Calibration: 11/7/2015 12:59:41 AM by Administrator
Efficiency Calibration: 11/7/2015 12:59:42 AM by Administrator
Certificate Name: In7860 - primary

ENERGY / SHAPE CALIBRATION

Version: Alpha Encal v1.1
Energy = 3.432 MeV + 3.0200E-003*ch
FWHM = 2.8968E-002 MeV
Low Tail = 4.3062E-003 MeV

Energy (MeV)	Centroid Channel	Centroid error	FWHM (ch)	FWHM error	TAIL (ch)	TAIL error
4.184	249.37	0.1796	8.97	0.4122	1.24	0.1312
4.761	440.89	0.2603	8.67	0.5904	1.13	0.1760
5.148	567.41	0.1327	8.78	0.3181	1.56	0.1362
5.479	678.27	0.1937	13.26	0.5057	3.92	0.4360

EFFICIENCY CALIBRATION

Version: Alpha Efcal v1.0
Avg Efficiency: 0.2251
Uncertainty: +/- 0.0023

Energy (MeV)	Efficiency	Error
4.184	2.2995E-001	4.66E-003
4.761	2.2045E-001	4.56E-003
5.148	2.2853E-001	4.58E-003
5.479	2.2185E-001	4.54E-003

010184

Apex-Alpha™

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133978.cnf
Batch Identification: 160330TH
Sample Identification: 590212R
Sample Geometry: Shelf 2
Procedure Description: Th - 1000 min

Detector Name: ALPHA_031
Chamber Serial Number: 13000558A
Detector Serial Number: 84471
Env. Background: System Bkgd 121758
Reagent Blank: <not performed>

Sample Size: 1.000 +/- 0.0000 unit
Sample Date/Time: 1/15/2016 11:34:29 PM
Acquisition Date/Time: 3/30/2016 11:46:27 PM
Acquisition Live Time: 1000.0 minutes
Acquisition Real Time: 1000.1 minutes

Tracer Certificate: Th229 056-Rad-Sol3
Tracer Quantity: 0.200 mL
Effective Efficiency: 0.1997 +/- 0.0036
Counting Efficiency: 0.2251 +/- 0.0023 on 11/7/2015 12:59:42 AM
Chem. Recovery Factor: 0.8871 +/- 0.0185

Peak Match Tolerance: 0.200 MeV

PEAK Location REPORT

Nuclide		Left Channel	Channel Width	Right Channel	Left Energy Marker	Right Energy Marker
TH-228		552	133	684	5099.5	5498.1
TH-229	T	427	124	550	4722.0	5093.5
TH-230		296	131	426	4326.4	4719.0
TH-232		120	102	221	3794.9	4099.9

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-228		5.378	22.00	24.05	3.00	0.00E+000	3.8
TH-229	T	4.884	4329.00	1.52	0.00	0.00E+000	42.6
TH-230		4.652	13341.00	0.87	1.00	0.00E+000	32.8
TH-232		3.970	27.00	19.60	0.00	0.00E+000	3.0

010185

Apex-Alpha™

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133978.cnf
Batch Identification: 160330TH
Sample Identification: 590212R
Sample Geometry: Shelf 2
Procedure Description: Th - 1000 min

Detector Name: ALPHA_031
Chamber Serial Number: 13000558A
Detector Serial Number: 84471

Sample Size: 1.000 unit
Sample Date/Time: 1/15/2016 11:34:29 PM
Acquisition Date/Time: 3/30/2016 11:46:27 PM
Acquisition Live Time: 1000.1 minutes
Acquisition Real Time: 1000.1 minutes

NUCLIDE ACTIVITY REPORT

Nuclide	Energy (MeV)	Activity (pCi/unit)	Activity Error %	MDA (pCi/unit)	MDA Error %
TH-228		5.3457E-002	24.79	3.4966E-002	6.02
	5.400	5.3457E-002	24.79		
TH-229		1.0608E+001	6.02	1.8746E-002	6.02
	4.872	1.0608E+001	6.02		
TH-230		3.0182E+001	6.08	2.1664E-002	6.02
	4.672	3.0182E+001	6.08		
TH-232		6.0900E-002	20.50	1.7255E-002	6.02
	3.997	6.0900E-002	20.50		

Errors quoted at 1.000 sigma

010186

Apex-Alpha™

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133978.cnf
Batch Identification: 160330TH
Sample Identification: 590212R
Sample Geometry: Shelf 2
Procedure Description: Th - 1000 min

Detector Name: ALPHA_031
Chamber Serial Number: 13000558A
Detector Serial Number: 84471

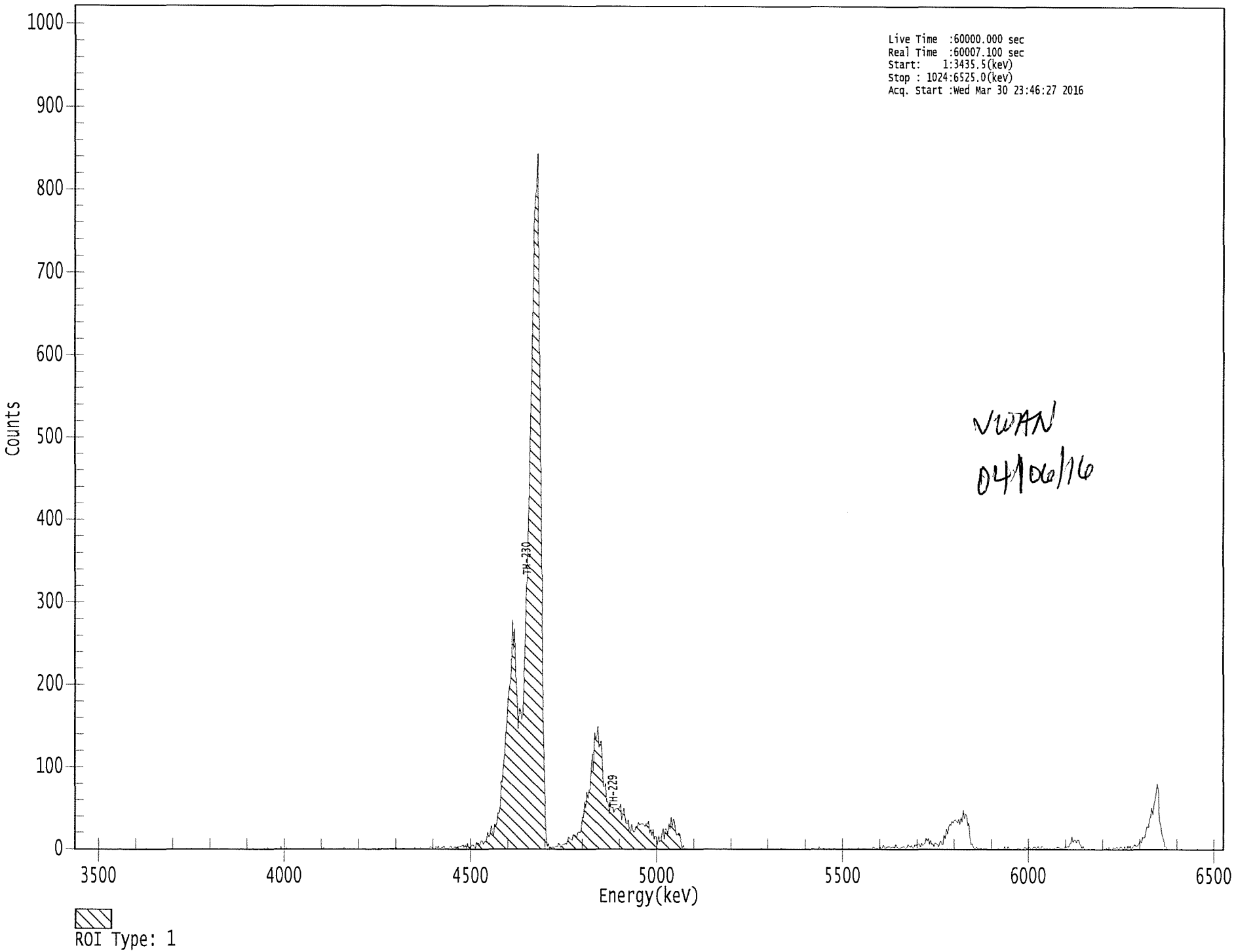
Sample Size: 1.000 unit
Sample Date/Time: 1/15/2016 11:34:29 PM
Acquisition Date/Time: 3/30/2016 11:46:27 PM
Acquisition Live Time: 1000.1 minutes
Acquisition Real Time: 1000.1 minutes

----- NUCLIDE ANALYSIS RESULTS -----

Nuclide Name	Id Conf.	Energy (keV)	Activity (pCi/unit)	MDA (pCi/unit)
TH-228	0.998	5400.00*	5.346E-002 +/- 1.325E-002	3.497E-002 +/- 2.105E-003
TH-229	0.999	4872.00*	1.061E+001 +/- 6.387E-001	1.875E-002 +/- 1.129E-003
TH-230	0.998	4672.00*	3.018E+001 +/- 1.836E+000	2.166E-002 +/- 1.305E-003
TH-232	0.997	3997.00*	6.090E-002 +/- 1.249E-002	1.725E-002 +/- 1.039E-003

Activity reported as of : 3/30/16 11:46:27 PM

0000133978.CNF



VWAN
04/06/16

010187

Apex-Alpha™

010188

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133979.cnf
Detector Name: ALPHA_032
Chamber Serial Number: 13000558B
Detector Serial Number: 84472
Geometry Description: Shelf 2

Energy Calibration: 10/11/2015 3:46:29 AM by Administrator
Shape Calibration: 10/11/2015 3:46:29 AM by Administrator
Efficiency Calibration: 10/11/2015 3:46:30 AM by Administrator
Certificate Name: In7859 - primary

ENERGY / SHAPE CALIBRATION

Version: Alpha Encal v1.1
Energy = 3.429 MeV + 3.0272E-003*ch
FWHM = 2.9165E-002 MeV
Low Tail = 3.9216E-003 MeV

Energy (MeV)	Centroid Channel	Centroid error	FWHM (ch)	FWHM error	TAIL (ch)	TAIL error
4.184	249.47	0.1810	8.56	0.4114	1.14	0.1250
4.761	440.59	0.2164	8.63	0.4890	1.12	0.1452
5.148	567.56	0.1370	8.58	0.3243	1.42	0.1272
5.479	677.37	0.1834	14.59	0.4909	5.35	0.6045

EFFICIENCY CALIBRATION

Version: Alpha Efcal v1.0
Avg Efficiency: 0.2248
Uncertainty: +/- 0.0026

Energy (MeV)	Efficiency	Error
4.184	2.2159E-001	5.14E-003
4.761	2.2652E-001	5.26E-003
5.148	2.3278E-001	5.42E-003
5.479	2.1912E-001	5.13E-003

010189

Apex-Alpha™

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133979.cnf
Batch Identification: 160330TH
Sample Identification: 590213R
Sample Geometry: Shelf 2
Procedure Description: Th - 1000 min

Detector Name: ALPHA_032
Chamber Serial Number: 13000558B
Detector Serial Number: 84472
Env. Background: System Bkgd 121759
Reagent Blank: <not performed>

Sample Size: 1.000 +/- 0.0000 unit
Sample Date/Time: 1/15/2016 11:34:29 PM
Acquisition Date/Time: 3/30/2016 11:46:30 PM
Acquisition Live Time: 1000.0 minutes
Acquisition Real Time: 1000.1 minutes

Tracer Certificate: Th229 056-Rad-Sol3
Tracer Quantity: 0.200 mL
Effective Efficiency: 0.2022 +/- 0.0037
Counting Efficiency: 0.2248 +/- 0.0026 on 10/11/2015 3:46:30 AM
Chem. Recovery Factor: 0.8996 +/- 0.0194

Peak Match Tolerance: 0.200 MeV

PEAK Location REPORT

Nuclide		Left Channel	Channel Width	Right Channel	Left Energy Marker	Right Energy Marker
TH-228		552	133	684	5100.0	5499.6
TH-229	T	426	125	550	4718.6	5093.9
TH-230		297	126	422	4328.0	4706.4
TH-232		121	101	221	3795.3	4098.0

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-228		5.373	11.00	39.63	4.00	0.00E+000	4.5
TH-229	T	4.880	4383.00	1.51	0.00	0.00E+000	44.2
TH-230		4.649	8771.00	1.07	0.00	0.00E+000	30.2
TH-232		3.971	14.00	27.66	0.00	0.00E+000	3.0

010190

Apex-Alpha™

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133979.cnf
Batch Identification: 160330TH
Sample Identification: 590213R
Sample Geometry: Shelf 2
Procedure Description: Th - 1000 min

Detector Name: ALPHA_032
Chamber Serial Number: 13000558B
Detector Serial Number: 84472

Sample Size: 1.000 unit
Sample Date/Time: 1/15/2016 11:34:29 PM
Acquisition Date/Time: 3/30/2016 11:46:30 PM
Acquisition Live Time: 1000.1 minutes
Acquisition Real Time: 1000.1 minutes

NUCLIDE ACTIVITY REPORT

Nuclide	Energy (MeV)	Activity (pCi/unit)	Activity Error %	MDA (pCi/unit)	MDA Error %
TH-228		2.6399E-002	40.08	3.8764E-002	6.02
	5.400	2.6399E-002	40.08		
TH-229		1.0608E+001	6.02	1.8515E-002	6.02
	4.872	1.0608E+001	6.02		
TH-230		1.9599E+001	6.11	1.7094E-002	6.02
	4.672	1.9599E+001	6.11		
TH-232		3.1189E-002	28.31	1.7042E-002	6.02
	3.997	3.1189E-002	28.31		

Errors quoted at 1.000 sigma

010191

Apex-Alpha™

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133979.cnf
Batch Identification: 160330TH
Sample Identification: 590213R
Sample Geometry: Shelf 2
Procedure Description: Th - 1000 min

Detector Name: ALPHA_032
Chamber Serial Number: 13000558B
Detector Serial Number: 84472

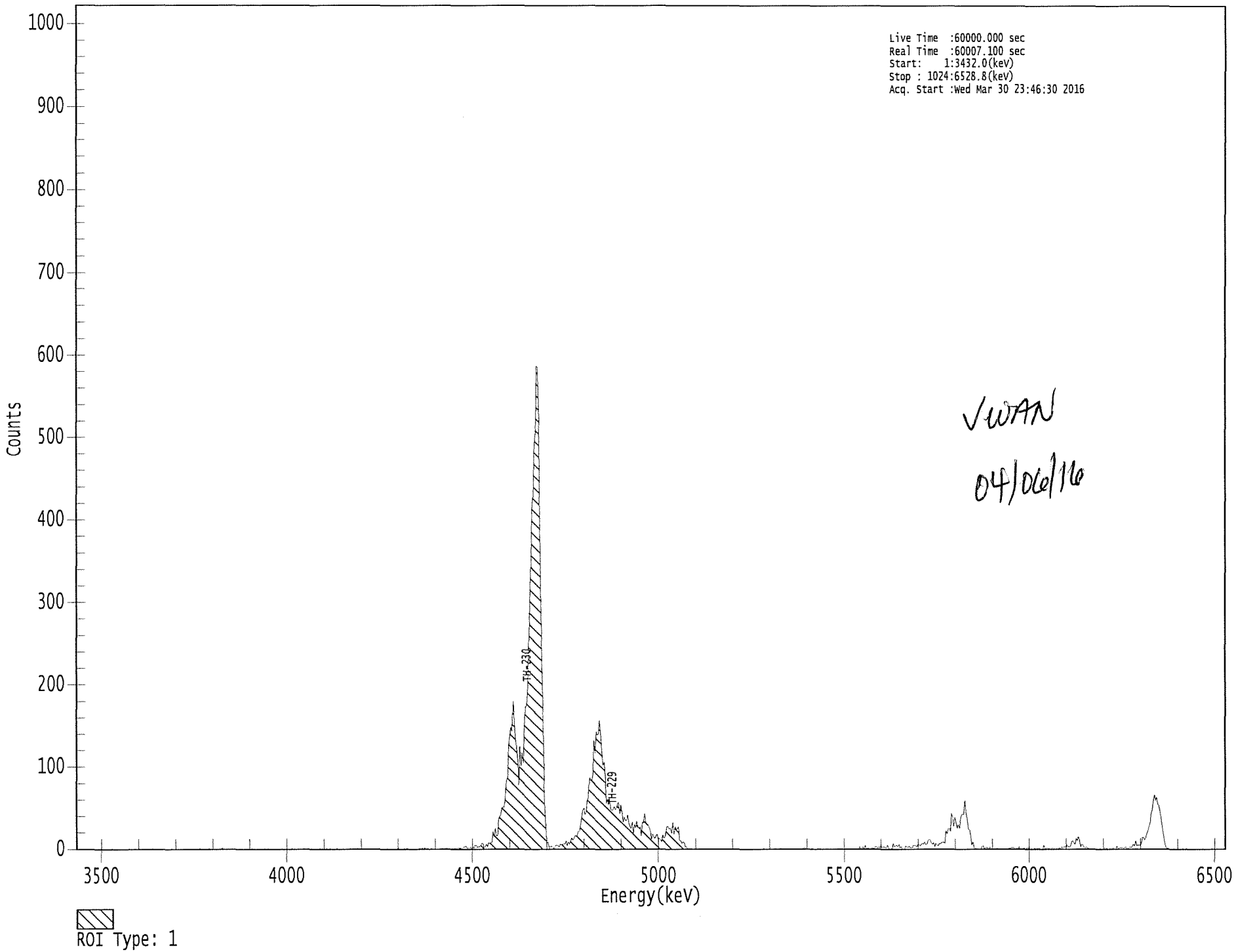
Sample Size: 1.000 unit
Sample Date/Time: 1/15/2016 11:34:29 PM
Acquisition Date/Time: 3/30/2016 11:46:30 PM
Acquisition Live Time: 1000.1 minutes
Acquisition Real Time: 1000.1 minutes

----- NUCLIDE ANALYSIS RESULTS -----

Nuclide Name	Id Conf.	Energy (keV)	Activity (pCi/unit)	MDA (pCi/unit)
TH-228	0.997	5400.00*	2.640E-002 +/- 1.058E-002	3.876E-002 +/- 2.333E-003
TH-229	1.000	4872.00*	1.061E+001 +/- 6.385E-001	1.851E-002 +/- 1.114E-003
TH-230	0.998	4672.00*	1.960E+001 +/- 1.198E+000	1.709E-002 +/- 1.029E-003
TH-232	0.997	3997.00*	3.119E-002 +/- 8.830E-003	1.704E-002 +/- 1.026E-003

Activity reported as of : 3/30/16 11:46:30 PM

0000133979.CNF



JWAN
04/06/16

010192

Apex-Alpha™

010193

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133980.cnf
Detector Name: ALPHA_033
Chamber Serial Number: 13000559A
Detector Serial Number: 84473
Geometry Description: Shelf 2

Energy Calibration: 10/11/2015 8:21:16 PM by Administrator
Shape Calibration: 10/11/2015 8:21:16 PM by Administrator
Efficiency Calibration: 10/11/2015 8:21:17 PM by Administrator
Certificate Name: In7860 - primary

ENERGY / SHAPE CALIBRATION

Version: Alpha Encal v1.1
Energy = 3.431 MeV + 3.0269E-003*ch
FWHM = 2.9865E-002 MeV
Low Tail = 4.7653E-003 MeV

Energy (MeV)	Centroid Channel	Centroid error	FWHM (ch)	FWHM error	TAIL (ch)	TAIL error
4.184	249.00	0.1967	9.97	0.4681	1.75	0.1975
4.761	441.13	0.2385	7.84	0.5381	0.97	0.1496
5.148	566.65	0.1282	9.57	0.3145	1.98	0.1634
5.479	677.50	0.2178	13.06	0.5781	4.33	0.6002

EFFICIENCY CALIBRATION

Version: Alpha Efcal v1.0
Avg Efficiency: 0.2250
Uncertainty: +/- 0.0023

Energy (MeV)	Efficiency	Error
4.184	2.2795E-001	4.63E-003
4.761	2.1786E-001	4.52E-003
5.148	2.3359E-001	4.65E-003
5.479	2.2100E-001	4.53E-003

010194

Apex-Alpha™

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133980.cnf
Batch Identification: 160330TH
Sample Identification: 590214R
Sample Geometry: Shelf 2
Procedure Description: Th - 1000 min

Detector Name: ALPHA_033
Chamber Serial Number: 13000559A
Detector Serial Number: 84473
Env. Background: System Bkgd 121760
Reagent Blank: <not performed>

Sample Size: 1.000 +/- 0.0000 unit
Sample Date/Time: 1/15/2016 11:34:29 PM
Acquisition Date/Time: 3/30/2016 11:46:32 PM
Acquisition Live Time: 1000.0 minutes
Acquisition Real Time: 1000.1 minutes

Tracer Certificate: Th229 056-Rad-Sol3
Tracer Quantity: 0.200 mL
Effective Efficiency: 0.1982 +/- 0.0036
Counting Efficiency: 0.2250 +/- 0.0023 on 10/11/2015 8:21:17 PM
Chem. Recovery Factor: 0.8812 +/- 0.0184

Peak Match Tolerance: 0.200 MeV

PEAK Location REPORT

Nuclide		Left Channel	Channel Width	Right Channel	Left Energy Marker	Right Energy Marker
TH-228		551	133	683	5098.4	5498.0
TH-229	T	427	124	550	4723.1	5095.4
TH-230		296	130	425	4326.6	4717.1
TH-232		121	101	221	3796.9	4099.6

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-228		5.355	37.00	17.72	3.00	0.00E+000	3.8
TH-229	T	4.884	4297.00	1.53	0.00	0.00E+000	43.3
TH-230		4.650	7438.00	1.16	4.00	0.00E+000	33.2
TH-232		3.996	11.00	31.49	0.00	0.00E+000	3.0

010195

Apex-Alpha™

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133980.cnf
Batch Identification: 160330TH
Sample Identification: 590214R
Sample Geometry: Shelf 2
Procedure Description: Th - 1000 min

Detector Name: ALPHA_033
Chamber Serial Number: 13000559A
Detector Serial Number: 84473

Sample Size: 1.000 unit
Sample Date/Time: 1/15/2016 11:34:29 PM
Acquisition Date/Time: 3/30/2016 11:46:32 PM
Acquisition Live Time: 1000.1 minutes
Acquisition Real Time: 1000.1 minutes

NUCLIDE ACTIVITY REPORT

Nuclide	Energy (MeV)	Activity (pCi/unit)	Activity Error %	MDA (pCi/unit)	MDA Error %
TH-228		9.0575E-002	18.72	3.5227E-002	6.02
	5.400	9.0575E-002	18.72		
TH-229		1.0608E+001	6.02	1.8885E-002	6.02
	4.872	1.0608E+001	6.02		
TH-230		1.6953E+001	6.13	3.6814E-002	6.02
	4.672	1.6953E+001	6.13		
TH-232		2.4996E-002	32.06	1.7383E-002	6.02
	3.997	2.4996E-002	32.06		

Errors quoted at 1.000 sigma

010196

Apex-Alpha™

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133980.cnf
Batch Identification: 160330TH
Sample Identification: 590214R
Sample Geometry: Shelf 2
Procedure Description: Th - 1000 min

Detector Name: ALPHA_033
Chamber Serial Number: 13000559A
Detector Serial Number: 84473

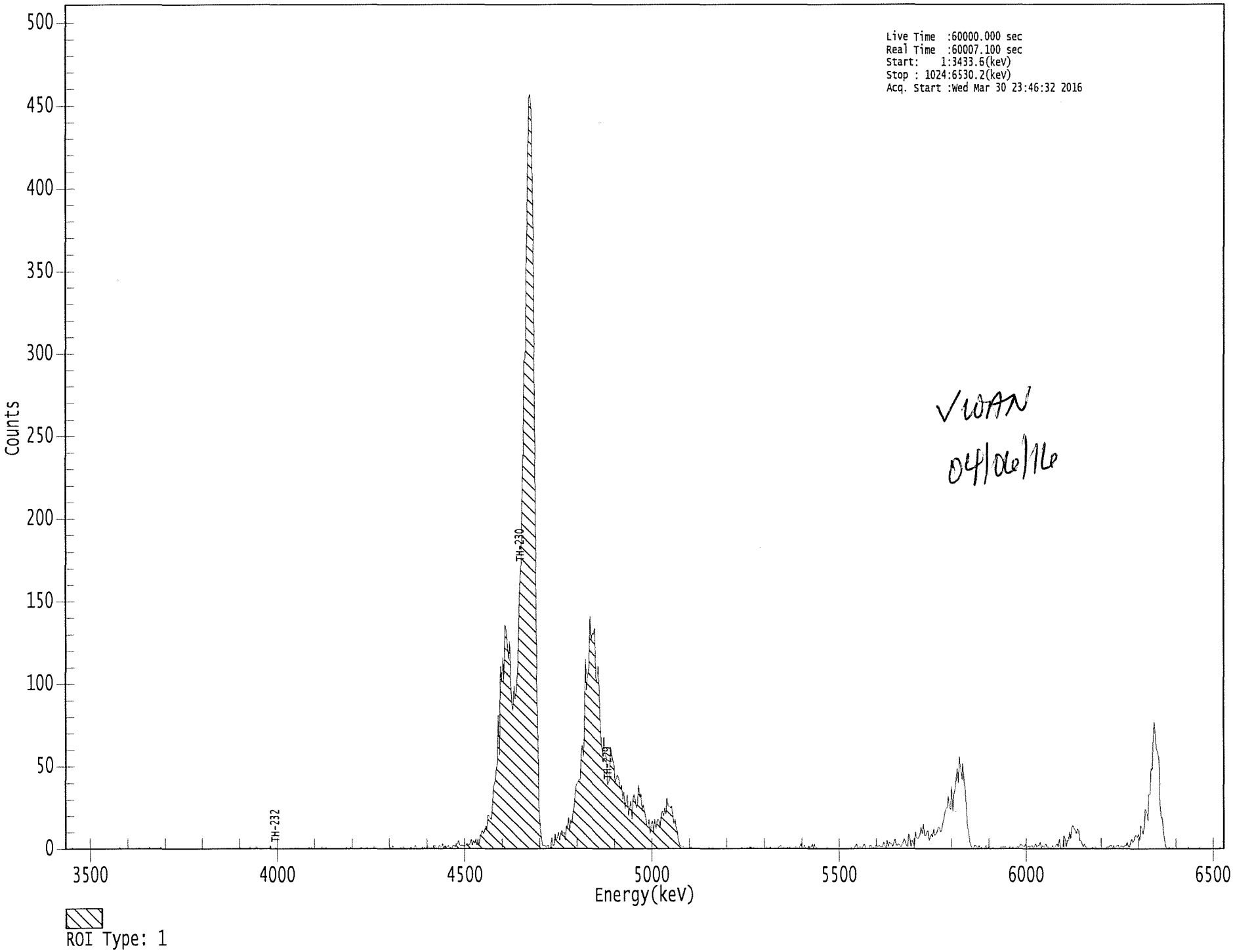
Sample Size: 1.000 unit
Sample Date/Time: 1/15/2016 11:34:29 PM
Acquisition Date/Time: 3/30/2016 11:46:32 PM
Acquisition Live Time: 1000.1 minutes
Acquisition Real Time: 1000.1 minutes

----- NUCLIDE ANALYSIS RESULTS -----

Nuclide Name	Id Conf.	Energy (keV)	Activity (pCi/unit)	MDA (pCi/unit)
TH-228	0.992	5400.00*	9.058E-002 +/- 1.695E-002	3.523E-002 +/- 2.122E-003
TH-229	0.999	4872.00*	1.061E+001 +/- 6.389E-001	1.889E-002 +/- 1.137E-003
TH-230	0.998	4672.00*	1.695E+001 +/- 1.040E+000	3.681E-002 +/- 2.217E-003
TH-232	1.000	3997.00*	2.500E-002 +/- 8.014E-003	1.738E-002 +/- 1.047E-003

Activity reported as of : 3/30/16 11:46:32 PM

0000133980.CNF



✓WAN
04/06/16

010197

Apex-Alpha™

010198

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133981.cnf
Detector Name: ALPHA_034
Chamber Serial Number: 13000559B
Detector Serial Number: 84474
Geometry Description: Shelf 2

Energy Calibration: 10/11/2015 8:21:06 PM by Administrator
Shape Calibration: 10/11/2015 8:21:06 PM by Administrator
Efficiency Calibration: 10/11/2015 8:21:07 PM by Administrator
Certificate Name: In7859 - primary

ENERGY / SHAPE CALIBRATION

Version: Alpha Encal v1.1
Energy = 3.426 MeV + 3.0267E-003*ch
FWHM = 2.8888E-002 MeV
Low Tail = 3.7520E-003 MeV

Energy (MeV)	Centroid Channel	Centroid error	FWHM (ch)	FWHM error	TAIL (ch)	TAIL error
4.184	250.88	0.1731	8.06	0.3911	1.00	0.1092
4.761	442.38	0.2878	7.89	0.6331	0.85	0.1517
5.148	567.96	0.1364	9.46	0.3364	1.96	0.1724
5.479	678.83	0.1787	12.79	0.4722	4.10	0.4629

EFFICIENCY CALIBRATION

Version: Alpha Efcal v1.0
Avg Efficiency: 0.2233
Uncertainty: +/- 0.0026

Energy (MeV)	Efficiency	Error
4.184	2.2304E-001	5.16E-003
4.761	2.3004E-001	5.32E-003
5.148	2.2525E-001	5.30E-003
5.479	2.1556E-001	5.07E-003

010199

Apex-Alpha™

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133981.cnf
Batch Identification: 160330TH
Sample Identification: 591000R
Sample Geometry: Shelf 2
Procedure Description: Th - 1000 min

Detector Name: ALPHA_034
Chamber Serial Number: 13000559B
Detector Serial Number: 84474
Env. Background: System Bkgd 121761
Reagent Blank: <not performed>

Sample Size: 1.000 +/- 0.0000 unit
Sample Date/Time: 1/15/2016 11:34:29 PM
Acquisition Date/Time: 3/30/2016 11:46:33 PM
Acquisition Live Time: 1000.0 minutes
Acquisition Real Time: 1000.1 minutes

Tracer Certificate: Th229 056-Rad-Sol3
Tracer Quantity: 0.200 mL
Effective Efficiency: 0.2019 +/- 0.0037
Counting Efficiency: 0.2233 +/- 0.0026 on 10/11/2015 8:21:07 PM
Chem. Recovery Factor: 0.9044 +/- 0.0195

Peak Match Tolerance: 0.200 MeV

PEAK Location REPORT

Nuclide		Left Channel	Channel Width	Right Channel	Left Energy Marker	Right Energy Marker
TH-228		552	134	685	5097.1	5499.7
TH-229	T	429	123	551	4724.9	5094.1
TH-230		298	130	427	4328.4	4718.8
TH-232		122	101	222	3795.7	4098.3

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-228		5.396	18.00	28.33	4.00	0.00E+000	3.0
TH-229	T	4.881	4377.00	1.51	2.00	0.00E+000	43.0
TH-230		4.650	5891.00	1.30	0.00	0.00E+000	34.3
TH-232		3.965	11.00	31.49	0.00	0.00E+000	3.0

010200

Apex-Alpha™

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133981.cnf
Batch Identification: 160330TH
Sample Identification: 591000R
Sample Geometry: Shelf 2
Procedure Description: Th - 1000 min

Detector Name: ALPHA_034
Chamber Serial Number: 13000559B
Detector Serial Number: 84474

Sample Size: 1.000 unit
Sample Date/Time: 1/15/2016 11:34:29 PM
Acquisition Date/Time: 3/30/2016 11:46:33 PM
Acquisition Live Time: 1000.1 minutes
Acquisition Real Time: 1000.1 minutes

NUCLIDE ACTIVITY REPORT

Nuclide	Energy (MeV)	Activity (pCi/unit)	Activity Error %	MDA (pCi/unit)	MDA Error %
TH-228		4.3258E-002	28.96	3.8818E-002	6.02
	5.400	4.3258E-002	28.96		
TH-229		1.0608E+001	6.02	2.9809E-002	6.02
	4.872	1.0608E+001	6.02		
TH-230		1.3181E+001	6.16	1.7117E-002	6.02
	4.672	1.3181E+001	6.16		
TH-232		2.4539E-002	32.06	1.7066E-002	6.02
	3.997	2.4539E-002	32.06		

Errors quoted at 1.000 sigma

010201

Apex-Alpha™

Sample Description:
Spectrum File: \\V79W-7\AlphaRoot\Data\0000133981.cnf
Batch Identification: 160330TH
Sample Identification: 591000R
Sample Geometry: Shelf 2
Procedure Description: Th - 1000 min

Detector Name: ALPHA_034
Chamber Serial Number: 13000559B
Detector Serial Number: 84474

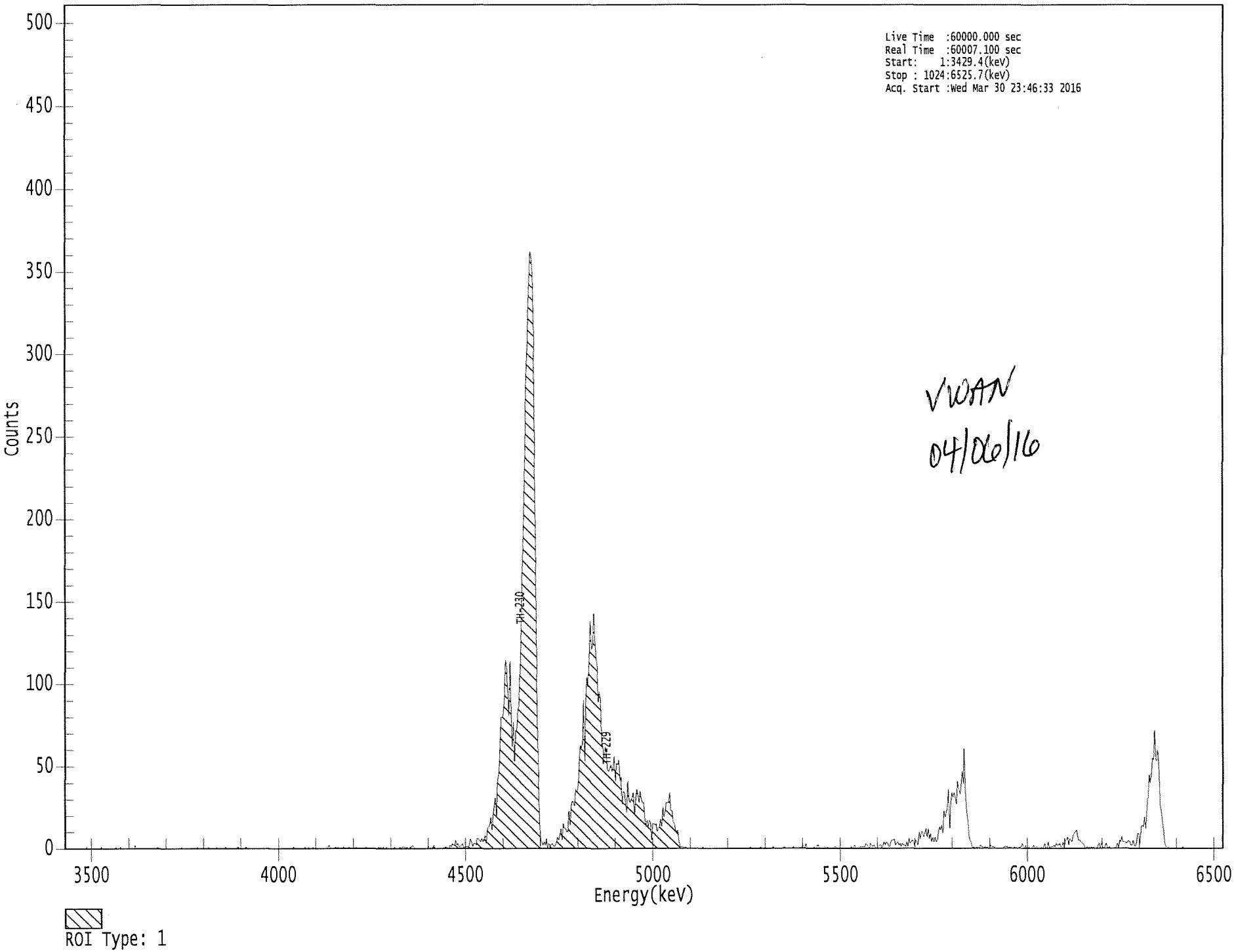
Sample Size: 1.000 unit
Sample Date/Time: 1/15/2016 11:34:29 PM
Acquisition Date/Time: 3/30/2016 11:46:33 PM
Acquisition Live Time: 1000.1 minutes
Acquisition Real Time: 1000.1 minutes

----- NUCLIDE ANALYSIS RESULTS -----

Nuclide Name	Id Conf.	Energy (keV)	Activity (pCi/unit)	MDA (pCi/unit)
TH-228	1.000	5400.00*	4.326E-002 +/- 1.253E-002	3.882E-002 +/- 2.337E-003
TH-229	1.000	4872.00*	1.061E+001 +/- 6.385E-001	2.981E-002 +/- 1.794E-003
TH-230	0.998	4672.00*	1.318E+001 +/- 8.118E-001	1.712E-002 +/- 1.030E-003
TH-232	0.996	3997.00*	2.454E-002 +/- 7.868E-003	1.707E-002 +/- 1.027E-003

Activity reported as of : 3/30/16 11:46:33 PM

0000133981.CNF



010202

010203

SOUTHWEST RESEARCH INSTITUTE
CLIENT: Tetra Tech
TASK ORDER#: 160115-1
SRR#: 56591, 56639, 56785, 56876
SDG: 588049
VTSR: 11.20.15, 12.01.15, 12.01.15, 01.15.16
PROJECT#: 21431.01.001

ICP-AES RAW DATA

010204

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form IIA
Initial and Continuing Calibration Verification

Client: Tetra Tech
Task Order: 160115-1
Result Units: ug/L
Associated Analytical Batches: 20160209-A001

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Initial Calibration Source: SPEX
Continuing Calibration Source: SPEX

Case: 1116399
Project: 21431.01.001

	Initial Calibration Verification				Continuing Calibration Verification						
Analyte	True	Found	%Rec	Limit	True	Found1	%Rec	Found2	%Rec	Limit	M
Aluminum	-	-	-	-	-	-	-	-	-	-	-
Antimony	-	-	-	-	-	-	-	-	-	-	-
Arsenic	-	-	-	-	-	-	-	-	-	-	-
Barium	-	-	-	-	-	-	-	-	-	-	-
Beryllium	-	-	-	-	-	-	-	-	-	-	-
Bismuth	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	-	-	-	-
Cadmium	-	-	-	-	-	-	-	-	-	-	-
Calcium	-	-	-	-	-	-	-	-	-	-	-
Chromium	-	-	-	-	-	-	-	-	-	-	-
Cobalt	-	-	-	-	-	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-	-	-	-	-
Iron	-	-	-	-	-	-	-	-	-	-	-
Lanthanum	-	-	-	-	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-	-	-	-	-
Lithium	5000	5090	101.8%	90%-110%	5000	5110	102.2%	5080	101.6%	90%-110%	P3
Magnesium	-	-	-	-	-	-	-	-	-	-	-
Manganese	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-	-	-	-	-
Nickel	-	-	-	-	-	-	-	-	-	-	-
Palladium	-	-	-	-	-	-	-	-	-	-	-
Phosphorus	-	-	-	-	-	-	-	-	-	-	-
Potassium	20000	20200	101.0%	90%-110%	20000	20200	100.8%	20100	100.7%	90%-110%	P3
Selenium	-	-	-	-	-	-	-	-	-	-	-
Silicon	-	-	-	-	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-	-	-	-	-
Sodium	30000	30500	101.8%	90%-110%	30000	30700	102.4%	30600	101.9%	90%-110%	P3
Strontium	-	-	-	-	-	-	-	-	-	-	-
Sulfur	-	-	-	-	-	-	-	-	-	-	-
Thallium	-	-	-	-	-	-	-	-	-	-	-
Thorium	-	-	-	-	-	-	-	-	-	-	-
Tin	-	-	-	-	-	-	-	-	-	-	-
Titanium	-	-	-	-	-	-	-	-	-	-	-
Tungsten	-	-	-	-	-	-	-	-	-	-	-
Vanadium	-	-	-	-	-	-	-	-	-	-	-
Yttrium	-	-	-	-	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-	-	-	-	-
Zirconium	-	-	-	-	-	-	-	-	-	-	-

Instruments/Methods (M)	
P3 -	ICP PE Optima 7300DV/SW846 Method 6010B
P2 -	ICP TJA Trace 2/SW846 Method 6010B
P1 -	ICP TJA Trace 1/SW846 Method 6010B
NA -	Not Applicable

SOUTHWEST RESEARCH INSTITUTE

Metals Report - Form IIA

Initial and Continuing Calibration Verification

Client: Tetra Tech
Task Order: 160115-1
Result Units: ug/L
Associated Analytical Batches: 20160209-A001

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Initial Calibration Source: SPEX
Continuing Calibration Source: SPEX

Case: 1116399
Project: 21431.01.001

	Continuing Calibration Verification								
Analyte	True	Found3	%Rec	Found4	%Rec	Found5	%Rec	Limit	M
Aluminum	-	-	-	-	-	-	-	-	-
Antimony	-	-	-	-	-	-	-	-	-
Arsenic	-	-	-	-	-	-	-	-	-
Barium	-	-	-	-	-	-	-	-	-
Beryllium	-	-	-	-	-	-	-	-	-
Bismuth	-	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	-	-
Cadmium	-	-	-	-	-	-	-	-	-
Calcium	-	-	-	-	-	-	-	-	-
Chromium	-	-	-	-	-	-	-	-	-
Cobalt	-	-	-	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-	-	-
Iron	-	-	-	-	-	-	-	-	-
Lanthanum	-	-	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-	-	-
Lithium	5000	5090	101.7%	5130	102.5%	5090	101.8%	90%-110%	P3
Magnesium	-	-	-	-	-	-	-	-	-
Manganese	-	-	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-	-	-
Nickel	-	-	-	-	-	-	-	-	-
Palladium	-	-	-	-	-	-	-	-	-
Phosphorus	-	-	-	-	-	-	-	-	-
Potassium	20000	20200	101.2%	-	-	-	-	90%-110%	P3
Selenium	-	-	-	-	-	-	-	-	-
Silicon	-	-	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-	-	-
Sodium	30000	30600	102.0%	-	-	-	-	90%-110%	P3
Strontium	-	-	-	-	-	-	-	-	-
Sulfur	-	-	-	-	-	-	-	-	-
Thallium	-	-	-	-	-	-	-	-	-
Thorium	-	-	-	-	-	-	-	-	-
Tin	-	-	-	-	-	-	-	-	-
Titanium	-	-	-	-	-	-	-	-	-
Tungsten	-	-	-	-	-	-	-	-	-
Vanadium	-	-	-	-	-	-	-	-	-
Yttrium	-	-	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-	-	-
Zirconium	-	-	-	-	-	-	-	-	-

Instruments/Methods (M)

P3 - ICP PE Optima 7300DV/SW846 Method 6010B
P2 - ICP TJA Trace 2/SW846 Method 6010B
P1 - ICP TJA Trace 1/SW846 Method 6010B
NA - Not Applicable

Form IIA-IN

SOUTHWEST RESEARCH INSTITUTE

010206

Metals Report - Form IIA

Initial and Continuing Calibration Verification

Client: Tetra Tech
Task Order: 160115-1
Result Units: ug/L
Associated Analytical Batches: 20160211-A002

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Initial Calibration Source: SPEX
Continuing Calibration Source: SPEX

Case: 1116399
Project: 21431.01.001

	Initial Calibration Verification				Continuing Calibration Verification						
Analyte	True	Found	%Rec	Limit	True	Found1	%Rec	Found2	%Rec	Limit	M
Aluminum	-	-	-	-	-	-	-	-	-	-	-
Antimony	1000	1000	100.1%	90%-110%	1000	1010	100.5%	1010	101.4%	90%-110%	P2
Arsenic	5000	5280	105.6%	90%-110%	5000	5270	105.4%	5220	104.5%	90%-110%	P2
Barium	-	-	-	-	-	-	-	-	-	-	-
Beryllium	1000	1010	101.4%	90%-110%	1000	1010	101.4%	1010	101.0%	90%-110%	P2
Bismuth	5000	4940	98.9%	90%-110%	5000	4920	98.4%	4930	98.6%	90%-110%	P2
Boron	-	-	-	-	-	-	-	-	-	-	-
Cadmium	1000	1030	103.1%	90%-110%	1000	1030	103.3%	1030	103.0%	90%-110%	P2
Calcium	20000	20800	104.0%	90%-110%	20000	20900	104.7%	21000	105.1%	90%-110%	P2
Chromium	-	-	-	-	-	-	-	-	-	-	-
Cobalt	5000	5060	101.2%	90%-110%	5000	5060	101.2%	5060	101.2%	90%-110%	P2
Copper	2000	2030	101.6%	90%-110%	2000	2030	101.4%	2030	101.6%	90%-110%	P2
Iron	10000	10100	101.2%	90%-110%	10000	10200	102.0%	10200	102.0%	90%-110%	P2
Lanthanum	-	-	-	-	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-	-	-	-	-
Lithium	-	-	-	-	-	-	-	-	-	-	-
Magnesium	20000	20600	103.0%	90%-110%	20000	20700	103.3%	20700	103.2%	90%-110%	P2
Manganese	1000	1010	101.3%	90%-110%	1000	1010	101.4%	1010	101.4%	90%-110%	P2
Molybdenum	5000	4890	97.8%	90%-110%	5000	4890	97.8%	4870	97.4%	90%-110%	P2
Nickel	5000	4980	99.7%	90%-110%	5000	4990	99.9%	5000	99.9%	90%-110%	P2
Palladium	-	-	-	-	-	-	-	-	-	-	-
Phosphorus	-	-	-	-	-	-	-	-	-	-	-
Potassium	-	-	-	-	-	-	-	-	-	-	-
Selenium	5000	5220	104.4%	90%-110%	5000	5260	105.1%	5270	105.5%	90%-110%	P2
Silicon	-	-	-	-	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-	-	-	-	-
Sodium	-	-	-	-	-	-	-	-	-	-	-
Strontium	-	-	-	-	-	-	-	-	-	-	-
Sulfur	-	-	-	-	-	-	-	-	-	-	-
Thallium	5000	5180	103.7%	90%-110%	5000	5210	104.1%	5170	103.3%	90%-110%	P2
Thorium	1000	1010	100.5%	90%-110%	1000	1010	101.1%	1010	101.4%	90%-110%	P2
Tin	-	-	-	-	-	-	-	-	-	-	-
Titanium	-	-	-	-	-	-	-	-	-	-	-
Tungsten	-	-	-	-	-	-	-	-	-	-	-
Vanadium	5000	5080	101.6%	90%-110%	5000	5110	102.2%	5110	102.2%	90%-110%	P2
Yttrium	5000	5070	101.4%	90%-110%	5000	5080	101.6%	5100	102.0%	90%-110%	P2
Zinc	1000	1040	103.7%	90%-110%	1000	1040	103.9%	1030	103.4%	90%-110%	P2
Zirconium	-	-	-	-	-	-	-	-	-	-	-

Instruments/Methods (M)

P3 - ICP PE Optima 7300DV/SW846 Method 6010B
P2 - ICP TJA Trace 2/SW846 Method 6010B
P1 - ICP TJA Trace 1/SW846 Method 6010B
NA - Not Applicable

Form IIA-IN

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form IIA
Initial and Continuing Calibration Verification

Client: Tetra Tech
Task Order: 160115-1
Result Units: ug/L
Associated Analytical Batches: 20160211-A002

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Initial Calibration Source: SPEX
Continuing Calibration Source: SPEX

Case: 1116399
Project: 21431.01.001

	Continuing Calibration Verification								
Analyte	True	Found3	%Rec	Found4	%Rec	Found5	%Rec	Limit	M
Aluminum	-	-	-	-	-	-	-	-	-
Antimony	1000	1000	100.2%	1000	100.2%	1000	100.5%	90%-110%	P2
Arsenic	5000	5210	104.2%	5190	103.8%	5200	103.9%	90%-110%	P2
Barium	-	-	-	-	-	-	-	-	-
Beryllium	1000	1000	100.5%	1000	100.3%	1000	100.0%	90%-110%	P2
Bismuth	5000	4900	97.9%	4930	98.5%	4920	98.3%	90%-110%	P2
Boron	-	-	-	-	-	-	-	-	-
Cadmium	1000	1030	102.6%	1030	103.0%	1030	102.6%	90%-110%	P2
Calcium	20000	21100	105.3%	-	-	-	-	90%-110%	P2
Chromium	-	-	-	-	-	-	-	-	-
Cobalt	5000	5070	101.4%	-	-	-	-	90%-110%	P2
Copper	2000	2040	101.9%	-	-	-	-	90%-110%	P2
Iron	10000	10300	102.9%	-	-	-	-	90%-110%	P2
Lanthanum	-	-	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-	-	-
Lithium	-	-	-	-	-	-	-	-	-
Magnesium	20000	20700	103.6%	-	-	-	-	90%-110%	P2
Manganese	1000	1020	101.9%	-	-	-	-	90%-110%	P2
Molybdenum	5000	4850	97.0%	-	-	-	-	90%-110%	P2
Nickel	5000	5010	100.3%	-	-	-	-	90%-110%	P2
Palladium	-	-	-	-	-	-	-	-	-
Phosphorus	-	-	-	-	-	-	-	-	-
Potassium	-	-	-	-	-	-	-	-	-
Selenium	5000	5230	104.7%	-	-	-	-	90%-110%	P2
Silicon	-	-	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-	-	-
Sodium	-	-	-	-	-	-	-	-	-
Strontium	-	-	-	-	-	-	-	-	-
Sulfur	-	-	-	-	-	-	-	-	-
Thallium	5000	5170	103.3%	5160	103.3%	5180	103.6%	90%-110%	P2
Thorium	1000	1010	100.9%	-	-	-	-	90%-110%	P2
Tin	-	-	-	-	-	-	-	-	-
Titanium	-	-	-	-	-	-	-	-	-
Tungsten	-	-	-	-	-	-	-	-	-
Vanadium	5000	5150	103.1%	-	-	-	-	90%-110%	P2
Yttrium	5000	5140	102.9%	5180	103.5%	5190	103.9%	90%-110%	P2
Zinc	1000	1030	103.1%	-	-	-	-	90%-110%	P2
Zirconium	-	-	-	-	-	-	-	-	-

Instruments/Methods (M)	
P3 -	ICP PE Optima 7300DV/SW846 Method 6010B
P2 -	ICP TJA Trace 2/SW846 Method 6010B
P1 -	ICP TJA Trace 1/SW846 Method 6010B
NA -	Not Applicable

Form IIA-IN

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form IIA
Initial and Continuing Calibration Verification

010208

Client: Tetra Tech
Task Order: 160115-1
Result Units: ug/L
Associated Analytical Batches: 20160211-A006

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Initial Calibration Source: SPEX
Continuing Calibration Source: SPEX

Case: 1116399
Project: 21431.01.001

	Initial Calibration Verification				Continuing Calibration Verification						
Analyte	True	Found	%Rec	Limit	True	Found1	%Rec	Found2	%Rec	Limit	M
Aluminum	-	-	-	-	-	-	-	-	-	-	-
Antimony	-	-	-	-	-	-	-	-	-	-	-
Arsenic	-	-	-	-	-	-	-	-	-	-	-
Barium	10000	10100	100.7%	90%-110%	10000	9920	99.2%	9920	99.2%	90%-110%	P2
Beryllium	-	-	-	-	-	-	-	-	-	-	-
Bismuth	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	-	-	-	-
Cadmium	-	-	-	-	-	-	-	-	-	-	-
Calcium	-	-	-	-	-	-	-	-	-	-	-
Chromium	2000	1990	99.4%	90%-110%	2000	1980	99.1%	1980	99.1%	90%-110%	P2
Cobalt	-	-	-	-	-	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-	-	-	-	-
Iron	-	-	-	-	-	-	-	-	-	-	-
Lanthanum	-	-	-	-	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-	-	-	-	-
Lithium	-	-	-	-	-	-	-	-	-	-	-
Magnesium	-	-	-	-	-	-	-	-	-	-	-
Manganese	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-	-	-	-	-
Nickel	-	-	-	-	-	-	-	-	-	-	-
Palladium	-	-	-	-	-	-	-	-	-	-	-
Phosphorus	-	-	-	-	-	-	-	-	-	-	-
Potassium	-	-	-	-	-	-	-	-	-	-	-
Selenium	-	-	-	-	-	-	-	-	-	-	-
Silicon	-	-	-	-	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-	-	-	-	-
Sodium	-	-	-	-	-	-	-	-	-	-	-
Strontium	5000	4950	99.0%	90%-110%	5000	4870	97.5%	4880	97.6%	90%-110%	P2
Sulfur	-	-	-	-	-	-	-	-	-	-	-
Thallium	-	-	-	-	-	-	-	-	-	-	-
Thorium	-	-	-	-	-	-	-	-	-	-	-
Tin	-	-	-	-	-	-	-	-	-	-	-
Titanium	5000	4790	95.7%	90%-110%	5000	4760	95.3%	4770	95.3%	90%-110%	P2
Tungsten	-	-	-	-	-	-	-	-	-	-	-
Vanadium	-	-	-	-	-	-	-	-	-	-	-
Yttrium	-	-	-	-	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-	-	-	-	-
Zirconium	5000	4870	97.5%	90%-110%	5000	4880	97.7%	4870	97.5%	90%-110%	P2

Instruments/Methods (M)	
P3 -	ICP PE Optima 7300DV/SW846 Method 6010B
P2 -	ICP TJA Trace 2/SW846 Method 6010B
P1 -	ICP TJA Trace 1/SW846 Method 6010B
NA -	Not Applicable

Form IIA-IN

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form IIA
Initial and Continuing Calibration Verification

Client: Tetra Tech
Task Order: 160115-1
Result Units: ug/L
Associated Analytical Batches: 20160211-A006

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Initial Calibration Source: SPEX
Continuing Calibration Source: SPEX

Case: 1116399
Project: 21431.01.001

	Continuing Calibration Verification								
Analyte	True	Found3	%Rec	Found4	%Rec	Found5	%Rec	Limit	M
Aluminum	-	-	-	-	-	-	-	-	-
Antimony	-	-	-	-	-	-	-	-	-
Arsenic	-	-	-	-	-	-	-	-	-
Barium	10000	9910	99.1%	9900	99.0%	9860	98.6%	90%-110%	P2
Beryllium	-	-	-	-	-	-	-	-	-
Bismuth	-	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	-	-
Cadmium	-	-	-	-	-	-	-	-	-
Calcium	-	-	-	-	-	-	-	-	-
Chromium	2000	1980	98.9%	1980	99.2%	1980	99.0%	90%-110%	P2
Cobalt	-	-	-	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-	-	-
Iron	-	-	-	-	-	-	-	-	-
Lanthanum	-	-	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-	-	-
Lithium	-	-	-	-	-	-	-	-	-
Magnesium	-	-	-	-	-	-	-	-	-
Manganese	-	-	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-	-	-
Nickel	-	-	-	-	-	-	-	-	-
Palladium	-	-	-	-	-	-	-	-	-
Phosphorus	-	-	-	-	-	-	-	-	-
Potassium	-	-	-	-	-	-	-	-	-
Selenium	-	-	-	-	-	-	-	-	-
Silicon	-	-	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-	-	-
Sodium	-	-	-	-	-	-	-	-	-
Strontium	5000	4880	97.6%	4870	97.4%	4860	97.2%	90%-110%	P2
Sulfur	-	-	-	-	-	-	-	-	-
Thallium	-	-	-	-	-	-	-	-	-
Thorium	-	-	-	-	-	-	-	-	-
Tin	-	-	-	-	-	-	-	-	-
Titanium	5000	4770	95.3%	4760	95.3%	4760	95.2%	90%-110%	P2
Tungsten	-	-	-	-	-	-	-	-	-
Vanadium	-	-	-	-	-	-	-	-	-
Yttrium	-	-	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-	-	-
Zirconium	5000	4890	97.8%	4850	97.0%	4860	97.3%	90%-110%	P2

Instruments/Methods (M)

P3 - ICP PE Optima 7300DV/SW846 Method 6010B
P2 - ICP TJA Trace 2/SW846 Method 6010B
P1 - ICP TJA Trace 1/SW846 Method 6010B
NA - Not Applicable

Form IIA-IN

SOUTHWEST RESEARCH INSTITUTE

010210

Metals Report - Form IIA

Initial and Continuing Calibration Verification

Client: Tetra Tech
Task Order: 160115-1
Result Units: ug/L
Associated Analytical Batches: 20160302-A001

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Initial Calibration Source: SPEX
Continuing Calibration Source: SPEX

Case: 1116399
Project: 21431.01.001

	Initial Calibration Verification				Continuing Calibration Verification						
Analyte	True	Found	%Rec	Limit	True	Found1	%Rec	Found2	%Rec	Limit	M
Aluminum	10000	10200	102.5%	90%-110%	10000	10200	101.9%	10200	102.3%	90%-110%	P1
Antimony	-	-	-	-	-	-	-	-	-	-	-
Arsenic	-	-	-	-	-	-	-	-	-	-	-
Barium	-	-	-	-	-	-	-	-	-	-	-
Beryllium	-	-	-	-	-	-	-	-	-	-	-
Bismuth	-	-	-	-	-	-	-	-	-	-	-
Boron	5000	5250	105.0%	90%-110%	5000	5220	104.3%	5270	105.5%	90%-110%	P1
Cadmium	-	-	-	-	-	-	-	-	-	-	-
Calcium	-	-	-	-	-	-	-	-	-	-	-
Chromium	-	-	-	-	-	-	-	-	-	-	-
Cobalt	-	-	-	-	-	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-	-	-	-	-
Iron	-	-	-	-	-	-	-	-	-	-	-
Lanthanum	5000	4990	99.8%	90%-110%	5000	5010	100.3%	4990	99.8%	90%-110%	P1
Lead	5000	5110	102.1%	90%-110%	5000	5040	100.7%	5130	102.5%	90%-110%	P1
Lithium	-	-	-	-	-	-	-	-	-	-	-
Magnesium	-	-	-	-	-	-	-	-	-	-	-
Manganese	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-	-	-	-	-
Nickel	-	-	-	-	-	-	-	-	-	-	-
Palladium	1000	974	97.4%	90%-110%	1000	974	97.4%	976	97.6%	90%-110%	P1
Phosphorus	5000	5250	105.0%	90%-110%	5000	5100	102.1%	4900	97.9%	90%-110%	P1
Potassium	-	-	-	-	-	-	-	-	-	-	-
Selenium	-	-	-	-	-	-	-	-	-	-	-
Silicon	-	-	-	-	-	-	-	-	-	-	-
Silver	1000	1030	102.8%	90%-110%	1000	1020	102.4%	1030	103.2%	90%-110%	P1
Sodium	-	-	-	-	-	-	-	-	-	-	-
Strontium	-	-	-	-	-	-	-	-	-	-	-
Sulfur	1000	1050	105.4%	90%-110%	1000	1040	103.9%	1050	105.0%	90%-110%	P1
Thallium	-	-	-	-	-	-	-	-	-	-	-
Thorium	-	-	-	-	-	-	-	-	-	-	-
Tin	5000	5100	102.1%	90%-110%	5000	5040	100.8%	5140	102.8%	90%-110%	P1
Titanium	-	-	-	-	-	-	-	-	-	-	-
Tungsten	1000	1090	109.1%	90%-110%	1000	1090	109.0%	1090	108.9%	90%-110%	P1
Vanadium	-	-	-	-	-	-	-	-	-	-	-
Yttrium	-	-	-	-	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-	-	-	-	-
Zirconium	-	-	-	-	-	-	-	-	-	-	-

Instruments/Methods (M)	
P3 -	ICP PE Optima 7300DV/SW846 Method 6010B
P2 -	ICP TJA Trace 2/SW846 Method 6010B
P1 -	ICP TJA Trace 1/SW846 Method 6010B
NA -	Not Applicable

SOUTHWEST RESEARCH INSTITUTE

010211

Metals Report - Form IIA

Initial and Continuing Calibration Verification

Client: Tetra Tech
Task Order: 160115-1
Result Units: ug/L
Associated Analytical Batches: 20160302-A001

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Initial Calibration Source: SPEX
Continuing Calibration Source: SPEX

Case: 1116399
Project: 21431.01.001

	Continuing Calibration Verification										
Analyte	True	Found3	%Rec	Found4	%Rec	Found5	%Rec	Found6	%Rec	Limit	M
Aluminum	10000	10200	101.9%	-	-	-	-	-	-	90%-110%	P1
Antimony	-	-	-	-	-	-	-	-	-	-	-
Arsenic	-	-	-	-	-	-	-	-	-	-	-
Barium	-	-	-	-	-	-	-	-	-	-	-
Beryllium	-	-	-	-	-	-	-	-	-	-	-
Bismuth	-	-	-	-	-	-	-	-	-	-	-
Boron	5000	5230	104.6%	5250	105.1%	5250	104.9%	5230	104.6%	90%-110%	P1
Cadmium	-	-	-	-	-	-	-	-	-	-	-
Calcium	-	-	-	-	-	-	-	-	-	-	-
Chromium	-	-	-	-	-	-	-	-	-	-	-
Cobalt	-	-	-	-	-	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-	-	-	-	-
Iron	-	-	-	-	-	-	-	-	-	-	-
Lanthanum	5000	5000	100.0%	4990	99.9%	5000	100.1%	-	-	90%-110%	P1
Lead	5000	5030	100.7%	5080	101.7%	5040	100.8%	5060	101.2%	90%-110%	P1
Lithium	-	-	-	-	-	-	-	-	-	-	-
Magnesium	-	-	-	-	-	-	-	-	-	-	-
Manganese	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-	-	-	-	-
Nickel	-	-	-	-	-	-	-	-	-	-	-
Palladium	1000	977	97.7%	976	97.6%	974	97.4%	-	-	90%-110%	P1
Phosphorus	5000	4840	96.7%	4790	95.7%	4730	94.7%	-	-	90%-110%	P1
Potassium	-	-	-	-	-	-	-	-	-	-	-
Selenium	-	-	-	-	-	-	-	-	-	-	-
Silicon	-	-	-	-	-	-	-	-	-	-	-
Silver	1000	1040	104.0%	1040	103.7%	1040	103.6%	-	-	90%-110%	P1
Sodium	-	-	-	-	-	-	-	-	-	-	-
Strontium	-	-	-	-	-	-	-	-	-	-	-
Sulfur	1000	1040	104.1%	1070	107.2%	1020	101.6%	1040	104.3%	90%-110%	P1
Thallium	-	-	-	-	-	-	-	-	-	-	-
Thorium	-	-	-	-	-	-	-	-	-	-	-
Tin	5000	5110	102.1%	5130	102.7%	5120	102.4%	-	-	90%-110%	P1
Titanium	-	-	-	-	-	-	-	-	-	-	-
Tungsten	1000	1090	109.4%	1100	110.2%	1100	110.0%	-	-	90%-110%	P1
Vanadium	-	-	-	-	-	-	-	-	-	-	-
Yttrium	-	-	-	-	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-	-	-	-	-
Zirconium	-	-	-	-	-	-	-	-	-	-	-

Instruments/Methods (M)	
P3 -	ICP PE Optima 7300DV/SW846 Method 6010B
P2 -	ICP TJA Trace 2/SW846 Method 6010B
P1 -	ICP TJA Trace 1/SW846 Method 6010B
NA -	Not Applicable

Form IIA-IN

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form IIA
Initial and Continuing Calibration Verification

010212

Client: Tetra Tech
Task Order: 160115-1
Result Units: ug/L
Associated Analytical Batches: 20160302-A001

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Initial Calibration Source: SPEX
Continuing Calibration Source: SPEX

Case: 1116399
Project: 21431.01.001

	Continuing Calibration Verification								
Analyte	True	Found7	%Rec	Found8	%Rec	Found9	%Rec	Limit	M
Aluminum	-	-	-	-	-	-	-	-	NA
Antimony	-	-	-	-	-	-	-	-	-
Arsenic	-	-	-	-	-	-	-	-	-
Barium	-	-	-	-	-	-	-	-	-
Beryllium	-	-	-	-	-	-	-	-	-
Bismuth	-	-	-	-	-	-	-	-	-
Boron	5000	5290	105.7%	5290	105.8%	5230	104.5%	90%-110%	P1
Cadmium	-	-	-	-	-	-	-	-	-
Calcium	-	-	-	-	-	-	-	-	-
Chromium	-	-	-	-	-	-	-	-	-
Cobalt	-	-	-	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-	-	-
Iron	-	-	-	-	-	-	-	-	-
Lanthanum	-	-	-	-	-	-	-	-	NA
Lead	5000	5060	101.2%	5110	102.1%	5060	101.1%	90%-110%	P1
Lithium	-	-	-	-	-	-	-	-	-
Magnesium	-	-	-	-	-	-	-	-	-
Manganese	-	-	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-	-	-
Nickel	-	-	-	-	-	-	-	-	-
Palladium	-	-	-	-	-	-	-	-	NA
Phosphorus	-	-	-	-	-	-	-	-	NA
Potassium	-	-	-	-	-	-	-	-	-
Selenium	-	-	-	-	-	-	-	-	-
Silicon	-	-	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-	-	NA
Sodium	-	-	-	-	-	-	-	-	-
Strontium	-	-	-	-	-	-	-	-	-
Sulfur	1000	1030	103.4%	1020	102.4%	1030	103.5%	90%-110%	P1
Thallium	-	-	-	-	-	-	-	-	-
Thorium	-	-	-	-	-	-	-	-	-
Tin	-	-	-	-	-	-	-	-	NA
Titanium	-	-	-	-	-	-	-	-	-
Tungsten	-	-	-	-	-	-	-	-	NA
Vanadium	-	-	-	-	-	-	-	-	-
Yttrium	-	-	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-	-	-
Zirconium	-	-	-	-	-	-	-	-	-

Instruments/Methods (M)

P3 - ICP PE Optima 7300DV/SW846 Method 6010B
P2 - ICP TJA Trace 2/SW846 Method 6010B
P1 - ICP TJA Trace 1/SW846 Method 6010B
NA - Not Applicable

Form IIA-IN

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form IIA
Initial and Continuing Calibration Verification

010213

Client: Tetra Tech
Task Order: 160115-1
Result Units: ug/L
Associated Analytical Batches: 20160331-A010

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Initial Calibration Source: SPEX
Continuing Calibration Source: SPEX

Case: 1116399
Project: 21431.01.001

	Initial Calibration Verification				Continuing Calibration Verification						
Analyte	True	Found	%Rec	Limit	True	Found1	%Rec	Found2	%Rec	Limit	M
Aluminum	-	-	-	-	-	-	-	-	-	-	-
Antimony	-	-	-	-	-	-	-	-	-	-	-
Arsenic	-	-	-	-	-	-	-	-	-	-	-
Barium	-	-	-	-	-	-	-	-	-	-	-
Beryllium	-	-	-	-	-	-	-	-	-	-	-
Bismuth	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	-	-	-	-
Cadmium	-	-	-	-	-	-	-	-	-	-	-
Calcium	-	-	-	-	-	-	-	-	-	-	-
Chromium	-	-	-	-	-	-	-	-	-	-	-
Cobalt	-	-	-	-	-	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-	-	-	-	-
Iron	-	-	-	-	-	-	-	-	-	-	-
Lanthanum	-	-	-	-	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-	-	-	-	-
Lithium	-	-	-	-	-	-	-	-	-	-	-
Magnesium	-	-	-	-	-	-	-	-	-	-	-
Manganese	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-	-	-	-	-
Nickel	-	-	-	-	-	-	-	-	-	-	-
Palladium	-	-	-	-	-	-	-	-	-	-	-
Phosphorus	-	-	-	-	-	-	-	-	-	-	-
Potassium	-	-	-	-	-	-	-	-	-	-	-
Selenium	-	-	-	-	-	-	-	-	-	-	-
Silicon	5000	4980	99.7%	90%-110%	5000	4980	99.6%	4970	99.4%	90%-110%	P2
Silver	-	-	-	-	-	-	-	-	-	-	-
Sodium	-	-	-	-	-	-	-	-	-	-	-
Strontium	-	-	-	-	-	-	-	-	-	-	-
Sulfur	-	-	-	-	-	-	-	-	-	-	-
Thallium	-	-	-	-	-	-	-	-	-	-	-
Thorium	-	-	-	-	-	-	-	-	-	-	-
Tin	-	-	-	-	-	-	-	-	-	-	-
Titanium	-	-	-	-	-	-	-	-	-	-	-
Tungsten	-	-	-	-	-	-	-	-	-	-	-
Vanadium	-	-	-	-	-	-	-	-	-	-	-
Yttrium	-	-	-	-	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-	-	-	-	-
Zirconium	-	-	-	-	-	-	-	-	-	-	-

Instruments/Methods (M)
P3 - ICP PE Optima 7300DV/SW846 Method 6010B
P2 - ICP TJA Trace 2/SW846 Method 6010B
P1 - ICP TJA Trace 1/SW846 Method 6010B
NA - Not Applicable

Form IIA-IN

SOUTHWEST RESEARCH INSTITUTE

Metals Report - Form IIA

Initial and Continuing Calibration Verification

010214

Client: Tetra Tech
Task Order: 160115-1
Result Units: ug/L
Associated Analytical Batches: 20160331-A010

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Initial Calibration Source: SPEX
Continuing Calibration Source: SPEX

Case: 1116399
Project: 21431.01.001

	Continuing Calibration Verification										
Analyte	True	Found3	%Rec	Found4	%Rec	Found5	%Rec	Found6	%Rec	Limit	M
Aluminum	-	-	-	-	-	-	-	-	-	-	-
Antimony	-	-	-	-	-	-	-	-	-	-	-
Arsenic	-	-	-	-	-	-	-	-	-	-	-
Barium	-	-	-	-	-	-	-	-	-	-	-
Beryllium	-	-	-	-	-	-	-	-	-	-	-
Bismuth	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	-	-	-	-
Cadmium	-	-	-	-	-	-	-	-	-	-	-
Calcium	-	-	-	-	-	-	-	-	-	-	-
Chromium	-	-	-	-	-	-	-	-	-	-	-
Cobalt	-	-	-	-	-	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-	-	-	-	-
Iron	-	-	-	-	-	-	-	-	-	-	-
Lanthanum	-	-	-	-	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-	-	-	-	-
Lithium	-	-	-	-	-	-	-	-	-	-	-
Magnesium	-	-	-	-	-	-	-	-	-	-	-
Manganese	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-	-	-	-	-
Nickel	-	-	-	-	-	-	-	-	-	-	-
Palladium	-	-	-	-	-	-	-	-	-	-	-
Phosphorus	-	-	-	-	-	-	-	-	-	-	-
Potassium	-	-	-	-	-	-	-	-	-	-	-
Selenium	-	-	-	-	-	-	-	-	-	-	-
Silicon	5000	4960	99.2%	4980	99.5%	4980	99.7%	4990	99.8%	90%-110%	P2
Silver	-	-	-	-	-	-	-	-	-	-	-
Sodium	-	-	-	-	-	-	-	-	-	-	-
Strontium	-	-	-	-	-	-	-	-	-	-	-
Sulfur	-	-	-	-	-	-	-	-	-	-	-
Thallium	-	-	-	-	-	-	-	-	-	-	-
Thorium	-	-	-	-	-	-	-	-	-	-	-
Tin	-	-	-	-	-	-	-	-	-	-	-
Titanium	-	-	-	-	-	-	-	-	-	-	-
Tungsten	-	-	-	-	-	-	-	-	-	-	-
Vanadium	-	-	-	-	-	-	-	-	-	-	-
Yttrium	-	-	-	-	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-	-	-	-	-
Zirconium	-	-	-	-	-	-	-	-	-	-	-

Instruments/Methods (M)	
P3 -	ICP PE Optima 7300DV/SW846 Method 6010B
P2 -	ICP TJA Trace 2/SW846 Method 6010B
P1 -	ICP TJA Trace 1/SW846 Method 6010B
NA -	Not Applicable

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form IIB
Low Level Check Standard

Client: Tetra Tech
Task Order: 160115-1
Result Units: ug/L
Associated Analytical Batch: 20160209-A001

SDG: 588049
SRR: 56591, 56639, 56785, 56876

Case: 1116399
Project: 21431.01.001

	CRI/CRA Standards								
Analyte	True	Found1	%Rec	Found2	%Rec	Found3	%Rec	Limit	M
Aluminum	-	-	-	-	-	-	-	-	NA
Antimony	-	-	-	-	-	-	-	-	NA
Arsenic	-	-	-	-	-	-	-	-	NA
Barium	-	-	-	-	-	-	-	-	NA
Beryllium	-	-	-	-	-	-	-	-	NA
Bismuth	-	-	-	-	-	-	-	-	NA
Boron	-	-	-	-	-	-	-	-	NA
Cadmium	-	-	-	-	-	-	-	-	NA
Calcium	-	-	-	-	-	-	-	-	NA
Chromium	-	-	-	-	-	-	-	-	NA
Cobalt	-	-	-	-	-	-	-	-	NA
Copper	-	-	-	-	-	-	-	-	NA
Iron	-	-	-	-	-	-	-	-	NA
Lanthanum	-	-	-	-	-	-	-	-	NA
Lead	-	-	-	-	-	-	-	-	NA
Lithium	10	9.50	95.0%	7.12	71.2%	6.49	64.9%	50%-150%	P3
Magnesium	-	-	-	-	-	-	-	-	NA
Manganese	-	-	-	-	-	-	-	-	NA
Molybdenum	-	-	-	-	-	-	-	-	NA
Nickel	-	-	-	-	-	-	-	-	NA
Palladium	-	-	-	-	-	-	-	-	NA
Phosphorus	-	-	-	-	-	-	-	-	NA
Potassium	500	490	98.0%	499	99.9%	-	-	50%-150%	P3
Selenium	-	-	-	-	-	-	-	-	NA
Silicon	-	-	-	-	-	-	-	-	NA
Silver	-	-	-	-	-	-	-	-	NA
Sodium	250	304	121.8%	284	113.7%	-	-	50%-150%	P3
Strontium	-	-	-	-	-	-	-	-	NA
Sulfur	-	-	-	-	-	-	-	-	NA
Thallium	-	-	-	-	-	-	-	-	NA
Thorium	-	-	-	-	-	-	-	-	NA
Tin	-	-	-	-	-	-	-	-	NA
Titanium	-	-	-	-	-	-	-	-	NA
Tungsten	-	-	-	-	-	-	-	-	NA
Vanadium	-	-	-	-	-	-	-	-	NA
Yttrium	-	-	-	-	-	-	-	-	NA
Zinc	-	-	-	-	-	-	-	-	NA
Zirconium	-	-	-	-	-	-	-	-	NA

Instruments/Methods (M)

P3 - ICP PE Optima 7300DV/SW846 Method 6010B
P2 - ICP TJA Trace 2/SW846 Method 6010B
P1 - ICP TJA Trace 1/SW846 Method 6010B
NA - Not Applicable

Form IIB-IN

SOUTHWEST RESEARCH INSTITUTE

Metals Report - Form IIB

Low Level Check Standard

Client: Tetra Tech
Task Order: 160115-1
Result Units: ug/L
Associated Analytical Batch: 20160211-A002

SDG: 588049
SRR: 56591, 56639, 56785, 56876

Case: 1116399
Project: 21431.01.001

	CRI/CRA Standards								
Analyte	True	Found1	%Rec	Found2	%Rec	Found3	%Rec	Limit	M
Aluminum	-	-	-	-	-	-	-	-	NA
Antimony	20	22.7	113.7%	20.8	103.8%	14.7	73.4%	50%-150%	P2
Arsenic	10	9.88	98.8%	7.16	71.6%	11.5	115.2%	50%-150%	P2
Barium	-	-	-	-	-	-	-	-	NA
Beryllium	5	5.01	100.2%	4.96	99.2%	4.95	99.0%	50%-150%	P2
Bismuth	20	29.6	148.2%	22.1	110.6%	20.9	104.6%	50%-150%	P2
Boron	-	-	-	-	-	-	-	-	NA
Cadmium	5	5.64	112.8%	5.26	105.2%	5.31	106.2%	50%-150%	P2
Calcium	100	107	107.4%	107	107.3%	-	-	50%-150%	P2
Chromium	-	-	-	-	-	-	-	-	NA
Cobalt	5	6.31	126.2%	4.95	99.0%	-	-	50%-150%	P2
Copper	5	6.20	124.0%	4.92	98.4%	-	-	50%-150%	P2
Iron	100	115	115.1%	111	110.8%	-	-	50%-150%	P2
Lanthanum	-	-	-	-	-	-	-	-	NA
Lead	-	-	-	-	-	-	-	-	NA
Lithium	-	-	-	-	-	-	-	-	NA
Magnesium	50	60.9	121.7%	52.1	104.1%	-	-	50%-150%	P2
Manganese	5	5.25	105.0%	5.12	102.4%	-	-	50%-150%	P2
Molybdenum	5	4.98	99.6%	5.42	108.4%	-	-	50%-150%	P2
Nickel	5	4.77	95.4%	4.74	94.8%	-	-	50%-150%	P2
Palladium	-	-	-	-	-	-	-	-	NA
Phosphorus	-	-	-	-	-	-	-	-	NA
Potassium	-	-	-	-	-	-	-	-	NA
Selenium	10	9.67	96.7%	6.63	66.3%	-	-	50%-150%	P2
Silicon	-	-	-	-	-	-	-	-	NA
Silver	-	-	-	-	-	-	-	-	NA
Sodium	-	-	-	-	-	-	-	-	NA
Strontium	-	-	-	-	-	-	-	-	NA
Sulfur	-	-	-	-	-	-	-	-	NA
Thallium	20	23.4	116.8%	18.3	91.5%	21.2	106.0%	50%-150%	P2
Thorium	20	22.7	113.5%	22.6	112.8%	-	-	50%-150%	P2
Tin	-	-	-	-	-	-	-	-	NA
Titanium	-	-	-	-	-	-	-	-	NA
Tungsten	-	-	-	-	-	-	-	-	NA
Vanadium	5	6.07	121.4%	4.89	97.8%	-	-	50%-150%	P2
Yttrium	5	5.52	110.4%	5.22	104.4%	5.32	106.4%	50%-150%	P2
Zinc	5	5.62	112.4%	5.48	109.6%	-	-	50%-150%	P2
Zirconium	-	-	-	-	-	-	-	-	NA

Instruments/Methods (M)

P3 - ICP PE Optima 7300DV/SW846 Method 6010B
P2 - ICP TJA Trace 2/SW846 Method 6010B
P1 - ICP TJA Trace 1/SW846 Method 6010B
NA - Not Applicable

Form IIB-IN

SOUTHWEST RESEARCH INSTITUTE

Metals Report - Form IIB

Low Level Check Standard

Client: Tetra Tech
Task Order: 160115-1
Result Units: ug/L
Associated Analytical Batch: 20160211-A006

SDG: 588049
SRR: 56591, 56639, 56785, 56876

Case: 1116399
Project: 21431.01.001

	CRI/CRA Standards								
Analyte	True	Found1	%Rec	Found2	%Rec	Found3	%Rec	Limit	M
Aluminum	-	-	-	-	-	-	-	-	NA
Antimony	-	-	-	-	-	-	-	-	NA
Arsenic	-	-	-	-	-	-	-	-	NA
Barium	5	5.21	104.2%	5.06	101.2%	5.71	114.2%	50%-150%	P2
Beryllium	-	-	-	-	-	-	-	-	NA
Bismuth	-	-	-	-	-	-	-	-	NA
Boron	-	-	-	-	-	-	-	-	NA
Cadmium	-	-	-	-	-	-	-	-	NA
Calcium	-	-	-	-	-	-	-	-	NA
Chromium	5	4.02	80.4%	4.04	80.8%	4.68	93.6%	50%-150%	P2
Cobalt	-	-	-	-	-	-	-	-	NA
Copper	-	-	-	-	-	-	-	-	NA
Iron	-	-	-	-	-	-	-	-	NA
Lanthanum	-	-	-	-	-	-	-	-	NA
Lead	-	-	-	-	-	-	-	-	NA
Lithium	-	-	-	-	-	-	-	-	NA
Magnesium	-	-	-	-	-	-	-	-	NA
Manganese	-	-	-	-	-	-	-	-	NA
Molybdenum	-	-	-	-	-	-	-	-	NA
Nickel	-	-	-	-	-	-	-	-	NA
Palladium	-	-	-	-	-	-	-	-	NA
Phosphorus	-	-	-	-	-	-	-	-	NA
Potassium	-	-	-	-	-	-	-	-	NA
Selenium	-	-	-	-	-	-	-	-	NA
Silicon	-	-	-	-	-	-	-	-	NA
Silver	-	-	-	-	-	-	-	-	NA
Sodium	-	-	-	-	-	-	-	-	NA
Strontium	5	5.04	100.8%	4.98	99.6%	4.98	99.6%	50%-150%	P2
Sulfur	-	-	-	-	-	-	-	-	NA
Thallium	-	-	-	-	-	-	-	-	NA
Thorium	-	-	-	-	-	-	-	-	NA
Tin	-	-	-	-	-	-	-	-	NA
Titanium	5	4.72	94.4%	4.70	94.0%	5.07	101.4%	50%-150%	P2
Tungsten	-	-	-	-	-	-	-	-	NA
Vanadium	-	-	-	-	-	-	-	-	NA
Yttrium	-	-	-	-	-	-	-	-	NA
Zinc	-	-	-	-	-	-	-	-	NA
Zirconium	5	5.57	111.4%	5.39	107.8%	6.18	123.6%	50%-150%	P2

Instruments/Methods (M)	
P3 -	ICP PE Optima 7300DV/SW846 Method 6010B
P2 -	ICP TJA Trace 2/SW846 Method 6010B
P1 -	ICP TJA Trace 1/SW846 Method 6010B
NA -	Not Applicable

Form IIB-IN

SOUTHWEST RESEARCH INSTITUTE

010218

Metals Report - Form IIB

Low Level Check Standard

Client: Tetra Tech
Task Order: 160115-1
Result Units: ug/L
Associated Analytical Batch: 20160302-A001

SDG: 588049
SRR: 56591, 56639, 56785, 56876

Case: 1116399
Project: 21431.01.001

	CRI/CRA Standards										
Analyte	True	Found1	%Rec	Found2	%Rec	Found3	%Rec	Found4	%Rec	Limit	M
Aluminum	100	113	112.6%	-	-	110	109.9%	-	-	50%-150%	P1
Antimony	-	-	-	-	-	-	-	-	-	-	NA
Arsenic	-	-	-	-	-	-	-	-	-	-	NA
Barium	-	-	-	-	-	-	-	-	-	-	NA
Beryllium	-	-	-	-	-	-	-	-	-	-	NA
Bismuth	-	-	-	-	-	-	-	-	-	-	NA
Boron	80	-	-	163	**203.5%**	-	-	161	**200.9%**	50%-150%	P1
Cadmium	-	-	-	-	-	-	-	-	-	-	NA
Calcium	-	-	-	-	-	-	-	-	-	-	NA
Chromium	-	-	-	-	-	-	-	-	-	-	NA
Cobalt	-	-	-	-	-	-	-	-	-	-	NA
Copper	-	-	-	-	-	-	-	-	-	-	NA
Iron	-	-	-	-	-	-	-	-	-	-	NA
Lanthanum	10	8.93	89.3%	-	-	9.51	95.1%	-	-	50%-150%	P1
Lead	5	5.01	100.2%	-	-	4.87	97.4%	-	-	50%-150%	P1
Lithium	-	-	-	-	-	-	-	-	-	-	NA
Magnesium	-	-	-	-	-	-	-	-	-	-	NA
Manganese	-	-	-	-	-	-	-	-	-	-	NA
Molybdenum	-	-	-	-	-	-	-	-	-	-	NA
Nickel	-	-	-	-	-	-	-	-	-	-	NA
Palladium	20	12.8	63.9%	-	-	15.5	77.4%	-	-	50%-150%	P1
Phosphorus	50	57.0	113.9%	-	-	60.5	121.0%	-	-	50%-150%	P1
Potassium	-	-	-	-	-	-	-	-	-	-	NA
Selenium	-	-	-	-	-	-	-	-	-	-	NA
Silicon	-	-	-	-	-	-	-	-	-	-	NA
Silver	10	7.18	71.8%	-	-	7.92	79.2%	-	-	50%-150%	P1
Sodium	-	-	-	-	-	-	-	-	-	-	NA
Strontium	-	-	-	-	-	-	-	-	-	-	NA
Sulfur	100	-	-	116	116.0%	-	-	113	113.3%	50%-150%	P1
Thallium	-	-	-	-	-	-	-	-	-	-	NA
Thorium	-	-	-	-	-	-	-	-	-	-	NA
Tin	10	11.4	114.3%	-	-	12.1	120.7%	-	-	50%-150%	P1
Titanium	-	-	-	-	-	-	-	-	-	-	NA
Tungsten	20	29.8	149.0%	-	-	26.7	133.4%	-	-	50%-150%	P1
Vanadium	-	-	-	-	-	-	-	-	-	-	NA
Yttrium	-	-	-	-	-	-	-	-	-	-	NA
Zinc	-	-	-	-	-	-	-	-	-	-	NA
Zirconium	-	-	-	-	-	-	-	-	-	-	NA

Instruments/Methods (M)

P3 - ICP PE Optima 7300DV/SW846 Method 6010B
P2 - ICP TJA Trace 2/SW846 Method 6010B
P1 - ICP TJA Trace 1/SW846 Method 6010B
NA - Not Applicable

Form IIB-IN

SOUTHWEST RESEARCH INSTITUTE

010219

Metals Report - Form IIB

Low Level Check Standard

Client: Tetra Tech
Task Order: 160115-1
Result Units: ug/L
Associated Analytical Batch: 20160302-A001

SDG: 588049
SRR: 56591, 56639, 56785, 56876

Case: 1116399
Project: 21431.01.001

	CRI/CRA Standards										
Analyte	True	Found5	%Rec	Found6	%Rec	Found7	%Rec	Found8	%Rec	Limit	M
Aluminum	100	-	-	-	-	-	-	-	-	50%-150%	P1
Antimony	-	-	-	-	-	-	-	-	-	-	NA
Arsenic	-	-	-	-	-	-	-	-	-	-	NA
Barium	-	-	-	-	-	-	-	-	-	-	NA
Beryllium	-	-	-	-	-	-	-	-	-	-	NA
Bismuth	-	-	-	-	-	-	-	-	-	-	NA
Boron	80	-	-	164	**204.9%**	-	-	162	**202.9%**	50%-150%	P1
Cadmium	-	-	-	-	-	-	-	-	-	-	NA
Calcium	-	-	-	-	-	-	-	-	-	-	NA
Chromium	-	-	-	-	-	-	-	-	-	-	NA
Cobalt	-	-	-	-	-	-	-	-	-	-	NA
Copper	-	-	-	-	-	-	-	-	-	-	NA
Iron	-	-	-	-	-	-	-	-	-	-	NA
Lanthanum	10	7.24	72.4%	-	-	-	-	-	-	50%-150%	P1
Lead	5	6.11	122.2%	-	-	4.91	98.2%	-	-	50%-150%	P1
Lithium	-	-	-	-	-	-	-	-	-	-	NA
Magnesium	-	-	-	-	-	-	-	-	-	-	NA
Manganese	-	-	-	-	-	-	-	-	-	-	NA
Molybdenum	-	-	-	-	-	-	-	-	-	-	NA
Nickel	-	-	-	-	-	-	-	-	-	-	NA
Palladium	20	11.1	55.4%	-	-	-	-	-	-	50%-150%	P1
Phosphorus	50	45.5	90.9%	-	-	-	-	-	-	50%-150%	P1
Potassium	-	-	-	-	-	-	-	-	-	-	NA
Selenium	-	-	-	-	-	-	-	-	-	-	NA
Silicon	-	-	-	-	-	-	-	-	-	-	NA
Silver	10	6.45	64.5%	-	-	-	-	-	-	50%-150%	P1
Sodium	-	-	-	-	-	-	-	-	-	-	NA
Strontium	-	-	-	-	-	-	-	-	-	-	NA
Sulfur	100	-	-	125	125.3%	-	-	95.4	95.4%	50%-150%	P1
Thallium	-	-	-	-	-	-	-	-	-	-	NA
Thorium	-	-	-	-	-	-	-	-	-	-	NA
Tin	10	10.7	106.8%	-	-	-	-	-	-	50%-150%	P1
Titanium	-	-	-	-	-	-	-	-	-	-	NA
Tungsten	20	21.1	105.5%	-	-	-	-	-	-	50%-150%	P1
Vanadium	-	-	-	-	-	-	-	-	-	-	NA
Yttrium	-	-	-	-	-	-	-	-	-	-	NA
Zinc	-	-	-	-	-	-	-	-	-	-	NA
Zirconium	-	-	-	-	-	-	-	-	-	-	NA

Instruments/Methods (M)	
P3 -	ICP PE Optima 7300DV/SW846 Method 6010B
P2 -	ICP TJA Trace 2/SW846 Method 6010B
P1 -	ICP TJA Trace 1/SW846 Method 6010B
NA -	Not Applicable

Form IIB-IN

SOUTHWEST RESEARCH INSTITUTE

010220

Metals Report - Form IIB

Low Level Check Standard

Client: Tetra Tech
Task Order: 160115-1
Result Units: ug/L
Associated Analytical Batch: 20160302-A001

SDG: 588049
SRR: 56591, 56639, 56785, 56876

Case: 1116399
Project: 21431.01.001

	CRI/CRA Standards						
Analyte	True	Found9	%Rec	Found10	%Rec	Limit	M
Aluminum	100	-	-	-	-	50%-150%	P1
Antimony	-	-	-	-	-	-	NA
Arsenic	-	-	-	-	-	-	NA
Barium	-	-	-	-	-	-	NA
Beryllium	-	-	-	-	-	-	NA
Bismuth	-	-	-	-	-	-	NA
Boron	80	-	-	161	**200.7%**	50%-150%	P1
Cadmium	-	-	-	-	-	-	NA
Calcium	-	-	-	-	-	-	NA
Chromium	-	-	-	-	-	-	NA
Cobalt	-	-	-	-	-	-	NA
Copper	-	-	-	-	-	-	NA
Iron	-	-	-	-	-	-	NA
Lanthanum	10	-	-	-	-	50%-150%	P1
Lead	5	3.52	70.4%	-	-	50%-150%	P1
Lithium	-	-	-	-	-	-	NA
Magnesium	-	-	-	-	-	-	NA
Manganese	-	-	-	-	-	-	NA
Molybdenum	-	-	-	-	-	-	NA
Nickel	-	-	-	-	-	-	NA
Palladium	20	-	-	-	-	50%-150%	P1
Phosphorus	50	-	-	-	-	50%-150%	P1
Potassium	-	-	-	-	-	-	NA
Selenium	-	-	-	-	-	-	NA
Silicon	-	-	-	-	-	-	NA
Silver	10	-	-	-	-	50%-150%	P1
Sodium	-	-	-	-	-	-	NA
Strontium	-	-	-	-	-	-	NA
Sulfur	100	-	-	135	134.6%	50%-150%	P1
Thallium	-	-	-	-	-	-	NA
Thorium	-	-	-	-	-	-	NA
Tin	10	-	-	-	-	50%-150%	P1
Titanium	-	-	-	-	-	-	NA
Tungsten	20	-	-	-	-	50%-150%	P1
Vanadium	-	-	-	-	-	-	NA
Yttrium	-	-	-	-	-	-	NA
Zinc	-	-	-	-	-	-	NA
Zirconium	-	-	-	-	-	-	NA

Instruments/Methods (M)	
P3 -	ICP PE Optima 7300DV/SW846 Method 6010B
P2 -	ICP TJA Trace 2/SW846 Method 6010B
P1 -	ICP TJA Trace 1/SW846 Method 6010B
NA -	Not Applicable

Form IIB-IN

SOUTHWEST RESEARCH INSTITUTE

010221

Metals Report - Form IIB

Low Level Check Standard

Client: Tetra Tech
Task Order: 160115-1
Result Units: ug/L
Associated Analytical Batch: 20160331-A010

SDG: 588049
SRR: 56591, 56639, 56785, 56876

Case: 1116399
Project: 21431.01.001

	CRI/CRA Standards										
Analyte	True	Found1	%Rec	Found2	%Rec	Found3	%Rec	Found4	%Rec	Limit	M
Aluminum	-	-	-	-	-	-	-	-	-	-	NA
Antimony	-	-	-	-	-	-	-	-	-	-	NA
Arsenic	-	-	-	-	-	-	-	-	-	-	NA
Barium	-	-	-	-	-	-	-	-	-	-	NA
Beryllium	-	-	-	-	-	-	-	-	-	-	NA
Bismuth	-	-	-	-	-	-	-	-	-	-	NA
Boron	-	-	-	-	-	-	-	-	-	-	NA
Cadmium	-	-	-	-	-	-	-	-	-	-	NA
Calcium	-	-	-	-	-	-	-	-	-	-	NA
Chromium	-	-	-	-	-	-	-	-	-	-	NA
Cobalt	-	-	-	-	-	-	-	-	-	-	NA
Copper	-	-	-	-	-	-	-	-	-	-	NA
Iron	-	-	-	-	-	-	-	-	-	-	NA
Lanthanum	-	-	-	-	-	-	-	-	-	-	NA
Lead	-	-	-	-	-	-	-	-	-	-	NA
Lithium	-	-	-	-	-	-	-	-	-	-	NA
Magnesium	-	-	-	-	-	-	-	-	-	-	NA
Manganese	-	-	-	-	-	-	-	-	-	-	NA
Molybdenum	-	-	-	-	-	-	-	-	-	-	NA
Nickel	-	-	-	-	-	-	-	-	-	-	NA
Palladium	-	-	-	-	-	-	-	-	-	-	NA
Phosphorus	-	-	-	-	-	-	-	-	-	-	NA
Potassium	-	-	-	-	-	-	-	-	-	-	NA
Selenium	-	-	-	-	-	-	-	-	-	-	NA
Silicon	100	101	100.9%	103	102.9%	84.5	84.4%	-	-	50%-150%	P2
Silver	-	-	-	-	-	-	-	-	-	-	NA
Sodium	-	-	-	-	-	-	-	-	-	-	NA
Strontium	-	-	-	-	-	-	-	-	-	-	NA
Sulfur	-	-	-	-	-	-	-	-	-	-	NA
Thallium	-	-	-	-	-	-	-	-	-	-	NA
Thorium	-	-	-	-	-	-	-	-	-	-	NA
Tin	-	-	-	-	-	-	-	-	-	-	NA
Titanium	-	-	-	-	-	-	-	-	-	-	NA
Tungsten	-	-	-	-	-	-	-	-	-	-	NA
Vanadium	-	-	-	-	-	-	-	-	-	-	NA
Yttrium	-	-	-	-	-	-	-	-	-	-	NA
Zinc	-	-	-	-	-	-	-	-	-	-	NA
Zirconium	-	-	-	-	-	-	-	-	-	-	NA

Instruments/Methods (M)	
P3 -	ICP PE Optima 7300DV/SW846 Method 6010B
P2 -	ICP TJA Trace 2/SW846 Method 6010B
P1 -	ICP TJA Trace 1/SW846 Method 6010B
NA -	Not Applicable

Form IIB-IN

SOUTHWEST RESEARCH INSTITUTE

010222

Metals Report - Form III

Blanks

Client: Tetra Tech
Task Order: 160115-1
Preparation Blank Result Units: mg/Kg
Initial/Continuing Blank Result Units: ug/L

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Preparation Blank Matrix: Soil, Solid
Associated Prep Batches: 20160126-P004

Case: 1116399
Project: 21431.01.001
Associated Analytical Batches: 20160209-A001

	Preparation Blank		Initial Calibration Blank		Continuing Calibration Blank										
Analyte	Result	Qual	Found	Qual	Found1	Qual	Found2	Qual	Found3	Qual	Found4	Qual	Found5	Qual	M
Aluminum	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Antimony	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Arsenic	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Barium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Beryllium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Bismuth	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Boron	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Cadmium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Calcium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Chromium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Cobalt	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Copper	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Iron	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Lanthanum	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Lead	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Lithium	1.00	U	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P3
Magnesium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Manganese	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Molybdenum	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Nickel	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Palladium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Phosphorus	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Potassium	50.0	U	500	U	500	U	500	U	500	U	-	-	-	-	P3
Selenium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Silicon	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Silver	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Sodium	25.0	U	250	U	250	U	250	U	250	U	-	-	-	-	P3
Strontium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Sulfur	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Thallium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Thorium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Tin	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Titanium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Tungsten	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Vanadium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Yttrium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Zinc	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Zirconium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA

Data Reporting Qualifiers (Qual)	*Instruments/Methods (M)*
U - Result is less than the SwRI Reporting Limit (RL)	P3 - ICP PE Optima 7300DV/SW846 Method 6010B
N - Matrix spike and/or matrix spike duplicate criteria was not met	P2 - ICP TJA Trace 2/SW846 Method 6010B
X - Analytical spike criteria was not met	P1 - ICP TJA Trace 1/SW846 Method 6010B
E - Result is estimated due to interferences	NA - Not Applicable
D - Result is reported from a dilution	
* - Duplicate criteria was not met	

SOUTHWEST RESEARCH INSTITUTE

010223

Metals Report - Form III

Blanks

Client: Tetra Tech
Task Order: 160115-1
Preparation Blank Result Units: mg/Kg
Initial/Continuing Blank Result Units: ug/L

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Preparation Blank Matrix: Soil, Solid
Associated Prep Batches: 20160126-P004

Case: 1116399
Project: 21431.01.001
Associated Analytical Batches: 20160211-A002

	Preparation Blank		Initial Calibration Blank		Continuing Calibration Blank										
Analyte	Result	Qual	Found	Qual	Found1	Qual	Found2	Qual	Found3	Qual	Found4	Qual	Found5	Qual	M
Aluminum	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Antimony	5.00	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	P2
Arsenic	1.00	U	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P2
Barium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Beryllium	0.500	U	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U	P2
Bismuth	2.00	U	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U	P2
Boron	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Cadmium	0.500	U	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U	P2
Calcium	10.0	U	100	U	100	U	100	U	100	U	-	-	-	-	P2
Chromium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Cobalt	0.500	U	5.00	U	5.00	U	5.00	U	5.00	U	-	-	-	-	P2
Copper	0.500	U	5.00	U	5.00	U	5.00	U	5.00	U	-	-	-	-	P2
Iron	10.0	U	100	U	100	U	100	U	100	U	-	-	-	-	P2
Lanthanum	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Lead	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Lithium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Magnesium	5.00	U	50.0	U	50.0	U	50.0	U	50.0	U	-	-	-	-	P2
Manganese	0.500	U	5.00	U	5.00	U	5.00	U	5.00	U	-	-	-	-	P2
Molybdenum	0.500	U	5.00	U	5.00	U	5.00	U	5.00	U	-	-	-	-	P2
Nickel	0.500	U	5.00	U	5.00	U	5.00	U	5.00	U	-	-	-	-	P2
Palladium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Phosphorus	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Potassium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Selenium	1.00	U	10.0	U	10.0	U	10.0	U	10.0	U	-	-	-	-	P2
Silicon	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Silver	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Sodium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Strontium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Sulfur	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Thallium	5.00	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	P2
Thorium	2.00	U	20.0	U	20.0	U	20.0	U	20.0	U	-	-	-	-	P2
Tin	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Titanium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Tungsten	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Vanadium	0.500	U	5.00	U	5.00	U	5.00	U	5.00	U	-	-	-	-	P2
Yttrium	0.500	U	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U	P2
Zinc	0.500	U	5.00	U	5.00	U	5.00	U	5.00	U	-	-	-	-	P2
Zirconium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA

Data Reporting Qualifiers (Qual)	***Instruments/Methods (M)***
U - Result is less than the SwRI Reporting Limit (RL)	P3 - ICP PE Optima 7300DV/SW846 Method 6010B
N - Matrix spike and/or matrix spike duplicate criteria was not met	P2 - ICP TJA Trace 2/SW846 Method 6010B
X - Analytical spike criteria was not met	P1 - ICP TJA Trace 1/SW846 Method 6010B
E - Result is estimated due to interferences	NA - Not Applicable
D - Result is reported from a dilution	
* - Duplicate criteria was not met	

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form III
Blanks

Client: Tetra Tech
Task Order: 160115-1
Preparation Blank Result Units: mg/Kg
Initial/Continuing Blank Result Units: ug/L

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Preparation Blank Matrix: Soil, Solid
Associated Prep Batches: 20160127-P004

Case: 1116399
Project: 21431.01.001
Associated Analytical Batches: 20160211-A006

	Preparation Blank		Initial Calibration Blank		Continuing Calibration Blank										
Analyte	Result	Qual	Found	Qual	Found1	Qual	Found2	Qual	Found3	Qual	Found4	Qual	Found5	Qual	M
Aluminum	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Antimony	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Arsenic	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Barium	50.0	UD	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U	P2
Beryllium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Bismuth	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Boron	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Cadmium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Calcium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Chromium	50.0	UD	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U	P2
Cobalt	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Copper	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Iron	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Lanthanum	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Lead	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Lithium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Magnesium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Manganese	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Molybdenum	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Nickel	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Palladium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Phosphorus	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Potassium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Selenium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Silicon	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Silver	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Sodium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Strontium	50.0	UD	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U	P2
Sulfur	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Thallium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Thorium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Tin	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Titanium	50.0	UD	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U	P2
Tungsten	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Vanadium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Yttrium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Zinc	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Zirconium	50.0	UD	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U	P2

Data Reporting Qualifiers (Qual)	*Instruments/Methods (M)*
U - Result is less than the SwRI Reporting Limit (RL)	P3 - ICP PE Optima 7300DV/SW846 Method 6010B
N - Matrix spike and/or matrix spike duplicate criteria was not met	P2 - ICP TJA Trace 2/SW846 Method 6010B
X - Analytical spike criteria was not met	P1 - ICP TJA Trace 1/SW846 Method 6010B
E - Result is estimated due to interferences	NA - Not Applicable
D - Result is reported from a dilution	
* - Duplicate criteria was not met	

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form III
Blanks

Client: Tetra Tech
Task Order: 160115-1
Preparation Blank Result Units: mg/Kg
Initial/Continuing Blank Result Units: ug/L

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Preparation Blank Matrix: Soil, Solid
Associated Prep Batches: 20160126-P004
20160127-P003

Case: 1116399
Project: 21431.01.001
Associated Analytical Batches: 20160302-A001

	Preparation Blank		Initial Calibration Blank		Continuing Calibration Blank										
Analyte	Result	Qual	Found	Qual	Found1	Qual	Found2	Qual	Found3	Qual	Found4	Qual	Found5	Qual	M
Aluminum	10.0	U	100	U	100	U	100	U	100	U	-	-	-	-	P1
Antimony	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Arsenic	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Barium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Beryllium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Bismuth	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Boron	800	UD	80.0	U	80.0	U	80.0	U	80.0	U	80.0	U	80.0	U	P1
Cadmium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Calcium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Chromium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Cobalt	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Copper	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Iron	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Lanthanum	1.00	U	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P1
Lead	50.0	UD	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U	P1
Lithium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Magnesium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Manganese	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Molybdenum	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Nickel	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Palladium	2.00	U	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U	P1
Phosphorus	5.00	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	P1
Potassium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Selenium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Silicon	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Silver	1.00	U	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P1
Sodium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Strontium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Sulfur	1000	UD	100	U	100	U	100	U	100	U	100	U	100	U	P1
Thallium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Thorium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Tin	2.00	U	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U	P1
Titanium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Tungsten	2.00	U	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U	P1
Vanadium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Yttrium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Zinc	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Zirconium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA

Data Reporting Qualifiers (Qual)	*Instruments/Methods (M)*
U - Result is less than the SwRI Reporting Limit (RL)	P3 - ICP PE Optima 7300DV/SW846 Method 6010B
N - Matrix spike and/or matrix spike duplicate criteria was not met	P2 - ICP TJA Trace 2/SW846 Method 6010B
X - Analytical spike criteria was not met	P1 - ICP TJA Trace 1/SW846 Method 6010B
E - Result is estimated due to interferences	NA - Not Applicable
D - Result is reported from a dilution	
* - Duplicate criteria was not met	

SOUTHWEST RESEARCH INSTITUTE

010226

Metals Report - Form III

Blanks

Client: Tetra Tech
Task Order: 160115-1
Preparation Blank Result Units: mg/Kg
Initial/Continuing Blank Result Units: ug/L

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Preparation Blank Matrix: Soil, Solid
Associated Prep Batches: 20160126-P004
20160127-P003

Case: 1116399
Project: 21431.01.001
Associated Analytical Batches: 20160302-A001

	Continuing Calibration Blank								
Analyte	Found6	Qual	Found7	Qual	Found8	Qual	Found9	Qual	M
Aluminum	-	-	-	-	-	-	-	-	NA
Antimony	-	-	-	-	-	-	-	-	NA
Arsenic	-	-	-	-	-	-	-	-	NA
Barium	-	-	-	-	-	-	-	-	NA
Beryllium	-	-	-	-	-	-	-	-	NA
Bismuth	-	-	-	-	-	-	-	-	NA
Boron	80.0	U	80.0	U	80.0	U	80.0	U	P1
Cadmium	-	-	-	-	-	-	-	-	NA
Calcium	-	-	-	-	-	-	-	-	NA
Chromium	-	-	-	-	-	-	-	-	NA
Cobalt	-	-	-	-	-	-	-	-	NA
Copper	-	-	-	-	-	-	-	-	NA
Iron	-	-	-	-	-	-	-	-	NA
Lanthanum	-	-	-	-	-	-	-	-	NA
Lead	5.00	U	5.00	U	5.00	U	5.00	U	P1
Lithium	-	-	-	-	-	-	-	-	NA
Magnesium	-	-	-	-	-	-	-	-	NA
Manganese	-	-	-	-	-	-	-	-	NA
Molybdenum	-	-	-	-	-	-	-	-	NA
Nickel	-	-	-	-	-	-	-	-	NA
Palladium	-	-	-	-	-	-	-	-	NA
Phosphorus	-	-	-	-	-	-	-	-	NA
Potassium	-	-	-	-	-	-	-	-	NA
Selenium	-	-	-	-	-	-	-	-	NA
Silicon	-	-	-	-	-	-	-	-	NA
Silver	-	-	-	-	-	-	-	-	NA
Sodium	-	-	-	-	-	-	-	-	NA
Strontium	-	-	-	-	-	-	-	-	NA
Sulfur	100	U	100	U	100	U	100	U	P1
Thallium	-	-	-	-	-	-	-	-	NA
Thorium	-	-	-	-	-	-	-	-	NA
Tin	-	-	-	-	-	-	-	-	NA
Titanium	-	-	-	-	-	-	-	-	NA
Tungsten	-	-	-	-	-	-	-	-	NA
Vanadium	-	-	-	-	-	-	-	-	NA
Yttrium	-	-	-	-	-	-	-	-	NA
Zinc	-	-	-	-	-	-	-	-	NA
Zirconium	-	-	-	-	-	-	-	-	NA

Data Reporting Qualifiers (Qual)	***Instruments/Methods (M)***
U - Result is less than the SwRI Reporting Limit (RL)	P3 - ICP PE Optima 7300DV/SW846 Method 6010B
N - Matrix spike and/or matrix spike duplicate criteria was not met	P2 - ICP TJA Trace 2/SW846 Method 6010B
X - Analytical spike criteria was not met	P1 - ICP TJA Trace 1/SW846 Method 6010B
E - Result is estimated due to interferences	NA - Not Applicable
D - Result is reported from a dilution	
* - Duplicate criteria was not met	

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form III
Blanks

010227

Client: Tetra Tech
Task Order: 160115-1
Preparation Blank Result Units: mg/Kg
Initial/Continuing Blank Result Units: ug/L

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Preparation Blank Matrix: Soil, Solid
Associated Prep Batches: 20160127-P004

Case: 1116399
Project: 21431.01.001
Associated Analytical Batches: 20160331-A010

	Preparation Blank		Initial Calibration Blank		Continuing Calibration Blank										
Analyte	Result	Qual	Found	Qual	Found1	Qual	Found2	Qual	Found3	Qual	Found4	Qual	Found5	Qual	M
Aluminum	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Antimony	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Arsenic	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Barium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Beryllium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Bismuth	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Boron	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Cadmium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Calcium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Chromium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Cobalt	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Copper	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Iron	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Lanthanum	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Lead	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Lithium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Magnesium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Manganese	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Molybdenum	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Nickel	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Palladium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Phosphorus	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Potassium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Selenium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Silicon	10000	UD	100	U	100	U	100	U	100	U	100	U	100	U	P2
Silicon	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Silver	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Sodium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Strontium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Sulfur	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Thallium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Thorium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Tin	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Titanium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Tungsten	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Vanadium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Yttrium	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Zinc	-		-	-	-	-	-	-	-	-	-	-	-	-	NA
Zirconium	-		-	-											

Data Reporting Qualifiers (Qual)	*Instruments/Methods (M)*
U - Result is less than the SwRI Reporting Limit (RL)	P3 - ICP PE Optima 7300DV/SW846 Method 6010B
N - Matrix spike and/or matrix spike duplicate criteria was not met	P2 - ICP TJA Trace 2/SW846 Method 6010B
X - Analytical spike criteria was not met	P1 - ICP TJA Trace 1/SW846 Method 6010B
E - Result is estimated due to interferences	NA - Not Applicable
D - Result is reported from a dilution	
* - Duplicate criteria was not met	

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form III
Blanks

010228

Client: Tetra Tech
Task Order: 160115-1
Preparation Blank Result Units: mg/Kg
Initial/Continuing Blank Result Units: ug/L

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Preparation Blank Matrix: Soil, Solid
Associated Prep Batches: 20160127-P004

Case: 1116399
Project: 21431.01.001
Associated Analytical Batches: 20160331-A010

	Continuing Calibration Blank		
Analyte	Found6	Qual	M
Aluminum	-	-	NA
Antimony	-	-	NA
Arsenic	-	-	NA
Barium	-	-	NA
Beryllium	-	-	NA
Bismuth	-	-	NA
Boron	-	-	NA
Cadmium	-	-	NA
Calcium	-	-	NA
Chromium	-	-	NA
Cobalt	-	-	NA
Copper	-	-	NA
Iron	-	-	NA
Lanthanum	-	-	NA
Lead	-	-	NA
Lithium	-	-	NA
Magnesium	-	-	NA
Manganese	-	-	NA
Molybdenum	-	-	NA
Nickel	-	-	NA
Palladium	-	-	NA
Phosphorus	-	-	NA
Potassium	-	-	NA
Selenium	-	-	NA
Silicon	100	U	P2
Silver	-	-	NA
Sodium	-	-	NA
Strontium	-	-	NA
Sulfur	-	-	NA
Thallium	-	-	NA
Thorium	-	-	NA
Tin	-	-	NA
Titanium	-	-	NA
Tungsten	-	-	NA
Vanadium	-	-	NA
Yttrium	-	-	NA
Zinc	-	-	NA
Zirconium	-	-	NA

Data Reporting Qualifiers (Qual)	*Instruments/Methods (M)*
U - Result is less than the SwRI Reporting Limit (RL)	P3 - ICP PE Optima 7300DV/SW846 Method 6010B
N - Matrix spike and/or matrix spike duplicate criteria was not met	P2 - ICP TJA Trace 2/SW846 Method 6010B
X - Analytical spike criteria was not met	P1 - ICP TJA Trace 1/SW846 Method 6010B
E - Result is estimated due to interferences	NA - Not Applicable
D - Result is reported from a dilution	
* - Duplicate criteria was not met	

SOUTHWEST RESEARCH INSTITUTE

010229

Metals Report - Form IVA

ICP-AES Interference Check Sample

Client: Tetra Tech
Task Order: 160115-1
Instrument: ICP PE Optima 7300DV
Result Units: ug/L

SDG: 588049
SRR: 56591, 56639, 56785, 56876
ICSA Source: See Raw Data
ICSB Source: See Raw Data

Case: 1116399
Project: 21431.01.001
Analysis Date: 02/08/2016
Associated Analytical Batch: 20160209-A001

Analyte	True		Found								Limit	Limit
	ICSA	ICSAB	ICSA	%Rec	ICSAB	%Rec	ICSA	%Rec	ICSAB	%Rec	ICSA	ICSAB
Aluminum	-	-	-	-	-	-	-	-	-	-	-	-
Antimony	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic	-	-	-	-	-	-	-	-	-	-	-	-
Barium	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Bismuth	-	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	-	-	-	-	-	-	-	-	-	-	-	-
Calcium	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	-	-	-	-	-	-	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-	-	-	-	-	-
Iron	-	-	-	-	-	-	-	-	-	-	-	-
Lanthanum	-	-	-	-	-	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-	-	-	-	-	-
Lithium	0	1000	4.55	-	1090	109.1%	1.28	-	1080	108.4%	-20.0 to 20.0	80%-120%
Magnesium	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	-	-	-	-	-	-	-	-	-	-	-	-
Palladium	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus	-	-	-	-	-	-	-	-	-	-	-	-
Potassium	0	0	12.9	-	11.9	-	17.5	-	1.40	-	-1000 to 1000	-
Selenium	-	-	-	-	-	-	-	-	-	-	-	-
Silicon	-	-	-	-	-	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	0	0	143	-	109	-	104	-	72.9	-	-500 to 500	-
Strontium	-	-	-	-	-	-	-	-	-	-	-	-
Sulfur	-	-	-	-	-	-	-	-	-	-	-	-
Thallium	-	-	-	-	-	-	-	-	-	-	-	-
Thorium	-	-	-	-	-	-	-	-	-	-	-	-
Tin	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	-	-	-	-	-	-	-	-	-	-	-	-
Tungsten	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	-	-	-	-	-	-	-	-	-	-	-	-
Yttrium	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-	-	-	-	-	-
Zirconium	-	-	-	-	-	-	-	-	-	-	-	-

SOUTHWEST RESEARCH INSTITUTE

010230

Metals Report - Form IVA

ICP-AES Interference Check Sample

Client: Tetra Tech
Task Order: 160115-1
Instrument: ICP PE Optima 7300DV
Result Units: ug/L

SDG: 588049
SRR: 56591, 56639, 56785, 56876
ICSA Source: See Raw Data
ICSB Source: See Raw Data

Case: 1116399
Project: 21431.01.001
Analysis Date: 02/08/2016
Associated Analytical Batch: 20160209-A001

Analyte	True		Found				Limit	Limit
	ICSA	ICSAB	ICSA	%Rec	ICSAB	%Rec	ICSA	ICSAB
Aluminum	-	-	-	-	-	-	-	-
Antimony	-	-	-	-	-	-	-	-
Arsenic	-	-	-	-	-	-	-	-
Barium	-	-	-	-	-	-	-	-
Beryllium	-	-	-	-	-	-	-	-
Bismuth	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	-
Cadmium	-	-	-	-	-	-	-	-
Calcium	-	-	-	-	-	-	-	-
Chromium	-	-	-	-	-	-	-	-
Cobalt	-	-	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-	-
Iron	-	-	-	-	-	-	-	-
Lanthanum	-	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-	-
Lithium	0	1000	0.280	-	1090	108.8%	-20.0 to 20.0	80%-120%
Magnesium	-	-	-	-	-	-	-	-
Manganese	-	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-	-
Nickel	-	-	-	-	-	-	-	-
Palladium	-	-	-	-	-	-	-	-
Phosphorus	-	-	-	-	-	-	-	-
Potassium	-	-	-	-	-	-	-	-
Selenium	-	-	-	-	-	-	-	-
Silicon	-	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-	-
Sodium	-	-	-	-	-	-	-	-
Strontium	-	-	-	-	-	-	-	-
Sulfur	-	-	-	-	-	-	-	-
Thallium	-	-	-	-	-	-	-	-
Thorium	-	-	-	-	-	-	-	-
Tin	-	-	-	-	-	-	-	-
Titanium	-	-	-	-	-	-	-	-
Tungsten	-	-	-	-	-	-	-	-
Vanadium	-	-	-	-	-	-	-	-
Yttrium	-	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-	-
Zirconium	-	-	-	-	-	-	-	-

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form IVA
ICP-AES Interference Check Sample

010231

Client: Tetra Tech
Task Order: 160115-1
Instrument: ICP TJA Trace 2
Result Units: ug/L

SDG: 588049
SRR: 56591, 56639, 56785, 56876
ICSA Source: See Raw Data
ICSB Source: See Raw Data

Case: 1116399
Project: 21431.01.001
Analysis Date: 02/05/2016
Associated Analytical Batch: 20160211-A002

Analyte	True		Found								Limit	Limit
	ICSA	ICSAB	ICSA	%Rec	ICSAB	%Rec	ICSA	%Rec	ICSAB	%Rec	ICSA	ICSAB
Aluminum	-	-	-	-	-	-	-	-	-	-	-	-
Antimony	0	1000	9.13	-	1070	106.6%	-2.17	-	1070	107.2%	-100 to 100	80%-120%
Arsenic	0	1000	-0.450	-	1050	105.3%	0.460	-	1040	103.6%	-20.0 to 20.0	80%-120%
Barium	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	0	500	0.0700	-	500	100.0%	0.110	-	496	99.2%	-10.0 to 10.0	80%-120%
Bismuth	0	0	17.7	-	26.4	-	29.7	-	22.5	-	-40.0 to 40.0	-
Boron	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	0	1000	0.310	-	983	98.3%	0.100	-	976	97.6%	-10.0 to 10.0	80%-120%
Calcium	500000	500000	462000	92.4%	458000	91.5%	462000	92.4%	459000	91.8%	80%-120%	80%-120%
Chromium	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	0	500	-3.09	-	485	97.0%	-1.46	-	486	97.2%	-10.0 to 10.0	80%-120%
Copper	0	500	-2.34	-	533	106.5%	-2.35	-	534	106.8%	-10.0 to 10.0	80%-120%
Iron	200000	200000	198000	99.1%	196000	98.1%	198000	99.0%	197000	98.5%	80%-120%	80%-120%
Lanthanum	-	-	-	-	-	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-	-	-	-	-	-
Lithium	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium	500000	500000	532000	106.3%	528000	105.6%	532000	106.5%	529000	105.9%	80%-120%	80%-120%
Manganese	20	520	22.3	-	518	99.6%	22.4	-	520	100.0%	10.0 to 30.0	80%-120%
Molybdenum	0	1000	-1.30	-	1020	102.1%	-2.60	-	1020	101.8%	-10.0 to 10.0	80%-120%
Nickel	0	1000	-3.36	-	963	96.3%	-2.09	-	970	97.0%	-10.0 to 10.0	80%-120%
Palladium	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus	-	-	-	-	-	-	-	-	-	-	-	-
Potassium	-	-	-	-	-	-	-	-	-	-	-	-
Selenium	0	1000	2.05	-	1030	102.7%	1.48	-	1020	102.1%	-20.0 to 20.0	80%-120%
Silicon	-	-	-	-	-	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	-	-	-	-	-	-	-	-	-	-	-	-
Sulfur	-	-	-	-	-	-	-	-	-	-	-	-
Thallium	0	1000	11.6	-	988	98.8%	18.5	-	986	98.6%	-100 to 100	80%-120%
Thorium	0	0	13.6	-	15.4	-	9.97	-	13.2	-	-40.0 to 40.0	-
Tin	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	-	-	-	-	-	-	-	-	-	-	-	-
Tungsten	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	0	500	-3.26	-	501	100.2%	-1.82	-	507	101.4%	-10.0 to 10.0	80%-120%
Yttrium	0	0	-0.0700	-	0.120	-	-0.120	-	-0.200	-	-10.0 to 10.0	-
Zinc	0	1000	-4.65	-	973	97.3%	-4.06	-	961	96.1%	-10.0 to 10.0	80%-120%
Zirconium	-	-	-	-	-	-	-	-	-	-	-	-

SOUTHWEST RESEARCH INSTITUTE

Metals Report - Form IVA

010232

ICP-AES Interference Check Sample

Client: Tetra Tech
Task Order: 160115-1
Instrument: ICP TJA Trace 2
Result Units: ug/L

SDG: 588049
SRR: 56591, 56639, 56785, 56876
ICSA Source: See Raw Data
ICSB Source: See Raw Data

Case: 1116399
Project: 21431.01.001
Analysis Date: 02/05/2016
Associated Analytical Batch: 20160211-A002

Analyte	True		Found				Limit	Limit
	ICSA	ICSAB	ICSA	%Rec	ICSAB	%Rec	ICSA	ICSAB
Aluminum	-	-	-	-	-	-	-	-
Antimony	0	1000	-2.90	-	1060	105.9%	-100 to 100	80%-120%
Arsenic	0	1000	-1.36	-	1040	104.0%	-20.0 to 20.0	80%-120%
Barium	-	-	-	-	-	-	-	-
Beryllium	0	500	0.110	-	494	98.8%	-10.0 to 10.0	80%-120%
Bismuth	0	0	20.6	-	22.7	-	-40.0 to 40.0	-
Boron	-	-	-	-	-	-	-	-
Cadmium	0	1000	0.0300	-	980	98.0%	-10.0 to 10.0	80%-120%
Calcium	-	-	-	-	-	-	-	-
Chromium	-	-	-	-	-	-	-	-
Cobalt	-	-	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-	-
Iron	-	-	-	-	-	-	-	-
Lanthanum	-	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-	-
Lithium	-	-	-	-	-	-	-	-
Magnesium	-	-	-	-	-	-	-	-
Manganese	-	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-	-
Nickel	-	-	-	-	-	-	-	-
Palladium	-	-	-	-	-	-	-	-
Phosphorus	-	-	-	-	-	-	-	-
Potassium	-	-	-	-	-	-	-	-
Selenium	-	-	-	-	-	-	-	-
Silicon	-	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-	-
Sodium	-	-	-	-	-	-	-	-
Strontium	-	-	-	-	-	-	-	-
Sulfur	-	-	-	-	-	-	-	-
Thallium	0	1000	12.2	-	984	98.4%	-100 to 100	80%-120%
Thorium	-	-	-	-	-	-	-	-
Tin	-	-	-	-	-	-	-	-
Titanium	-	-	-	-	-	-	-	-
Tungsten	-	-	-	-	-	-	-	-
Vanadium	-	-	-	-	-	-	-	-
Yttrium	0	0	-0.240	-	-0.280	-	-10.0 to 10.0	-
Zinc	-	-	-	-	-	-	-	-
Zirconium	-	-	-	-	-	-	-	-

SOUTHWEST RESEARCH INSTITUTE

010233

Metals Report - Form IVA

ICP-AES Interference Check Sample

Client: Tetra Tech
Task Order: 160115-1
Instrument: ICP TJA Trace 2
Result Units: ug/L

SDG: 588049
SRR: 56591, 56639, 56785, 56876
ICSA Source: See Raw Data
ICSB Source: See Raw Data

Case: 1116399
Project: 21431.01.001
Analysis Date: 02/08/2016
Associated Analytical Batch: 20160211-A006

Analyte	True		Found								Limit	Limit
	ICSA	ICSAB	ICSA	%Rec	ICSAB	%Rec	ICSA	%Rec	ICSAB	%Rec	ICSA	ICSAB
Aluminum	-	-	-	-	-	-	-	-	-	-	-	-
Antimony	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic	-	-	-	-	-	-	-	-	-	-	-	-
Barium	0	500	2.81	-	522	104.5%	3.05	-	518	103.6%	-10.0 to 10.0	80%-120%
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Bismuth	-	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	-	-	-	-	-	-	-	-	-	-	-	-
Calcium	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	0	500	-0.420	-	486	97.2%	-0.560	-	483	96.7%	-10.0 to 10.0	80%-120%
Cobalt	-	-	-	-	-	-	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-	-	-	-	-	-
Iron	-	-	-	-	-	-	-	-	-	-	-	-
Lanthanum	-	-	-	-	-	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-	-	-	-	-	-
Lithium	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	-	-	-	-	-	-	-	-	-	-	-	-
Palladium	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus	-	-	-	-	-	-	-	-	-	-	-	-
Potassium	-	-	-	-	-	-	-	-	-	-	-	-
Selenium	-	-	-	-	-	-	-	-	-	-	-	-
Silicon	-	-	-	-	-	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	0	1000	3.70	-	1020	101.9%	3.75	-	1010	100.6%	-10.0 to 10.0	80%-120%
Sulfur	-	-	-	-	-	-	-	-	-	-	-	-
Thallium	-	-	-	-	-	-	-	-	-	-	-	-
Thorium	-	-	-	-	-	-	-	-	-	-	-	-
Tin	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	0	1000	2.77	-	952	95.2%	2.94	-	950	95.0%	-10.0 to 10.0	80%-120%
Tungsten	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	-	-	-	-	-	-	-	-	-	-	-	-
Yttrium	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-	-	-	-	-	-
Zirconium	0	1000	-0.410	-	931	93.1%	0.190	-	929	92.9%	-10.0 to 10.0	80%-120%

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form IVA
ICP-AES Interference Check Sample

010234

Client: Tetra Tech
Task Order: 160115-1
Instrument: ICP TJA Trace 2
Result Units: ug/L

SDG: 588049
SRR: 56591, 56639, 56785, 56876
ICSA Source: See Raw Data
ICSB Source: See Raw Data

Case: 1116399
Project: 21431.01.001
Analysis Date: 02/08/2016
Associated Analytical Batch: 20160211-A006

Analyte	True		Found				Limit	Limit
	ICSA	ICSAB	ICSA	%Rec	ICSAB	%Rec	ICSA	ICSAB
Aluminum	-	-	-	-	-	-	-	-
Antimony	-	-	-	-	-	-	-	-
Arsenic	-	-	-	-	-	-	-	-
Barium	0	500	3.23	-	517	103.4%	-10.0 to 10.0	80%-120%
Beryllium	-	-	-	-	-	-	-	-
Bismuth	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	-
Cadmium	-	-	-	-	-	-	-	-
Calcium	-	-	-	-	-	-	-	-
Chromium	0	500	-0.340	-	484	96.9%	-10.0 to 10.0	80%-120%
Cobalt	-	-	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-	-
Iron	-	-	-	-	-	-	-	-
Lanthanum	-	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-	-
Lithium	-	-	-	-	-	-	-	-
Magnesium	-	-	-	-	-	-	-	-
Manganese	-	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-	-
Nickel	-	-	-	-	-	-	-	-
Palladium	-	-	-	-	-	-	-	-
Phosphorus	-	-	-	-	-	-	-	-
Potassium	-	-	-	-	-	-	-	-
Selenium	-	-	-	-	-	-	-	-
Silicon	-	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-	-
Sodium	-	-	-	-	-	-	-	-
Strontium	0	1000	3.59	-	1000	100.3%	-10.0 to 10.0	80%-120%
Sulfur	-	-	-	-	-	-	-	-
Thallium	-	-	-	-	-	-	-	-
Thorium	-	-	-	-	-	-	-	-
Tin	-	-	-	-	-	-	-	-
Titanium	0	1000	3.00	-	951	95.1%	-10.0 to 10.0	80%-120%
Tungsten	-	-	-	-	-	-	-	-
Vanadium	-	-	-	-	-	-	-	-
Yttrium	-	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-	-
Zirconium	0	1000	0.300	-	931	93.1%	-10.0 to 10.0	80%-120%

SOUTHWEST RESEARCH INSTITUTE

010235

Metals Report - Form IVA

ICP-AES Interference Check Sample

Client: Tetra Tech
Task Order: 160115-1
Instrument: ICP TJA Trace 1
Result Units: ug/L

SDG: 588049
SRR: 56591, 56639, 56785, 56876
ICSA Source: See Raw Data
ICSB Source: See Raw Data

Case: 1116399
Project: 21431.01.001
Analysis Date: 02/05/2016
Associated Analytical Batch: 20160302-A001

Analyte	True		Found								Limit	Limit
	ICSA	ICSAB	ICSA	%Rec	ICSAB	%Rec	ICSA	%Rec	ICSAB	%Rec	ICSA	ICSAB
Aluminum	500000	500000	498000	99.5%	494000	98.7%	496000	99.2%	490000	98.0%	80%-120%	80%-120%
Antimony	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic	-	-	-	-	-	-	-	-	-	-	-	-
Barium	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Bismuth	-	-	-	-	-	-	-	-	-	-	-	-
Boron	0	1000	105	-	1150	115.1%	103	-	1150	115.2%	-160 to 160	80%-120%
Cadmium	-	-	-	-	-	-	-	-	-	-	-	-
Calcium	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	-	-	-	-	-	-	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-	-	-	-	-	-
Iron	-	-	-	-	-	-	-	-	-	-	-	-
Lanthanum	0	0	-4.02	-	-3.67	-	-3.48	-	-4.62	-	-20.0 to 20.0	-
Lead	0	1000	-3.93	-	1010	101.3%	-7.00	-	1000	100.2%	-10.0 to 10.0	80%-120%
Lithium	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	-	-	-	-	-	-	-	-	-	-	-	-
Palladium	0	0	1.90	-	1.54	-	-1.09	-	-2.91	-	-40.0 to 40.0	-
Phosphorus	0	1000	5.20	-	1090	108.6%	-12.7	-	989	98.9%	-100 to 100	80%-120%
Potassium	-	-	-	-	-	-	-	-	-	-	-	-
Selenium	-	-	-	-	-	-	-	-	-	-	-	-
Silicon	-	-	-	-	-	-	-	-	-	-	-	-
Silver	0	1000	-5.33	-	1120	112.4%	-4.96	-	1130	112.6%	-20.0 to 20.0	80%-120%
Sodium	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	-	-	-	-	-	-	-	-	-	-	-	-
Sulfur	0	0	-23.5	-	-4.53	-	-2.37	-	11.6	-	-200 to 200	-
Thallium	-	-	-	-	-	-	-	-	-	-	-	-
Thorium	-	-	-	-	-	-	-	-	-	-	-	-
Tin	0	1000	3.06	-	1040	103.8%	-0.130	-	1040	104.0%	-40.0 to 40.0	80%-120%
Titanium	-	-	-	-	-	-	-	-	-	-	-	-
Tungsten	0	0	3.25	-	15.9	-	4.30	-	15.0	-	-40.0 to 40.0	-
Vanadium	-	-	-	-	-	-	-	-	-	-	-	-
Yttrium	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-	-	-	-	-	-
Zirconium	-	-	-	-	-	-	-	-	-	-	-	-

SOUTHWEST RESEARCH INSTITUTE

Metals Report - Form IVA

ICP-AES Interference Check Sample

Client: Tetra Tech
Task Order: 160115-1
Instrument: ICP TJA Trace 1
Result Units: ug/L

SDG: 588049
SRR: 56591, 56639, 56785, 56876
ICSA Source: See Raw Data
ICSB Source: See Raw Data

Case: 1116399
Project: 21431.01.001
Analysis Date: 02/05/2016
Associated Analytical Batch: 20160302-A001

Analyte	True		Found								Limit	Limit
	ICSA	ICSAB	ICSA	%Rec	ICSAB	%Rec	ICSA	%Rec	ICSAB	%Rec	ICSA	ICSAB
Aluminum	-	-	-	-	-	-	-	-	-	-	-	-
Antimony	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic	-	-	-	-	-	-	-	-	-	-	-	-
Barium	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Bismuth	-	-	-	-	-	-	-	-	-	-	-	-
Boron	0	1000	101	-	1140	114.4%	105	-	1150	114.7%	-160 to 160	80%-120%
Cadmium	-	-	-	-	-	-	-	-	-	-	-	-
Calcium	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	-	-	-	-	-	-	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-	-	-	-	-	-
Iron	-	-	-	-	-	-	-	-	-	-	-	-
Lanthanum	0	0	-3.65	-	-4.16	-	-	-	-	-	-20.0 to 20.0	-
Lead	0	1000	-7.63	-	1000	100.1%	-7.27	-	996	99.6%	-10.0 to 10.0	80%-120%
Lithium	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	-	-	-	-	-	-	-	-	-	-	-	-
Palladium	0	0	-12.1	-	-3.89	-	-	-	-	-	-40.0 to 40.0	-
Phosphorus	0	1000	14.4	-	963	96.3%	-	-	-	-	-100 to 100	80%-120%
Potassium	-	-	-	-	-	-	-	-	-	-	-	-
Selenium	-	-	-	-	-	-	-	-	-	-	-	-
Silicon	-	-	-	-	-	-	-	-	-	-	-	-
Silver	0	1000	-5.43	-	1120	112.0%	-	-	-	-	-20.0 to 20.0	80%-120%
Sodium	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	-	-	-	-	-	-	-	-	-	-	-	-
Sulfur	0	0	0.300	-	16.3	-	4.19	-	10.7	-	-200 to 200	-
Thallium	-	-	-	-	-	-	-	-	-	-	-	-
Thorium	-	-	-	-	-	-	-	-	-	-	-	-
Tin	0	1000	-0.0900	-	1050	104.5%	-	-	-	-	-40.0 to 40.0	80%-120%
Titanium	-	-	-	-	-	-	-	-	-	-	-	-
Tungsten	0	0	-3.73	-	3.34	-	-	-	-	-	-40.0 to 40.0	-
Vanadium	-	-	-	-	-	-	-	-	-	-	-	-
Yttrium	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-	-	-	-	-	-
Zirconium	-	-	-	-	-	-	-	-	-	-	-	-

SOUTHWEST RESEARCH INSTITUTE

010237

Metals Report - Form IVA

ICP-AES Interference Check Sample

Client: Tetra Tech
Task Order: 160115-1
Instrument: ICP TJA Trace 1
Result Units: ug/L

SDG: 588049
SRR: 56591, 56639, 56785, 56876
ICSA Source: See Raw Data
ICSB Source: See Raw Data

Case: 1116399
Project: 21431.01.001
Analysis Date: 02/05/2016
Associated Analytical Batch: 20160302-A001

Analyte	True		Found				Limit	Limit
	ICSA	ICSAB	ICSA	%Rec	ICSAB	%Rec	ICSA	ICSAB
Aluminum	-	-	-	-	-	-	-	-
Antimony	-	-	-	-	-	-	-	-
Arsenic	-	-	-	-	-	-	-	-
Barium	-	-	-	-	-	-	-	-
Beryllium	-	-	-	-	-	-	-	-
Bismuth	-	-	-	-	-	-	-	-
Boron	0	1000	104	-	1140	114.1%	-160 to 160	80%-120%
Cadmium	-	-	-	-	-	-	-	-
Calcium	-	-	-	-	-	-	-	-
Chromium	-	-	-	-	-	-	-	-
Cobalt	-	-	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-	-
Iron	-	-	-	-	-	-	-	-
Lanthanum	-	-	-	-	-	-	-	-
Lead	0	1000	-6.56	-	995	99.5%	-10.0 to 10.0	80%-120%
Lithium	-	-	-	-	-	-	-	-
Magnesium	-	-	-	-	-	-	-	-
Manganese	-	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-	-
Nickel	-	-	-	-	-	-	-	-
Palladium	-	-	-	-	-	-	-	-
Phosphorus	-	-	-	-	-	-	-	-
Potassium	-	-	-	-	-	-	-	-
Selenium	-	-	-	-	-	-	-	-
Silicon	-	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-	-
Sodium	-	-	-	-	-	-	-	-
Strontium	-	-	-	-	-	-	-	-
Sulfur	0	0	4.35	-	5.68	-	-200 to 200	-
Thallium	-	-	-	-	-	-	-	-
Thorium	-	-	-	-	-	-	-	-
Tin	-	-	-	-	-	-	-	-
Titanium	-	-	-	-	-	-	-	-
Tungsten	-	-	-	-	-	-	-	-
Vanadium	-	-	-	-	-	-	-	-
Yttrium	-	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-	-
Zirconium	-	-	-	-	-	-	-	-

SOUTHWEST RESEARCH INSTITUTE

Metals Report - Form IVA

ICP-AES Interference Check Sample

Client: Tetra Tech
Task Order: 160115-1
Instrument: ICP TJA Trace 2
Result Units: ug/L

SDG: 588049
SRR: 56591, 56639, 56785, 56876
ICSA Source: See Raw Data
ICSB Source: See Raw Data

Case: 1116399
Project: 21431.01.001
Analysis Date: 03/30/2016
Associated Analytical Batch: 20160331-A010

Analyte	True		Found								Limit	Limit
	ICSA	ICSAB	ICSA	%Rec	ICSAB	%Rec	ICSA	%Rec	ICSAB	%Rec	ICSA	ICSAB
Aluminum	-	-	-	-	-	-	-	-	-	-	-	-
Antimony	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic	-	-	-	-	-	-	-	-	-	-	-	-
Barium	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Bismuth	-	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	-	-	-	-	-	-	-	-	-	-	-	-
Calcium	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	-	-	-	-	-	-	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-	-	-	-	-	-
Iron	-	-	-	-	-	-	-	-	-	-	-	-
Lanthanum	-	-	-	-	-	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-	-	-	-	-	-
Lithium	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	-	-	-	-	-	-	-	-	-	-	-	-
Palladium	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus	-	-	-	-	-	-	-	-	-	-	-	-
Potassium	-	-	-	-	-	-	-	-	-	-	-	-
Selenium	-	-	-	-	-	-	-	-	-	-	-	-
Silicon	0	1000	-0.14	-	1010	101.1%	-1.16	-	1020	101.7%	-200 to 200	80%-120%
Silver	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	-	-	-	-	-	-	-	-	-	-	-	-
Sulfur	-	-	-	-	-	-	-	-	-	-	-	-
Thallium	-	-	-	-	-	-	-	-	-	-	-	-
Thorium	-	-	-	-	-	-	-	-	-	-	-	-
Tin	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	-	-	-	-	-	-	-	-	-	-	-	-
Tungsten	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	-	-	-	-	-	-	-	-	-	-	-	-
Yttrium	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-	-	-	-	-	-
Zirconium	-	-	-	-	-	-	-	-	-	-	-	-

SOUTHWEST RESEARCH INSTITUTE

Metals Report - Form IVA

ICP-AES Interference Check Sample

Client: Tetra Tech
Task Order: 160115-1
Instrument: ICP TJA Trace 2
Result Units: ug/L

SDG: 588049
SRR: 56591, 56639, 56785, 56876
ICSA Source: See Raw Data
ICSB Source: See Raw Data

Case: 1116399
Project: 21431.01.001
Analysis Date: 03/30/2016
Associated Analytical Batch: 20160331-A010

Analyte	True		Found				Limit	Limit
	ICSA	ICSAB	ICSA	%Rec	ICSAB	%Rec	ICSA	ICSAB
Aluminum	-	-	-	-	-	-	-	-
Antimony	-	-	-	-	-	-	-	-
Arsenic	-	-	-	-	-	-	-	-
Barium	-	-	-	-	-	-	-	-
Beryllium	-	-	-	-	-	-	-	-
Bismuth	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	-
Cadmium	-	-	-	-	-	-	-	-
Calcium	-	-	-	-	-	-	-	-
Chromium	-	-	-	-	-	-	-	-
Cobalt	-	-	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-	-
Iron	-	-	-	-	-	-	-	-
Lanthanum	-	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-	-
Lithium	-	-	-	-	-	-	-	-
Magnesium	-	-	-	-	-	-	-	-
Manganese	-	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-	-
Nickel	-	-	-	-	-	-	-	-
Palladium	-	-	-	-	-	-	-	-
Phosphorus	-	-	-	-	-	-	-	-
Potassium	-	-	-	-	-	-	-	-
Selenium	-	-	-	-	-	-	-	-
Silicon	0	1000	3.75	-	1020	102.4%	-200 to 200	80%-120%
Silver	-	-	-	-	-	-	-	-
Sodium	-	-	-	-	-	-	-	-
Strontium	-	-	-	-	-	-	-	-
Sulfur	-	-	-	-	-	-	-	-
Thallium	-	-	-	-	-	-	-	-
Thorium	-	-	-	-	-	-	-	-
Tin	-	-	-	-	-	-	-	-
Titanium	-	-	-	-	-	-	-	-
Tungsten	-	-	-	-	-	-	-	-
Vanadium	-	-	-	-	-	-	-	-
Yttrium	-	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-	-
Zirconium	-	-	-	-	-	-	-	-

010240
Client Sample ID
A2-S1L

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form VIII
ICP-AES and ICP-MS Serial Dilutions

Client: Tetra Tech
Task Order: 160115-1
Lab ID: 588556L
Result Units: ug/L

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Matrix: Soil, Solid

Case: 1116399
Project: 21431.01.001

Analyte	Parent Sample Result	Qual	Serial Dilution Result	Qual	% Diff.	% Diff. Limit	M	Note	DF	Prep Batch	Analysis Date/Time
Aluminum	25400	D	25400	D	0.227%	10%	P1		50	20160126-P004	02/05/2016 19:31
Antimony	50.0	U	250	UD	-	-	P2	#	5	20160126-P004	02/05/2016 21:10
Arsenic	313		325	D	3.73%	-	P2	#	5	20160126-P004	02/05/2016 21:10
Barium	1570	D	1600	D	2.07%	10%	P2		500	20160127-P004	02/08/2016 16:11
Beryllium	11.2		25.0	UD	100.0%	-	P2	#	5	20160126-P004	02/05/2016 21:10
Bismuth	20.6		100	UD	100.0%	-	P2	#	5	20160126-P004	02/05/2016 21:10
Boron	80.0	UD	400	UD	-	-	P1	#	50	20160127-P003	02/06/2016 00:52
Cadmium	17.6		25.0	UD	100.0%	-	P2	#	5	20160126-P004	02/05/2016 21:10
Calcium	62900	D	63800	D	1.47%	10%	P2		50	20160126-P004	02/05/2016 19:33
Chromium	5.70	D	25.0	UD	100.0%	-	P2	#	50	20160127-P004	02/08/2016 17:54
Cobalt	931	D	942	D	1.20%	10%	P2		50	20160126-P004	02/05/2016 19:33
Copper	603	D	596	D	1.27%	10%	P2		50	20160126-P004	02/05/2016 19:33
Iron	17500	D	17700	D	1.04%	10%	P2		50	20160126-P004	02/05/2016 19:33
Lanthanum	370	N	369	DN	0.437%	-	P1	#	5	20160126-P004	02/05/2016 21:10
Lead	531	D	528	D	0.482%	10%	P1		50	20160127-P003	02/06/2016 00:52
Lithium	236		221	D	6.36%	-	P3	#	5	20160126-P004	02/08/2016 19:01
Magnesium	10100	D	10300	D	1.72%	10%	P2		50	20160126-P004	02/05/2016 19:33
Manganese	697	D	711	D	1.95%	10%	P2		50	20160126-P004	02/05/2016 19:33
Molybdenum	113	D	112	D	1.12%	-	P2	#	50	20160126-P004	02/05/2016 19:33
Nickel	1220	D	1230	D	0.798%	10%	P2		50	20160126-P004	02/05/2016 19:33
Palladium	20.0	U	100	UD	-	-	P1	#	5	20160126-P004	02/05/2016 21:10
Phosphorus	4610		4550	D	1.29%	10%	P1		5	20160126-P004	02/05/2016 21:10
Potassium	5850	D	6070	D	3.71%	-	P3	#	50	20160126-P004	02/08/2016 18:27
Selenium	48.4	D	55.9	D	15.5%	-	P2	#	50	20160126-P004	02/05/2016 19:33
Silicon	1290	D	1250	D	3.04%	-	P2	#	500	20160127-P004	03/30/2016 18:44
Silver	10.0	U	50.0	UD	-	-	P1	#	5	20160126-P004	02/05/2016 21:10
Sodium	3060	D	3070	D	0.279%	-	P3	#	50	20160126-P004	02/08/2016 18:27
Strontium	188	D	191	D	1.53%	-	P2	#	50	20160127-P004	02/08/2016 17:54
Sulfur	5330	D	5370	D	0.904%	10%	P1		50	20160127-P003	02/06/2016 00:52
Thallium	50.0	U	250	UD	-	-	P2	#	5	20160126-P004	02/05/2016 21:10
Thorium	61.9	D	100	UD	100.0%	-	P2	#	50	20160126-P004	02/05/2016 19:33
Tin	200	*N	207	*DN	3.46%	-	P1	#	5	20160126-P004	02/05/2016 21:10
Titanium	164	D	166	D	0.969%	-	P2	#	50	20160127-P004	02/08/2016 17:54
Tungsten	47.5		100	UD	100.0%	-	P1	#	5	20160126-P004	02/05/2016 21:10
Vanadium	192	D	191	D	0.470%	-	P2	#	50	20160126-P004	02/05/2016 19:33
Yttrium	171		176	D	2.99%	-	P2	#	5	20160126-P004	02/05/2016 21:10
Zinc	175	D	178	D	1.57%	-	P2	#	50	20160126-P004	02/05/2016 19:33
Zirconium	21.6	D	25.0	UD	100.0%	-	P2	#	50	20160127-P004	02/08/2016 17:54

# Indicates that the parent sample result is less than 50 times the RL, therefore no percent difference limit is applicable.

Data Reporting Qualifiers (Qual)	*Instruments/Methods (M)*
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the SwRI Reporting Limit (RL)	P3 - ICP PE Optima 7300DV/SW846 Method 6010B
U - Result is less than the SwRI Reporting Limit (RL))	P2 - ICP TJA Trace 2/SW846 Method 6010B
N - Matrix spike and/or matrix spike duplicate criteria was not met	P1 - ICP TJA Trace 1/SW846 Method 6010B
X - Analytical spike criteria was not met	NA - Not Applicable
E - Result is estimated due to interferences	
D - Result is reported from a dilution	
* - Duplicate criteria was not met	

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Metals Report - Form XII

Analysis Run Log

Client: Tetra Tech
Task Order: 160115-1
Analytical Batch: 20160302-A001
Analysis Method: SW846 Method 6010B

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Instrument: ICP TJA Trace 1

Case: 1116399
Project: 21431.01.001
Start Date: 02/05/2016
End Date: 02/06/2016

Lab Sample ID	Client Sample ID	Time	DF	Al	Sb	As	Ba	Be	Bi	Cd	Ca	Cr	Co	Cu	Fe	La	Pb	Li	Mg	Mn	Mo	Ni	Pd	Pt	K	Se	Si	Ag	Na	Sr	Tl	Th	Sn	Ti	W	V	Y	Zn	Zr
BLK	BLK	17:20	1	X						X						X	X						X	X				X		X			X		X				
CLP_STD4	CLP_STD4	17:25	1														X											X											
CLP_STD1	CLP_STD1	17:29	1	X																																		
CLP_STD3	CLP_STD3	17:33	1																																			
CLP_STD5	CLP_STD5	17:37	1							X														X									X					
CLP_STD2	CLP_STD2	17:41	1																																			
CLP_STD6	CLP_STD6	17:46	1													X							X							X				X				
ICV	ICV	17:51	1	X						X						X	X						X	X				X		X			X		X				
ICB	ICB	17:56	1	X						X						X	X						X	X				X		X			X		X				
CRI	CRI	18:01	1	X												X	X						X	X				X					X		X				
CRI-N	CRI-N	18:06	1							X																				X									
ICSA	ICSA	18:12	1	X						X						X	X						X	X				X		X			X		X				
ICSAB	ICSAB	18:17	1	X						X						X	X						X	X				X		X			X		X				
UCL-1	UCL-1	18:22	1	X						X						X	X						X	X				X		X			X		X				
UCL-2	UCL-2	18:27	1	X						X						X	X						X	X				X		X			X						
ZZZZ	ZZZZ	18:33	1																																			
CCV	CCV	18:38	1	X						X						X	X						X	X				X		X			X		X				
CCB	CCB	18:43	1	X						X						X	X						X	X				X		X			X		X				
PB16A26KE3	NA	18:48	1	X												X							X	X				X					X		X				
LCS16A26KE3	NA	18:54	1	X																				X				X											
LCS16A26KE4	NA	18:59	1													X							X										X		X				
LCS16A26KE7	NA	19:04	1	X												X								X															
LCS16A26KE8	NA	19:09	1	X																				X															
588049TF	1D7-84-85	19:15	10	X																																		
588556TF	A2-S1	19:20	10	X																																		
588556TFD	A2-S1D	19:25	10	X																																		
588556TFL	A2-S1L	19:31	50	X																																		
588556TFMS3	A2-S1MS	19:36	10	X																																		
CCV	CCV	19:41	1	X						X						X	X						X	X				X		X			X		X				
CCB	CCB	19:46	1	X						X						X	X						X	X				X		X			X		X				
588556TFMS4	A2-S1MS	19:52	10																																			
588556TFAS	A2-S1AS	19:57	10																																			
590212TF	A1-AC-1	20:02	10	X																																		
590213TF	A1-AC-3	20:07	10	X																																		
590214TF	A2-AC-21	20:13	10	X																																		
591000TF	WL-234CT	20:18	10	X																																		
CRI	CRI	20:23	1	X												X	X						X	X				X					X		X				
CRI-N	CRI-N	20:28	1							X																				X									
ICSA	ICSA	20:34	1	X						X						X	X						X	X				X		X			X		X				
ICSAB	ICSAB	20:39	1	X						X						X	X						X	X				X		X			X		X				
CCV	CCV	20:44	1	X						X						X	X						X	X				X		X			X		X				
CCB	CCB	20:49	1	X						X						X	X						X	X				X		X			X		X				
588049TF	1D7-84-85	20:55	1													X							X	X				X					X		X				
588556TF	A2-S1	21:00	1													X							X	X				X					X		X				
588556TFD	A2-S1D	21:05	1													X							X	X				X					X		X				
588556TFL	A2-S1L	21:10	5													X							X	X				X					X		X				
588556TFMS3	A2-S1MS	21:16	1																					X				X											
588556TFMS4	A2-S1MS	21:21	1													X							X										X		X				
588556TFAS	A2-S1AS	21:26	1																																				
590212TF	A1-AC-1	21:32	1													X							X	X				X							X		X		
590213TF	A1-AC-3	21:37	1													X							X	X				X							X		X		
590214TF	A2-AC-21	21:42	1													X							X	X				X							X		X		
CCV	CCV	21:47	1							X						X	X						X	X				X		X			X		X				
CCB	CCB	21:53	1							X						X	X						X	X				X		X			X		X				
591000TF	WL-234CT	21:58	1													X							X	X				X							X		X		
CRI	CRI	22:03	1													X	X						X	X				X							X		X		
CRI-N	CRI-N	22:09	1							X																				X									

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Metals Report - Form XII

Analysis Run Log

Client: Tetra Tech
Task Order: 160115-1
Analytical Batch: 20160302-A001
Analysis Method: SW846 Method 6010B

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Instrument: ICP TJA Trace 1

Case: 1116399
Project: 21431.01.001
Start Date: 02/05/2016
End Date: 02/06/2016

Lab Sample ID	Client Sample ID	Time	DF	Al	Sb	As	Be	Bi	Bd	Ca	Cr	Co	Cu	Fe	La	Pb	Li	Mg	Mn	Mo	Ni	Pd	Pt	K	Se	Si	Ag	Na	Sr	Tl	Th	Sn	Ti	W	V	Y	Zn	Zr
ICSA	ICSA	22:14	1						X						X	X						X	X				X		X			X		X				
ICSAB	ICSAB	22:19	1						X						X	X						X	X				X		X			X		X				
CCV	CCV	22:24	1						X						X	X						X	X				X		X			X		X				
CCB	CCB	22:30	1						X						X	X						X	X				X		X			X		X				
PB16A27KE1	NA	22:35	100																																			
LCS16A27KE1	NA	22:40	100																																			
LCS16A27KE2	NA	22:45	100																																			
588049RK	1D7-84-85	22:51	100																																			
588556RK	A2-S1	22:56	100																																			
588556RKD	A2-S1D	23:01	100																																			
588556RKL	A2-S1L	23:07	500																																			
588556RKAS	A2-S1AS	23:12	100																																			
590212RK	A1-AC-1	23:17	100																																			
590213RK	A1-AC-3	23:22	100																																			
CCV	CCV	23:28	1						X							X													X									
CCB	CCB	23:33	1						X							X													X									
590214RK	A2-AC-21	23:38	100																																			
591000RK	WL-234CT	23:44	100																																			
CRI	CRI	23:49	1													X																						
CRI-N	CRI-N	23:54	1						X																				X									
ICSA	ICSA	23:59	1						X							X													X									
ICSAB	ICSAB	00:05	1						X							X													X									
CCV	CCV	00:10	1						X							X													X									
CCB	CCB	00:15	1						X							X													X									
PB16A27KE1	NA	00:20	10						X							X													X									
LCS16A27KE1	NA	00:26	10																																			
LCS16A27KE2	NA	00:31	10																																			
588049RK	1D7-84-85	00:36	10						X							X													X									
588556RK	A2-S1	00:42	10						X							X													X									
588556RKD	A2-S1D	00:47	10						X							X													X									
588556RKL	A2-S1L	00:52	50						X							X													X									
588556RKAS	A2-S1AS	00:57	10																																			
590212RK	A1-AC-1	01:03	10						X							X													X									
590213RK	A1-AC-3	01:08	10						X							X													X									
CCV	CCV	01:13	1						X							X													X									
CCB	CCB	01:18	1						X							X													X									
590214RK	A2-AC-21	01:24	10						X							X													X									
591000RK	WL-234CT	01:29	10						X							X													X									
CRI	CRI	01:34	1													X																						
CRI-N	CRI-N	01:39	1						X																				X									
ICSA	ICSA	01:45	1						X							X													X									
ICSAB	ICSAB	01:50	1						X							X													X									
CCV	CCV	01:55	1						X							X													X									
CCB	CCB	02:01	1						X							X													X									

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010243

Metals Report - Form XII

Analysis Run Log

Client: Tetra Tech
Task Order: 160115-1
Analytical Batch: 20160211-A002
Analysis Method: SW846 Method 6010B

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Instrument: ICP TJA Trace 2

Case: 1116399
Project: 21431.01.001
Start Date: 02/05/2016
End Date: 02/08/2016

Lab Sample ID	Client Sample ID	Time	DF	Al	Sb	As	Be	Bi	Bd	Ca	Cr	Co	Cu	Fe	La	Pb	Li	Mg	Mn	Mo	Ni	Pd	Pt	K	Se	Si	Ag	Na	Sr	Tl	Th	Sn	Ti	W	V	Y	Zn	Zr
BLK	BLK	17:21	1		X	X		X	X		X	X		X	X	X			X	X	X	X								X	X					X	X	X
CLP_STD4	CLP_STD4	17:27	1		X																									X									
CLP_STD1	CLP_STD1	17:31	1								X				X				X																				
CLP_STD3	CLP_STD3	17:35	1			X				X			X							X																	X		X
CLP_STD5	CLP_STD5	17:38	1					X													X																		
CLP_STD2	CLP_STD2	17:42	1					X						X								X																	
CLP_STD6	CLP_STD6	17:46	1																												X						X		
ICV	ICV	17:50	1		X	X		X	X		X	X		X	X	X			X	X	X	X				X					X	X				X	X	X
ICB	ICB	17:55	1		X	X		X	X		X	X		X	X	X			X	X	X	X				X					X	X				X	X	X
CRI	CRI	18:01	1		X	X		X	X		X	X		X	X	X			X	X	X	X				X					X	X				X	X	X
CRI-N	CRI-N	18:06	1																																				
ICSA	ICSA	18:11	1		X	X		X	X		X	X		X	X	X			X	X	X	X				X					X	X				X	X	X
ICSAB	ICSAB	18:16	1		X	X		X	X		X	X		X	X	X			X	X	X	X				X					X	X				X	X	X
UCL-1	UCL-1	18:21	1		X	X		X	X		X	X		X	X	X			X	X	X	X				X					X	X				X	X	X
UCL-AL	UCL-AL	18:26	1																																				
UCL-2	UCL-2	18:31	1		X	X		X	X		X	X		X	X	X			X	X	X	X				X					X	X				X	X	X
ZZZZ	ZZZZ	18:36	1																																				
CCV	CCV	18:41	1		X	X		X	X		X	X		X	X	X			X	X	X	X				X					X	X				X	X	X
CCB	CCB	18:47	1		X	X		X	X		X	X		X	X	X			X	X	X	X				X					X	X				X	X	X
PB16A26KE3	NA	18:52	1		X	X		X	X		X	X		X	X	X			X	X	X	X				X					X	X				X	X	X
LCS16A26KE3	NA	18:57	1		X	X		X			X	X		X	X	X			X	X		X				X					X					X		X
LCS16A26KE4	NA	19:02	1						X												X										X						X		
LCS16A26KE7	NA	19:07	1					X			X			X	X				X	X	X	X										X					X	X	X
LCS16A26KE8	NA	19:12	1								X		X	X	X				X	X		X															X	X	X
588049TF	1D7-84-85	19:17	10								X		X	X	X				X	X	X	X				X						X					X		X
588556TF	A2-S1	19:22	10								X		X	X	X				X	X	X	X				X						X					X		X
588556TFD	A2-S1D	19:27	10								X		X	X	X				X	X	X	X				X						X					X		X
588556TFL	A2-S1L	19:33	50								X		X	X	X				X	X	X	X				X						X					X		X
588556TFMS3	A2-S1MS	19:38	10								X		X	X	X				X	X		X				X						X					X		X
CCV	CCV	19:43	1		X	X		X	X		X	X		X	X	X			X	X	X	X				X					X	X				X	X	X
CCB	CCB	19:48	1		X	X		X	X		X	X		X	X	X			X	X	X	X				X					X	X				X	X	X
588556TFMS4	A2-S1MS	19:53	10																		X										X								
588556TFAS	A2-S1AS	19:58	10																																				
590212TF	A1-AC-1	20:03	10								X		X	X	X				X	X	X	X				X						X					X		X
590213TF	A1-AC-3	20:08	10								X		X	X	X				X	X	X	X				X						X					X		X
590214TF	A2-AC-21	20:13	10								X		X	X	X				X	X	X	X				X						X					X		X
591000TF	WL-234CT	20:18	10								X		X	X	X				X	X	X	X				X						X					X		X
CRI	CRI	20:24	1		X	X		X	X		X	X		X	X	X			X	X	X	X				X					X	X				X	X	X
CRI-N	CRI-N	20:29	1																																				
ICSA	ICSA	20:34	1		X	X		X	X		X	X		X	X	X			X	X	X	X				X					X	X				X	X	X
ICSAB	ICSAB	20:39	1		X	X		X	X		X	X		X	X	X			X	X	X	X				X					X	X				X	X	X
CCV	CCV	20:44	1		X	X		X	X		X	X		X	X	X			X	X	X	X				X					X	X				X	X	X
CCB	CCB	20:49	1		X	X		X	X		X	X		X	X	X			X	X	X	X				X					X	X				X	X	X
588049TF	1D7-84-85	20:54	1		X	X		X	X		X																				X						X		
588556TF	A2-S1	20:59	1		X	X		X	X		X																				X						X		
588556TFD	A2-S1D	21:04	1		X	X		X	X		X																				X						X		
588556TFL	A2-S1L	21:10	5		X	X		X	X		X																				X						X		
588556TFMS3	A2-S1MS	21:15	1		X	X		X			X																				X								
588556TFMS4	A2-S1MS	21:20	1						X																												X		
588556TFAS	A2-S1AS	21:25	1																																				
590212TF	A1-AC-1	21:30	1		X	X		X	X		X																				X						X		
590213TF	A1-AC-3	21:35	1		X	X		X	X		X																				X						X		
590214TF	A2-AC-21	21:40	1		X	X		X	X		X																				X						X		
CCV	CCV	21:45	1		X	X		X	X		X																				X						X		
CCB	CCB	21:50	1		X	X		X	X		X																				X						X		
591000TF	WL-234CT	21:55	1		X	X		X	X		X																				X						X		
CRI	CRI	22:01	1		X	X		X	X		X																				X						X		

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Metals Report - Form XII

Analysis Run Log

Client: Tetra Tech
Task Order: 160115-1
Analytical Batch: 20160211-A002
Analysis Method: SW846 Method 6010B

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Instrument: ICP TJA Trace 2

Case: 1116399
Project: 21431.01.001
Start Date: 02/05/2016
End Date: 02/08/2016

Lab Sample ID	Client Sample ID	Time	DF	Al	Sb	As	Be	Bi	Cd	Ca	Cr	Co	Cu	Fe	La	Pb	Li	Mg	Mn	Mo	Ni	Pd	Pt	K	Se	Si	Ag	Na	Sr	Sn	Tl	Th	Sn	Ti	W	V	Y	Zn	Zr
CRI-N	CRI-N	22:06	1																																				
ICSA	ICSA	22:11	1		X	X		X	X		X																					X						X		
ICSAB	ICSAB	22:16	1		X	X		X	X		X																					X						X		
CCV	CCV	22:21	1		X	X		X	X		X																					X						X		
CCB	CCB	11:53	1		X	X		X	X		X																					X						X		

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Metals Report - Form XII

Analysis Run Log

Client: Tetra Tech
Task Order: 160115-1
Analytical Batch: 20160211-A006
Analysis Method: SW846 Method 6010B

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Instrument: ICP TJA Trace 2

Case: 1116399
Project: 21431.01.001
Start Date: 02/08/2016
End Date: 02/08/2016

Lab Sample ID	Client Sample ID	Time	DF	Al	Sb	As	Be	Bi	Cd	Ca	Cr	Co	Cu	Fe	La	Pb	Li	Mg	Mn	Mo	Ni	Pd	K	Se	Si	Ag	Na	Sr	Sl	Th	Sn	Ti	W	V	Y	Zn	Zr
BLK	BLK	13:49	1				X				X																	X				X					X
CLP_STD4	CLP_STD4	13:55	1																																		
CLP_STD1	CLP_STD1	13:59	1																																		
CLP_STD3	CLP_STD3	14:03	1																																		
CLP_STD5	CLP_STD5	14:07	1																									X				X					
CLP_STD2	CLP_STD2	14:11	1				X				X																										
CLP_STD6	CLP_STD6	14:15	1																																		X
ICV	ICV	14:20	1				X				X																	X				X					X
ICB	ICB	14:25	1				X				X																	X				X					X
CRI	CRI	14:30	1				X				X																	X				X					X
CRI-N	CRI-N	14:36	1																																		
ICSA	ICSA	14:41	1				X				X																	X				X					X
ICSAB	ICSAB	14:46	1				X				X																	X				X					X
UCL1	UCL1	14:51	1				X				X																	X				X					X
UCL-AL-500PPM	UCL-AL-500PPM	14:57	1				X				X																	X				X					X
UCL-2	UCL-2	15:09	1				X				X																	X				X					X
ZZZZ	ZZZZ	15:14	1																																		
ZZZZ	ZZZZ	15:19	1																																		
CCV	CCV	15:30	1				X				X																	X				X					X
CCB	CCB	15:35	1				X				X																	X				X					X
PB16A27KE2	NA	15:40	100																																		
LCS16A27KE3	NA	15:45	100				X																														
LCS16A27KE4	NA	15:50	100																																		
588049F	1D7-84-85	15:55	100				X																														
588556F	A2-S1	16:00	100				X																														
588556FD	A2-S1D	16:06	100				X																														
588556FL	A2-S1L	16:11	500				X																														
588556FAS	A2-S1AS	16:17	100																																		
590212F	A1-AC-1	16:22	100				X																														
590213F	A1-AC-3	16:27	100				X																														
CCV	CCV	16:32	1				X				X																	X				X					X
CCB	CCB	16:37	1				X				X																	X				X					X
590214F	A2-AC-21	16:43	100																																		
591000F	WL-234CT	16:48	100				X																														
CRI	CRI	16:53	1				X				X																	X				X					X
CRI-N	CRI-N	16:58	1																																		
ICSA	ICSA	17:03	1				X				X																	X				X					X
ICSAB	ICSAB	17:08	1				X				X																	X				X					X
CCV	CCV	17:13	1				X				X																	X				X					X
CCB	CCB	17:18	1				X				X																	X				X					X
PB16A27KE2	NA	17:23	10				X				X																	X				X					X
LCS16A27KE3	NA	17:28	10																									X				X					X
LCS16A27KE4	NA	17:34	10				X				X																	X				X					X
588049F	1D7-84-85	17:39	10								X																	X				X					X
588556F	A2-S1	17:44	10								X																	X				X					X
588556FD	A2-S1D	17:49	10								X																	X				X					X
588556FL	A2-S1L	17:54	50								X																	X				X					X
588556FAS	A2-S1AS	17:59	10																																		
590212F	A1-AC-1	18:04	10								X																	X				X					X
590213F	A1-AC-3	18:09	10								X																	X				X					X
CCV	CCV	18:14	1				X				X																	X				X					X
CCB	CCB	18:20	1				X				X																	X				X					X
590214F	A2-AC-21	18:25	10				X				X																	X				X					X
591000F	WL-234CT	18:30	10								X																	X				X					X
CRI	CRI	18:35	1				X				X																	X				X					X
CRI-N	CRI-N	18:40	1																																		
ICSA	ICSA	18:45	1				X				X																	X				X					X

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010246

Metals Report - Form XII

Analysis Run Log

Client: Tetra Tech
Task Order: 160115-1
Analytical Batch: 20160211-A006
Analysis Method: SW846 Method 6010B

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Instrument: ICP TJA Trace 2

Case: 1116399
Project: 21431.01.001
Start Date: 02/08/2016
End Date: 02/08/2016

Lab Sample ID	Client Sample ID	Time	DF	Al	Sb	As	Ba	Be	Bi	Cd	Ca	Cr	Co	Cu	Fe	La	Pb	Li	Mg	Mn	Mo	Ni	Pd	Pt	K	Se	Si	Ag	Na	Sr	Sn	Tl	Th	Ti	W	V	Y	Zn	Zr
ICSAB	ICSAB	18:50	1				X					X																		X					X				X
CCV	CCV	18:55	1				X					X																		X					X				X
CCB	CCB	19:00	1				X					X																		X					X				X

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Metals Report - Form XII

Analysis Run Log

Client: Tetra Tech
Task Order: 160115-1
Analytical Batch: 20160209-A001
Analysis Method: SW846 Method 6010B

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Instrument: ICP PE Optima 7300DV

Case: 1116399
Project: 21431.01.001
Start Date: 02/08/2016
End Date: 02/08/2016

Lab Sample ID	Client Sample ID	Time	DF	Al	Sb	As	Be	Bi	Cd	Ca	Cr	Co	Cu	Fe	La	Pb	Li	Mg	Mn	Mo	Ni	Pd	Pt	K	Se	Si	Ag	Na	Sr	Sl	Tl	Th	Sn	Ti	W	V	Y	Zn	Zr
CALIB BLANK 1	CALIB BLANK 1	17:55	1														X							X				X											
STD 1	STD 1	17:56	1														X							X				X											
ICV	ICV	17:58	1														X							X				X											
ICB	ICB	18:00	1														X							X				X											
CRI	CRI	18:01	1														X							X				X											
CRI-N	CRI-N	18:03	1																																				
ICSA	ICSA	18:04	1														X							X				X											
ICSAB	ICSAB	18:06	1														X							X				X											
UCL-1	UCL-1	18:08	1														X							X				X											
CCV	CCV	18:10	1														X							X				X											
CCB	CCB	18:12	1														X							X				X											
PB16A26KE3	NA	18:13	1														X							X				X											
LCS16A26KE3	NA	18:15	1																					X				X											
LCS16A26KE4	NA	18:17	1														X																						
LCS16A26KE7	NA	18:18	1														X							X				X											
LCS16A26KE8	NA	18:20	1														X							X				X											
588049TF	1D7-84-85	18:22	10																					X				X											
588556TF	A2-S1	18:24	10																					X				X											
588556TFD	A2-S1D	18:25	10																					X				X											
588556TFL	A2-S1L	18:27	50																					X				X											
588556TFMS3	A2-S1MS	18:29	10																					X				X											
CCV	CCV	18:31	1														X							X				X											
CCB	CCB	18:33	1														X							X				X											
588556TFMS4	A2-S1MS	18:34	10																																				
588556TFAS	A2-S1AS	18:36	10																																				
590212TF	A1-AC-1	18:38	10																					X				X											
590213TF	A1-AC-3	18:40	10																					X				X											
590214TF	A2-AC-21	18:41	10																					X				X											
591000TF	WL-234CT	18:43	10																					X				X											
CRI	CRI	18:45	1														X							X				X											
CRI-N	CRI-N	18:47	1																																				
ICSA	ICSA	18:48	1														X							X				X											
ICSAB	ICSAB	18:50	1														X							X				X											
CCV	CCV	18:52	1														X							X				X											
CCB	CCB	18:54	1														X							X				X											
588049TF	1D7-84-85	18:55	1														X																						
588556TF	A2-S1	18:57	1														X																						
588556TFD	A2-S1D	18:59	1														X																						
588556TFL	A2-S1L	19:01	5														X																						
588556TFMS3	A2-S1MS	19:03	1																																				
588556TFMS4	A2-S1MS	19:05	1														X																						
588556TFAS	A2-S1AS	19:07	1																																				
590212TF	A1-AC-1	19:08	1														X																						
590213TF	A1-AC-3	19:10	1														X																						
590214TF	A2-AC-21	19:13	1														X																						
CCV	CCV	19:15	1														X																						
CCB	CCB	19:17	1														X																						
591000TF	WL-234CT	19:18	1														X																						
CRI	CRI	19:20	1														X																						
CRI-N	CRI-N	19:22	1																																				
ICSA	ICSA	19:23	1														X																						
ICSAB	ICSAB	19:25	1														X																						
CCV	CCV	19:27	1														X																						
CCB	CCB	19:29	1														X																						

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010248

Metals Report - Form XII

Analysis Run Log

Client: Tetra Tech
Task Order: 160115-1
Analytical Batch: 20160331-A010
Analysis Method: SW846 Method 6010B

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Instrument: ICP TJA Trace 2

Case: 1116399
Project: 21431.01.001
Start Date: 03/30/2016
End Date: 03/31/2016

Lab Sample ID	Client Sample ID	Time	DF	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co	Cu	Fe	La	Pb	Li	Mg	Mn	Mo	Ni	Pd	P	K	Se	Si	Ag	Na	Sr	Sl	Tl	Th	Sn	Ti	W	V	Y	Zn	Zr
BLK	BLK	14:13	1																									X													
CLP_STD4	CLP_STD4	14:19	1																																						
CLP_STD1	CLP_STD1	14:23	1																																						
CLP_STD3	CLP_STD3	14:27	1																																						
CLP_STD5	CLP_STD5	14:31	1																									X													
CLP_STD2	CLP_STD2	14:35	1																																						
CLP_STD6	CLP_STD6	14:39	1																																						
ICV	ICV	14:44	1																									X													
ICB	ICB	14:49	1																									X													
CRI	CRI	14:54	1																									X													
CRI-N	CRI-N	15:00	1																																						
ICSA	ICSA	15:05	1																									X													
ICSAB	ICSAB	15:19	1																									X													
UCL1	UCL1	15:24	1																									X													
UCL-AL-500PPM	UCL-AL-500PPM	15:29	1																									X													
UCL2	UCL2	15:34	1																																						
ZZZZ	ZZZZ	15:40	1																																						
CCV	CCV	15:45	1																									X													
CCB	CCB	15:50	1																									X													
Z	Z	16:10	1																																						
Z	Z	16:15	1																																						
Z	Z	16:20	1																																						
Z	Z	16:26	1																																						
Z	Z	16:31	1																																						
Z	Z	16:36	1																																						
Z	Z	16:41	1																																						
Z	Z	16:46	1																																						
Z	Z	16:51	1																																						
Z	Z	16:56	1																																						
CCV	CCV	17:01	1																									X													
CCB	CCB	17:07	1																									X													
Z	Z	17:12	1																																						
Z	Z	17:17	1																																						
Z	Z	17:22	1																																						
Z	Z	17:27	1																																						
ZZZZ	ZZZZ	17:32	1																																						
CRI	CRI	17:37	1																									X													
CRI-N	CRI-N	17:42	1																																						
ICSA	ICSA	17:47	1																									X													
ICSAB	ICSAB	17:53	1																									X													
CCV	CCV	17:58	1																									X													
CCB	CCB	18:03	1																									X													
PB16A27KE2	NA	18:14	100																									X													
LCS16A27KE3	NA	18:19	100																									X													
LCS16A27KE4	NA	18:24	100																									X													
588049F	1D7-84-85	18:29	100																									X													
588556F	A2-S1	18:34	100																									X													
588556FD	A2-S1D	18:39	100																									X													
588556FL	A2-S1L	18:44	500																									X													
588556FAS	A2-S1AS	18:49	100																																						
590212F	A1-AC-1	18:55	100																									X													
590213F	A1-AC-3	19:00	100																									X													
CCV	CCV	19:05	1																									X													
CCB	CCB	19:10	1																									X													
CCV	CCV	08:46	1																									X													
CCB	CCB	08:51	1																									X													
590214F	A2-AC-21	08:56	100																									X													

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Metals Report - Form XII

Analysis Run Log

010249

Client: Tetra Tech
Task Order: 160115-1
Analytical Batch: 20160331-A010
Analysis Method: SW846 Method 6010B

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Instrument: ICP TJA Trace 2

Case: 1116399
Project: 21431.01.001
Start Date: 03/30/2016
End Date: 03/31/2016

Lab Sample ID	Client Sample ID	Time	DF	Al	Sb	As	Be	Bi	Bd	Ca	Cr	Co	Cu	Fe	La	Pb	Li	Mg	Mn	Mo	Ni	Pd	Pt	K	Se	Si	Ag	Na	Sr	Tl	Th	Sn	Ti	W	V	Y	Zn	Zr
591000F	WL-234CT	09:01	100																							X													
ZZZZ	ZZZZ	09:06	1																																				
CRI	CRI	09:11	1																							X													
CRI-N	CRI-N	09:16	1																																				
ICSA	ICSA	09:21	1																							X													
ICSAB	ICSAB	09:27	1																							X													
CCV	CCV	09:32	1																							X													
CCB	CCB	09:37	1																							X													

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010250

Metals Report - Form XIV

Internal Standards Relative Intensity Summary

Client: Tetra Tech
Task Order: 160115-1
Analytical Batch: 20160211-A002
Analysis Method: SW846 Method 6010B

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Instrument: ICP TJA Trace 2

Case: 1116399
Project: 21431.01.001
Start Date: 02/05/2016
End Date: 02/08/2016

Lab Sample ID	Client Sample ID	Time	DF	Sc
BLK	BLK	17:21	1	-
CLP_STD4	CLP_STD4	17:27	1	-
CLP_STD1	CLP_STD1	17:31	1	-
CLP_STD3	CLP_STD3	17:35	1	-
CLP_STD5	CLP_STD5	17:38	1	-
CLP_STD2	CLP_STD2	17:42	1	-
CLP_STD6	CLP_STD6	17:46	1	-
ICV	ICV	17:50	1	102
ICB	ICB	17:55	1	102
CRI	CRI	18:01	1	102
CRI-N	CRI-N	18:06	1	-
ICSA	ICSA	18:11	1	93.6
ICSAB	ICSAB	18:16	1	94.2
UCL-1	UCL-1	18:21	1	87.2
UCL-AL	UCL-AL	18:26	1	-
UCL-2	UCL-2	18:31	1	97.8
ZZZZ	ZZZZ	18:36	1	103
CCV	CCV	18:41	1	101
CCB	CCB	18:47	1	103
PB16A26KE3	NA	18:52	1	109
LCS16A26KE3	NA	18:57	1	104
LCS16A26KE4	NA	19:02	1	110
LCS16A26KE7	NA	19:07	1	104
LCS16A26KE8	NA	19:12	1	101
588049TF	1D7-84-85	19:17	10	104
588556TF	A2-S1	19:22	10	103
588556TFD	A2-S1D	19:27	10	103
588556TFL	A2-S1L	19:33	50	104
588556TFMS3	A2-S1MS	19:38	10	102
CCV	CCV	19:43	1	101
CCB	CCB	19:48	1	103
588556TFMS4	A2-S1MS	19:53	10	103
588556TFAS	A2-S1AS	19:58	10	-
590212TF	A1-AC-1	20:03	10	104
590213TF	A1-AC-3	20:08	10	103
590214TF	A2-AC-21	20:13	10	103
591000TF	WL-234CT	20:18	10	104
CRI	CRI	20:24	1	104
CRI-N	CRI-N	20:29	1	-
ICSA	ICSA	20:34	1	94.1
ICSAB	ICSAB	20:39	1	94.4
CCV	CCV	20:44	1	102
CCB	CCB	20:49	1	104
588049TF	1D7-84-85	20:54	1	104
588556TF	A2-S1	20:59	1	98.2
588556TFD	A2-S1D	21:04	1	97.1
588556TFL	A2-S1L	21:10	5	100
588556TFMS3	A2-S1MS	21:15	1	97.7
588556TFMS4	A2-S1MS	21:20	1	97.9
588556TFAS	A2-S1AS	21:25	1	-
590212TF	A1-AC-1	21:30	1	106
590213TF	A1-AC-3	21:35	1	96.0
590214TF	A2-AC-21	21:40	1	104
CCV	CCV	21:45	1	102
CCB	CCB	21:50	1	104
591000TF	WL-234CT	21:55	1	99.0

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form XIV
Internal Standards Relative Intensity Summary

Client: Tetra Tech
Task Order: 160115-1
Analytical Batch: 20160211-A002
Analysis Method: SW846 Method 6010B

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Instrument: ICP TJA Trace 2

Case: 1116399
Project: 21431.01.001
Start Date: 02/05/2016
End Date: 02/08/2016

Lab Sample ID	Client Sample ID	Time	DF	Sc
CRI	CRI	22:01	1	104
CRI-N	CRI-N	22:06	1	-
ICSA	ICSA	22:11	1	94.0
ICSAB	ICSAB	22:16	1	94.1
CCV	CCV	22:21	1	102
CCB	CCB	11:53	1	99.6

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form XIV
Internal Standards Relative Intensity Summary

Client: Tetra Tech
Task Order: 160115-1
Analytical Batch: 20160302-A001
Analysis Method: SW846 Method 6010B

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Instrument: ICP TJA Trace 1

Case: 1116399
Project: 21431.01.001
Start Date: 02/05/2016
End Date: 02/06/2016

Lab Sample ID	Client Sample ID	Time	DF	Sc
BLK	BLK	17:20	1	-
CLP_STD4	CLP_STD4	17:25	1	-
CLP_STD1	CLP_STD1	17:29	1	-
CLP_STD3	CLP_STD3	17:33	1	-
CLP_STD5	CLP_STD5	17:37	1	-
CLP_STD2	CLP_STD2	17:41	1	-
CLP_STD6	CLP_STD6	17:46	1	-
ICV	ICV	17:51	1	96.9
ICB	ICB	17:56	1	98.7
CRI	CRI	18:01	1	98.9
CRI-N	CRI-N	18:06	1	98.7
ICSA	ICSA	18:12	1	88.1
ICSAB	ICSAB	18:17	1	87.5
UCL-1	UCL-1	18:22	1	81.8
UCL-2	UCL-2	18:27	1	92.7
ZZZZ	ZZZZ	18:33	1	99.8
CCV	CCV	18:38	1	97.3
CCB	CCB	18:43	1	99.1
PB16A26KE3	NA	18:48	1	101
LCS16A26KE3	NA	18:54	1	98.7
LCS16A26KE4	NA	18:59	1	103
LCS16A26KE7	NA	19:04	1	95.9
LCS16A26KE8	NA	19:09	1	95.2
588049TF	1D7-84-85	19:15	10	98.2
588556TF	A2-S1	19:20	10	97.0
588556TFD	A2-S1D	19:25	10	98.1
588556TFL	A2-S1L	19:31	50	99.6
588556TFMS3	A2-S1MS	19:36	10	97.3
CCV	CCV	19:41	1	97.2
CCB	CCB	19:46	1	98.9
588556TFMS4	A2-S1MS	19:52	10	-
588556TFAS	A2-S1AS	19:57	10	-
590212TF	A1-AC-1	20:02	10	99.3
590213TF	A1-AC-3	20:07	10	97.5
590214TF	A2-AC-21	20:13	10	98.5
591000TF	WL-234CT	20:18	10	99.5
CRI	CRI	20:23	1	101
CRI-N	CRI-N	20:28	1	101
ICSA	ICSA	20:34	1	88.7
ICSAB	ICSAB	20:39	1	90.5
CCV	CCV	20:44	1	98.6
CCB	CCB	20:49	1	99.8
588049TF	1D7-84-85	20:55	1	92.4
588556TF	A2-S1	21:00	1	90.4
588556TFD	A2-S1D	21:05	1	91.8
588556TFL	A2-S1L	21:10	5	96.1
588556TFMS3	A2-S1MS	21:16	1	90.7
588556TFMS4	A2-S1MS	21:21	1	91.9
588556TFAS	A2-S1AS	21:26	1	-
590212TF	A1-AC-1	21:32	1	95.9
590213TF	A1-AC-3	21:37	1	89.4
590214TF	A2-AC-21	21:42	1	89.8
CCV	CCV	21:47	1	97.7
CCB	CCB	21:53	1	100
591000TF	WL-234CT	21:58	1	93.0
CRI	CRI	22:03	1	100

SOUTHWEST RESEARCH INSTITUTE

Metals Report - Form XIV

Internal Standards Relative Intensity Summary

Client: Tetra Tech
Task Order: 160115-1
Analytical Batch: 20160302-A001
Analysis Method: SW846 Method 6010B

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Instrument: ICP TJA Trace 1

Case: 1116399
Project: 21431.01.001
Start Date: 02/05/2016
End Date: 02/06/2016

Lab Sample ID	Client Sample ID	Time	DF	Sc
CRI-N	CRI-N	22:09	1	99.2
ICSA	ICSA	22:14	1	87.7
ICSAB	ICSAB	22:19	1	89.1
CCV	CCV	22:24	1	96.6
CCB	CCB	22:30	1	98.4
PB16A27KE1	NA	22:35	100	-
LCS16A27KE1	NA	22:40	100	-
LCS16A27KE2	NA	22:45	100	-
588049RK	1D7-84-85	22:51	100	-
588556RK	A2-S1	22:56	100	-
588556RKD	A2-S1D	23:01	100	-
588556RKL	A2-S1L	23:07	500	-
588556RKAS	A2-S1AS	23:12	100	-
590212RK	A1-AC-1	23:17	100	-
590213RK	A1-AC-3	23:22	100	-
CCV	CCV	23:28	1	95.8
CCB	CCB	23:33	1	98.7
590214RK	A2-AC-21	23:38	100	-
591000RK	WL-234CT	23:44	100	-
CRI	CRI	23:49	1	99.0
CRI-N	CRI-N	23:54	1	98.8
ICSA	ICSA	23:59	1	89.7
ICSAB	ICSAB	00:05	1	88.5
CCV	CCV	00:10	1	95.9
CCB	CCB	00:15	1	99.4
PB16A27KE1	NA	00:20	10	100
LCS16A27KE1	NA	00:26	10	-
LCS16A27KE2	NA	00:31	10	-
588049RK	1D7-84-85	00:36	10	97.9
588556RK	A2-S1	00:42	10	99.2
588556RKD	A2-S1D	00:47	10	98.4
588556RKL	A2-S1L	00:52	50	99.0
588556RKAS	A2-S1AS	00:57	10	-
590212RK	A1-AC-1	01:03	10	98.3
590213RK	A1-AC-3	01:08	10	97.6
CCV	CCV	01:13	1	97.0
CCB	CCB	01:18	1	99.9
590214RK	A2-AC-21	01:24	10	97.7
591000RK	WL-234CT	01:29	10	98.8
CRI	CRI	01:34	1	98.7
CRI-N	CRI-N	01:39	1	99.7
ICSA	ICSA	01:45	1	89.0
ICSAB	ICSAB	01:50	1	87.7
CCV	CCV	01:55	1	96.7
CCB	CCB	02:01	1	98.6

SOUTHWEST RESEARCH INSTITUTE

Metals Report - Form XIV

Internal Standards Relative Intensity Summary

Client: Tetra Tech
Task Order: 160115-1
Analytical Batch: 20160211-A006
Analysis Method: SW846 Method 6010B

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Instrument: ICP TJA Trace 2

Case: 1116399
Project: 21431.01.001
Start Date: 02/08/2016
End Date: 02/08/2016

Lab Sample ID	Client Sample ID	Time	DF	Sc
BLK	BLK	13:49	1	-
CLP_STD4	CLP_STD4	13:55	1	-
CLP_STD1	CLP_STD1	13:59	1	-
CLP_STD3	CLP_STD3	14:03	1	-
CLP_STD5	CLP_STD5	14:07	1	-
CLP_STD2	CLP_STD2	14:11	1	-
CLP_STD6	CLP_STD6	14:15	1	-
ICV	ICV	14:20	1	101
ICB	ICB	14:25	1	102
CRI	CRI	14:30	1	104
CRI-N	CRI-N	14:36	1	-
ICSA	ICSA	14:41	1	93.9
ICSAB	ICSAB	14:46	1	93.3
UCL1	UCL1	14:51	1	86.6
UCL-AL-500PPM	UCL-AL-500PPM	14:57	1	91.1
UCL-2	UCL-2	15:09	1	96.6
ZZZZ	ZZZZ	15:14	1	102
ZZZZ	ZZZZ	15:19	1	-
CCV	CCV	15:30	1	101
CCB	CCB	15:35	1	103
PB16A27KE2	NA	15:40	100	-
LCS16A27KE3	NA	15:45	100	103
LCS16A27KE4	NA	15:50	100	-
588049F	1D7-84-85	15:55	100	103
588556F	A2-S1	16:00	100	103
588556FD	A2-S1D	16:06	100	103
588556FL	A2-S1L	16:11	500	104
588556FAS	A2-S1AS	16:17	100	-
590212F	A1-AC-1	16:22	100	103
590213F	A1-AC-3	16:27	100	103
CCV	CCV	16:32	1	101
CCB	CCB	16:37	1	103
590214F	A2-AC-21	16:43	100	-
591000F	WL-234CT	16:48	100	103
CRI	CRI	16:53	1	103
CRI-N	CRI-N	16:58	1	-
ICSA	ICSA	17:03	1	93.4
ICSAB	ICSAB	17:08	1	94.1
CCV	CCV	17:13	1	101
CCB	CCB	17:18	1	102
PB16A27KE2	NA	17:23	10	99.2
LCS16A27KE3	NA	17:28	10	99.3
LCS16A27KE4	NA	17:34	10	99.3
588049F	1D7-84-85	17:39	10	98.9
588556F	A2-S1	17:44	10	97.8
588556FD	A2-S1D	17:49	10	96.6
588556FL	A2-S1L	17:54	50	98.9
588556FAS	A2-S1AS	17:59	10	-
590212F	A1-AC-1	18:04	10	95.9
590213F	A1-AC-3	18:09	10	96.1
CCV	CCV	18:14	1	98.1
CCB	CCB	18:20	1	104
590214F	A2-AC-21	18:25	10	98.4
591000F	WL-234CT	18:30	10	99.0
CRI	CRI	18:35	1	104
CRI-N	CRI-N	18:40	1	-

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form XIV
Internal Standards Relative Intensity Summary

Client: Tetra Tech
Task Order: 160115-1
Analytical Batch: 20160211-A006
Analysis Method: SW846 Method 6010B

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Instrument: ICP TJA Trace 2

Case: 1116399
Project: 21431.01.001
Start Date: 02/08/2016
End Date: 02/08/2016

Lab Sample ID	Client Sample ID	Time	DF	Sc
ICSA	ICSA	18:45	1	92.8
ICSAB	ICSAB	18:50	1	93.3
CCV	CCV	18:55	1	101
CCB	CCB	19:00	1	102

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form XIV
Internal Standards Relative Intensity Summary

Client: Tetra Tech
Task Order: 160115-1
Analytical Batch: 20160209-A001
Analysis Method: SW846 Method 6010B

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Instrument: ICP PE Optima 7300DV

Case: 1116399
Project: 21431.01.001
Start Date: 02/08/2016
End Date: 02/08/2016

Lab Sample ID	Client Sample ID	Time	DF	Sc
CALIB BLANK 1	CALIB BLANK 1	17:55	1	-
STD 1	STD 1	17:56	1	-
ICV	ICV	17:58	1	97.7
ICB	ICB	18:00	1	98.4
CRI	CRI	18:01	1	99.0
CRI-N	CRI-N	18:03	1	-
ICSA	ICSA	18:04	1	90.7
ICSAB	ICSAB	18:06	1	91.5
UCL-1	UCL-1	18:08	1	84.9
CCV	CCV	18:10	1	97.8
CCB	CCB	18:12	1	99.8
PB16A26KE3	NA	18:13	1	98.3
LCS16A26KE3	NA	18:15	1	95.9
LCS16A26KE4	NA	18:17	1	101
LCS16A26KE7	NA	18:18	1	98.6
LCS16A26KE8	NA	18:20	1	93.7
588049TF	1D7-84-85	18:22	10	99.3
588556TF	A2-S1	18:24	10	99.3
588556TFD	A2-S1D	18:25	10	99.4
588556TFL	A2-S1L	18:27	50	98.9
588556TFMS3	A2-S1MS	18:29	10	100
CCV	CCV	18:31	1	100
CCB	CCB	18:33	1	102
588556TFMS4	A2-S1MS	18:34	10	-
588556TFAS	A2-S1AS	18:36	10	-
590212TF	A1-AC-1	18:38	10	99.7
590213TF	A1-AC-3	18:40	10	100
590214TF	A2-AC-21	18:41	10	101
591000TF	WL-234CT	18:43	10	101
CRI	CRI	18:45	1	101
CRI-N	CRI-N	18:47	1	-
ICSA	ICSA	18:48	1	91.8
ICSAB	ICSAB	18:50	1	92.3
CCV	CCV	18:52	1	99.8
CCB	CCB	18:54	1	101
588049TF	1D7-84-85	18:55	1	94.5
588556TF	A2-S1	18:57	1	92.1
588556TFD	A2-S1D	18:59	1	92.8
588556TFL	A2-S1L	19:01	5	98.0
588556TFMS3	A2-S1MS	19:03	1	-
588556TFMS4	A2-S1MS	19:05	1	92.7
588556TFAS	A2-S1AS	19:07	1	-
590212TF	A1-AC-1	19:08	1	98.7
590213TF	A1-AC-3	19:10	1	91.7
590214TF	A2-AC-21	19:13	1	95.4
CCV	CCV	19:15	1	97.3
CCB	CCB	19:17	1	97.2
591000TF	WL-234CT	19:18	1	97.7
CRI	CRI	19:20	1	102
CRI-N	CRI-N	19:22	1	-
ICSA	ICSA	19:23	1	91.7
ICSAB	ICSAB	19:25	1	92.1
CCV	CCV	19:27	1	99.1
CCB	CCB	19:29	1	99.6

SOUTHWEST RESEARCH INSTITUTE

Metals Report - Form XIV

Internal Standards Relative Intensity Summary

Client: Tetra Tech
Task Order: 160115-1
Analytical Batch: 20160331-A010
Analysis Method: SW846 Method 6010B

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Instrument: ICP TJA Trace 2

Case: 1116399
Project: 21431.01.001
Start Date: 03/30/2016
End Date: 03/31/2016

Lab Sample ID	Client Sample ID	Time	DF	Sc
BLK	BLK	14:13	1	-
CLP_STD4	CLP_STD4	14:19	1	-
CLP_STD1	CLP_STD1	14:23	1	-
CLP_STD3	CLP_STD3	14:27	1	-
CLP_STD5	CLP_STD5	14:31	1	-
CLP_STD2	CLP_STD2	14:35	1	-
CLP_STD6	CLP_STD6	14:39	1	-
ICV	ICV	14:44	1	97.0
ICB	ICB	14:49	1	99.6
CRI	CRI	14:54	1	98.6
CRI-N	CRI-N	15:00	1	-
ICSA	ICSA	15:05	1	88.7
ICSAB	ICSAB	15:19	1	87.8
UCL1	UCL1	15:24	1	87.1
UCL-AL-500PPM	UCL-AL-500PPM	15:29	1	92.2
UCL2	UCL2	15:34	1	-
ZZZZ	ZZZZ	15:40	1	-
CCV	CCV	15:45	1	96.7
CCB	CCB	15:50	1	99.0
Z	Z	16:10	1	-
Z	Z	16:15	1	-
Z	Z	16:20	1	-
Z	Z	16:26	1	-
Z	Z	16:31	1	-
Z	Z	16:36	1	-
Z	Z	16:41	1	-
Z	Z	16:46	1	-
Z	Z	16:51	1	-
Z	Z	16:56	1	-
CCV	CCV	17:01	1	98.1
CCB	CCB	17:07	1	100
Z	Z	17:12	1	-
Z	Z	17:17	1	-
Z	Z	17:22	1	-
Z	Z	17:27	1	-
ZZZZ	ZZZZ	17:32	1	-
CRI	CRI	17:37	1	99.1
CRI-N	CRI-N	17:42	1	-
ICSA	ICSA	17:47	1	90.0
ICSAB	ICSAB	17:53	1	89.6
CCV	CCV	17:58	1	98.6
CCB	CCB	18:03	1	101
PB16A27KE2	NA	18:14	100	99.7
LCS16A27KE3	NA	18:19	100	99.3
LCS16A27KE4	NA	18:24	100	99.4
588049F	1D7-84-85	18:29	100	99.6
588556F	A2-S1	18:34	100	99.9
588556FD	A2-S1D	18:39	100	99.4
588556FL	A2-S1L	18:44	500	100
588556FAS	A2-S1AS	18:49	100	-
590212F	A1-AC-1	18:55	100	99.1
590213F	A1-AC-3	19:00	100	99.5
CCV	CCV	19:05	1	97.1
CCB	CCB	19:10	1	100
CCV	CCV	08:46	1	94.1
CCB	CCB	08:51	1	97.5

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form XIV
Internal Standards Relative Intensity Summary

Client: Tetra Tech
Task Order: 160115-1
Analytical Batch: 20160331-A010
Analysis Method: SW846 Method 6010B

SDG: 588049
SRR: 56591, 56639, 56785, 56876
Instrument: ICP TJA Trace 2

Case: 1116399
Project: 21431.01.001
Start Date: 03/30/2016
End Date: 03/31/2016

Lab Sample ID	Client Sample ID	Time	DF	Sc
590214F	A2-AC-21	08:56	100	95.9
591000F	WL-234CT	09:01	100	97.4
ZZZZ	ZZZZ	09:06	1	-
CRI	CRI	09:11	1	94.3
CRI-N	CRI-N	09:16	1	-
ICSA	ICSA	09:21	1	84.6
ICSAB	ICSAB	09:27	1	83.7
CCV	CCV	09:32	1	92.3
CCB	CCB	09:37	1	94.6

SOUTHWEST RESEARCH INSTITUTE
Metals Report - Form XVIII
Preparation/Digestion Summary

Client: Tetra Tech
Task Order: 160115-1

SDG: 588049
SRR: 56591, 56639, 56785, 56876

Case: 1116399
Project: 21431.01.001

Prep Batch	Method	Preparation Date
20160126-P004	Teflon Beaker	01/26/2016
20160127-P003	Whole Rock	01/27/2016
20160127-P004	80/20 Fusion	01/27/2016

Digestion Log

010260

Southwest Research Institute
San Antonio, Texas 78228

Batch: 20160126-P004 (Ver. 2)
Status: APPROVED

Rad Samples Present

Client(s): Tetra Tech
Task Order(s): 160115-1
SDG(s): 588049
Project(s): 21431.01.001
Method(s): Teflon Beaker (TAP: 01-0406-150/008)
Matrix(s): Soil, Solid
Intrument(s): ICP, ICP-MS
Reagent(s): HNO3 62999, HClO4 54738, HCl 65771, HF 63016
Balance(s): Balance#88
Pipette(s): 1000-3, 200-1
Heating Device: HP #2, #5 Temperature (C): 95-200
Time In: 01/26/2016 17:10:36 Time Out: NA
Location: S18-B10

Sample Identification	Client Identification	Weight (g)	Final Volume (mL)
PB16A26KE3	NA	0.50000	50.00
LCS16A26KE3 *	NA	0.50000	50.00
LCS16A26KE4 **	NA	0.50000	50.00
LCS16A26KE5 ***	NA	0.50000	50.00
LCS16A26KE6 ****	NA	0.50000	50.00
LCS16A26KE7 *****	NA	0.10080	50.00
LCS16A26KE8 ******	NA	0.10790	50.00
588049tf	1D7-84-85	1.01030	100.00
588556tf	A2-S1	1.00150	100.00
588556tfD	A2-S1	1.02970	100.00
588556tfMS3 *******	A2-S1	1.01660	100.00
588556tfMS4 **	A2-S1	1.06690	100.00
588556tfMS5 ***	A2-S1	1.01240	100.00
588556tfMS6 ****	A2-S1	1.01800	100.00
590212tf	A1-AC-1	1.06220	100.00
590213tf	A1-AC-3	1.06710	100.00
590214tf	A2-AC-21	1.06540	100.00
591000tf	WL-234CT	1.01090	100.00

Prepared by: EDRISI, KHALED Date: 01/26/2016

Reviewed by: SEILER, NICHOLLE Date: 02/09/2016

Disposal Int/Date/Loc: _____

Program version(8/11/2011)

010261

Digestion Log

Southwest Research Institute
San Antonio, Texas 78228

Batch: 20160126-P004 (Ver. 2)
Status: APPROVED

Client(s): Tetra Tech
Task Order(s): 160115-1
SDG(s): 588049
Project(s): 21431.01.001
Method(s): Teflon Beaker (TAP: 01-0406-150/008)
Matrix(s): Soil, Solid
Intrument(s): ICP, ICP-MS
Reagent(s): HNO3 62999, HClO4 54738, HCl 65771, HF 63016
Balance(s): Balance#88
Pipette(s): 1000-3, 200-1
Heating Device: HP #2, #5 Temperature (C): 95-200
Time In: 01/26/2016 17:10:36 Time Out: NA
Location: S18-B10

☢ Rad Samples Present

Sample Identification	Client Identification	Weight (g)	Final Volume (mL)

* spiked 0.2 mL of Instrument Calibration Standard 1-58932 (ChemInv# 12-56YPY, Source: Spex Certiprep, Exp: 06/30/2016) and 0.1 mL of Phosphorus-60421 (ChemInv# J2-P02062, Source: Inorganic Ventures, Exp: 04/23/2018) and 1.0 mL of Spike Sample Standard I-60136 (ChemInv# 12-62YPX, Source: Spex Certiprep, Exp: 07/30/2016) and 0.1 mL of Sulfur-61569 (ChemInv# J2-S02028, Source: Inorganic Ventures, Exp: 09/22/2016)

** spiked 0.125 mL of CCS-1-55933 (ChemInv# G2-MEB468086, Source: Inorganic Ventures, Exp: 02/26/2016) and 0.125 mL of CCS-2-55934 (ChemInv# G2-MEB500143, Source: Inorganic Ventures, Exp: 02/26/2016) and 0.125 mL of CCS-4-55936 (ChemInv# H2-MEB550029, Source: Inorganic Ventures, Exp: 02/26/2016) and 0.125 mL of CCS-5-55937 (ChemInv# H2-MEB556118, Source: Inorganic Ventures, Exp: 02/26/2016) and 0.125 mL of CCS-6-55938 (ChemInv# H2-MEB526142, Source: Inorganic Ventures, Exp: 02/26/2016) and 0.125 mL of Tellurium-55935 (ChemInv# H2-TE01117R, Source: Inorganic Ventures, Exp: 02/26/2016)

*** spiked 0.1 mL of Nat.U. 106RadSol3 47552 (ChemInv# 1705-8, Source: Eckert&Ziegler Isoto, Exp: 04/07/2016)

**** spiked 0.1 mL of Uranium-236 098RadSol3-47222 (ChemInv# 47222, Source: UNDEFINED, Exp: 07/13/2015)

***** spiked 0.1008 g of SRM 278 - 36005 (ChemInv# Obisdian 278, Source: NIST SRM-278, Exp: 04/11/2022)

****** spiked 0.1079 g of SRM 688 - 34847 (ChemInv# 688, Source: NIST SRM-688, Exp: 12/04/2020)

******* spiked 0.2 mL of Instrument Calibration Standard 1-58932 (ChemInv# 12-56YPY, Source: Spex Certiprep, Exp: 06/30/2016) and 0.1 mL of Phosphorus-60421 (ChemInv# J2-P02062, Source: Inorganic Ventures, Exp: 04/23/2018) and 0.5 mL of Spike Sample Standard I-60136 (ChemInv# 12-62YPX, Source: Spex Certiprep, Exp: 07/30/2016) and 0.1 mL of Sulfur-61569 (ChemInv# J2-S02028, Source: Inorganic Ventures, Exp: 09/22/2016)

Comments:
bk 15-0406-046 pg 77

Add 10mL each hno3, hclo4, and hf, heat to dryness, add 2.5mL of each, heat to dryness, add 5mL di water, 2.5mL hno3 and 2.5mL hcl, heat and transferred to a ct, centrifuged at 2300rpm for 40min, transferred solutions into another ct.
transferred residue back to the Teflon beaker, add 5ml of each hno3 and hclo4 and 10mL hf, heat to dryness, and add 5mL of each hno3 hclo4 and hf heat to dryness, add 5mL di water, 2.5mL hno3 and 2.5mL hcl, heat and transferred to a ct, centrifuged for 30 min at 2300rpm, saved residue
Combined all fractions, fv 100mL.



Prepared by: EDRISI, KHALED Date: 01/26/2016

Reviewed by: SEILER, NICHOLLE Date: 02/09/2016

Disposal Int/Date/Loc: _____

Program version(8/11/2011)

Digestion Log

010262

Southwest Research Institute
San Antonio, Texas 78228

Batch: 20160127-P003 (Ver. 1)
Status: APPROVED

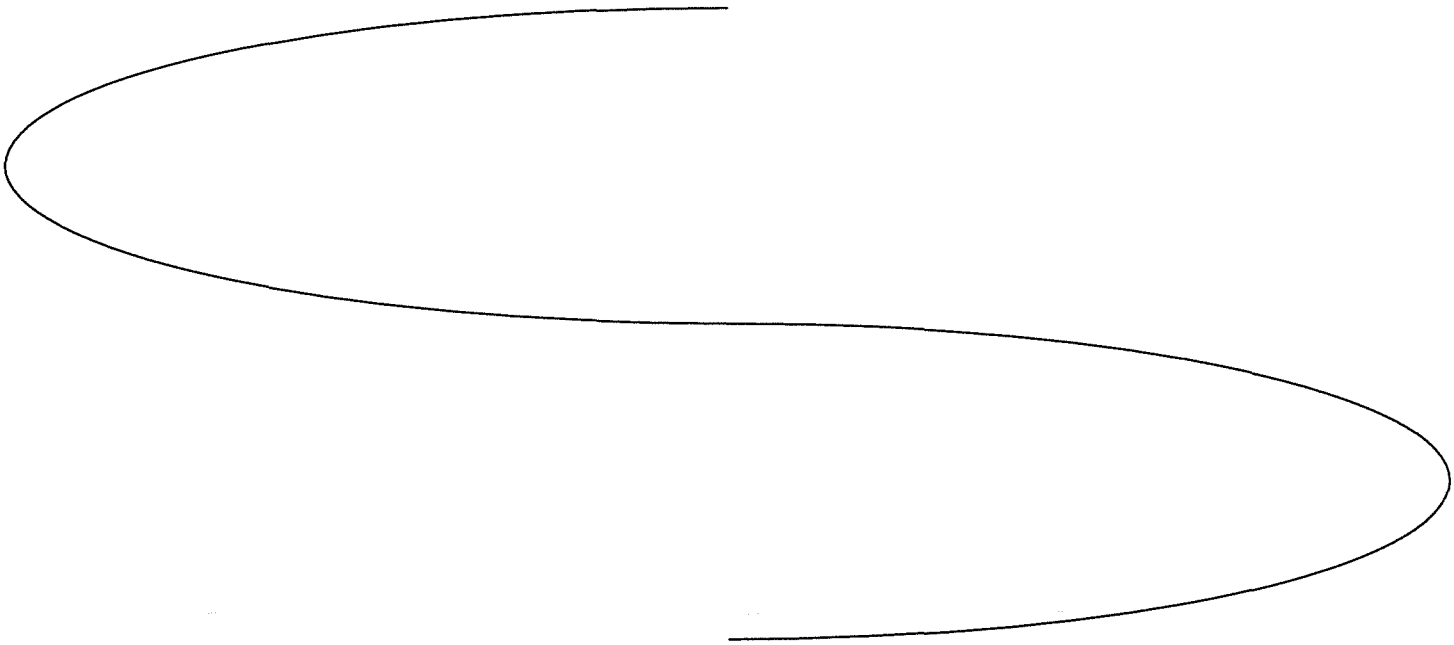
Client(s): Tetra Tech
Task Order(s): 160115-1
SDG(s): 588049
Project(s): 21431.01.001
Method(s): Whole Rock (TAP: TAP01-0406-150)
Matrix(s): Soil, Solid
Intrument(s): ICP
Reagent(s): HNO3 62999, HCl 65771, HF 63016
Balance(s): Balance#88
Heating Device: HP #6 Temperature (C): 95
Time In: 01/27/2016 11:33:40 Time Out: NA
Location: S18-B10

☢ Rad Samples Present

Sample Identification	Client Identification	Weight (g)	Final Volume (mL)
PB16A27KE1	NA	0.10000	100.00
LCS16A27KE1 *	NA	0.10030	100.00
LCS16A27KE2 **	NA	0.10070	100.00
588049rk	1D7-84-85	0.10770	100.00
588556rk	A2-S1	0.12540	100.00
588556rkD	A2-S1	0.11240	100.00
590212rk	A1-AC-1	0.12860	100.00
590213rk	A1-AC-3	0.12400	100.00
590214rk	A2-AC-21	0.10100	100.00
591000rk	WL-234CT	0.10470	100.00

* spiked 0.1003 g of SRM 278 - 36005 (ChemInv# Obisdian 278, Source: NIST SRM-278, Exp: 04/11/2022)
** spiked 0.1007 g of SRM 688 - 34847 (ChemInv# 688, Source: NIST SRM-688, Exp: 12/04/2020)

Comments:
bk 15-0406-046 pg 79



Prepared by: EDRISI, KHALED Date: 01/27/2016

Reviewed by: SEILER, NICHOLLE Date: 02/03/2016

Disposal Int/Date/Loc: _____

Program version(8/11/2011)

Digestion Log

010263

Southwest Research Institute
San Antonio, Texas 78228

Batch: 20160127-P004 (Ver. 1)
Status: APPROVED

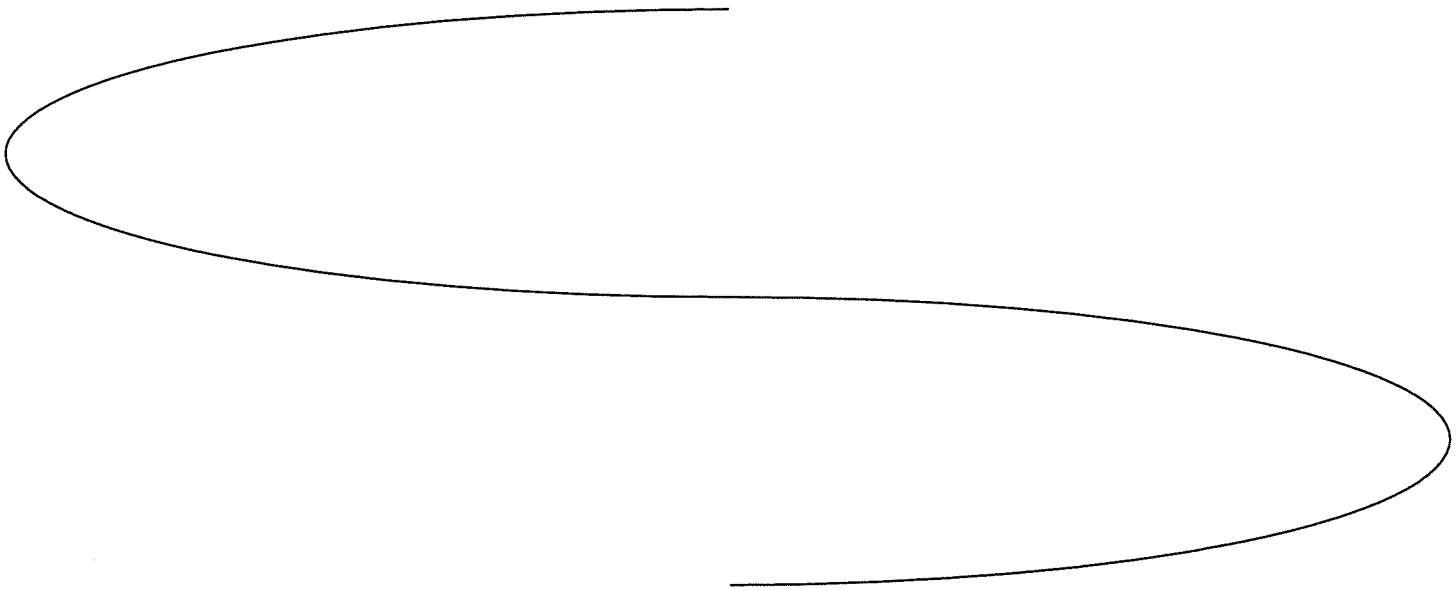
Client(s): Tetra Tech
Task Order(s): 160115-1
SDG(s): 588049
Project(s): 21431.01.001
Method(s): 80/20 Fusion (TAP: 01-0406-150)
Matrix(s): Soil, Solid
Intrument(s): ICP
Reagent(s): HCl 64771
Balance(s): Balance#88
Pipette(s): 200-1
Internal Standard --> Name: Scandium-57441 ChemInv#: G2-SC02113 Source: Inorganic Ventures Amt: 100 mL Exp: 04/21/2016
Heating Device: MF #1 Temperature (C): 1000
Time In: 01/27/2016 17:00:53 Time Out: NA
Location: S18-B10

☢ Rad Samples Present

Sample Identification	Client Identification	Weight (g)	Final Volume (mL)
PB16A27KE2	NA	0.10000	100.00
LCS16A27KE3 *	NA	0.10160	100.00
LCS16A27KE4 **	NA	0.10390	100.00
588049f	1D7-84-85	0.12300	100.00
588556f	A2-S1	0.10180	100.00
588556fD	A2-S1	0.10460	100.00
590212f	A1-AC-1	0.10250	100.00
590213f	A1-AC-3	0.10370	100.00
590214f	A2-AC-21	0.11110	100.00
591000f	WL-234CT	0.10210	100.00

* spiked 0.1016 g of SRM 278 - 36005 (ChemInv# Obisdian 278, Source: NIST SRM-278, Exp: 04/11/2022)
** spiked 0.1039 g of SRM 688 - 34847 (ChemInv# 688, Source: NIST SRM-688, Exp: 12/04/2020)

Comments:
bk 15-0406-046 pg 79



Prepared by: EDRISI, KHALED Date: 01/27/2016

Reviewed by: SEILER, NICHOLLE Date: 02/03/2016

Disposal Int/Date/Loc: _____

Program version(8/11/2011)

010264

Digestion Log

Southwest Research Institute
San Antonio, Texas 78228

Batch: 20160212-P009 (Ver. 1)
Status: APPROVED

Client(s): Tetra Tech
Task Order(s): 160115-1
SDG(s): 588049
Project(s): 21431.01.001
Method(s): %Ash (TAP:)
Matrix(s): Soil, Solid
Balance(s): Balance#88
Heating Device: MF #1 Temperature (C): 1000
Time In: 02/12/2016 18:05:18 Time Out: 02/15/2016 11:00:22

☢ Rad Samples Present

Sample Identification	Client Identification	Tare Wt (g)	WetSample +TareWt (g)	AshedSample+TareWt (g)	%Ash (%)	%LOI (%)	%LOI-TGA (%)
PB16B12KE3	NA	21.1929	21.1929	21.1932			NA
588049	1D7-84-85	20.8325	20.9405	20.9257	86.30	13.70	NA
588556	A2-S1	20.3649	20.4799	20.4612	83.74	16.26	NA
588556D	A2-S1	22.3371	22.4451	22.4265	82.78	17.22	NA
590212	A1-AC-1	20.3988	20.5122	20.4984	87.83	12.17	NA
590213	A1-AC-3	21.4005	21.5159	21.4972	83.80	16.20	NA
590214	A2-AC-21	20.8700	20.9889	20.9785	91.25	8.75	NA
591000	WL-234CT	20.9219	21.0319	21.0157	85.27	14.73	NA

Comments:
%solid book 11 (150-0406-026) pg 10

Prepared by: EDRISI, KHALED Date: 02/12/2016

Reviewed by: SEILER, NICHOLLE Date: 02/16/2016

Disposal Int/Date/Loc: _____

Program version(8/11/2011)

010265

Southwest Research Institute

QC STD. ID's		ICP CAL. STD.	
CCV	66611	ID's	
CRI	66656	STD0	66862
ICSA	66658	STD1	65782
ICSAB	66659	STD2	65783
		STD3	65784
UCL1	66865	STD4	65056
UCL2	65793	STD5	65785
NIH CRI	66657	STD6	65048

☐ 200.7 TAP No. 01-0406-028 Rev10/Jun15

☑ 6010B TAP No. 01-0406-130 Rev11/Jun15

☐ 6010C TAP No. 01-0406-130 Rev11/Jun15

☐ SWRI TAP No. 01-0406-148 Rev4/May15

☐ OTHER _____

QC Earliest Expiration Date 3/21/2016

Internal Standard (Sc) @10ppm Added in **Prep lab: YES (NO)**
Internal Standard (Sc) @10ppm Added in **ICP lab**: Inorg#601567 Exp: 9/22/16

IDL run date: **06/02/15**

IEC run date: 07/15/15

PROJ. NO.	PROJECT	TO#	DATE	MATRIX	LOGBOOK PG
21431.01.001	TETRA TECH	160115-1	2/5/16	Solid, T.B.	20160126-P004
✓	✓	✓	✓	Solid, W.R.	20160127-P003

INSTRUMENT: TRACE1

FILENAME: A160205

2/8/16
ANALYST/DATE

NN JR 3/11/16

Analytical Batch # ~~20160208-A008~~ 20160302-A001

File converted to wsl? ☐

2/8/16

010266

#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
1	blk	Y16FEB	DAILY1	02/05/16	17:20		X	IR
2	clp_std4	Y16FEB	DAILY1	02/05/16	17:25		X	IR
3	clp_std1	Y16FEB	DAILY1	02/05/16	17:29		X	IR
4	clp_std3	Y16FEB	DAILY1	02/05/16	17:33		X	IR
5	clp_std5	Y16FEB	DAILY1	02/05/16	17:37		X	IR
6	clp_std2	Y16FEB	DAILY1	02/05/16	17:41		X	IR
7	clp_std6	Y16FEB	DAILY1	02/05/16	17:46		X	IR
8	ICV	Y16FEB	DAILY1	02/05/16	17:51		S	CONC
9	ICB	Y16FEB	DAILY1	02/05/16	17:56		S	CONC
10	CRI	Y16FEB	DAILY1	02/05/16	18:01		S	CONC
11	CRI-N	Y16FEB	DAILY1	02/05/16	18:06		S	CONC
12	ICSA	Y16FEB	DAILY1	02/05/16	18:12		S	CONC
13	ICSAB	Y16FEB	DAILY1	02/05/16	18:17		S	CONC
14	UCL-1	Y16FEB	DAILY1	02/05/16	18:22		S	CONC
15	UCL-2	Y16FEB	DAILY1	02/05/16	18:27		S	CONC
16	ZZZZ	Y16FEB	DAILY1	02/05/16	18:33		S	CONC
17	CCV	Y16FEB	DAILY1	02/05/16	18:38		S	CONC
18	CCB	Y16FEB	DAILY1	02/05/16	18:43		S	CONC
19	PB16A26KE3	Y16FEB	DAILY1	02/05/16	18:48		S	CONC
20	LCS16A26KE3	Y16FEB	DAILY1	02/05/16	18:54		S	CONC
21	LCS16A26KE4	Y16FEB	DAILY1	02/05/16	18:59		S	CONC
22	LCS16A26KE7	Y16FEB	DAILY1	02/05/16	19:04		S	CONC
23	LCS16A26KE8	Y16FEB	DAILY1	02/05/16	19:09		S	CONC
24	588049TF DF10	Y16FEB	DAILY1	02/05/16	19:15		S	CONC
25	588556TF DF10	Y16FEB	DAILY1	02/05/16	19:20		S	CONC
26	588556TFD DF10	Y16FEB	DAILY1	02/05/16	19:25		S	CONC
27	588556TFL DF50	Y16FEB	DAILY1	02/05/16	19:31		S	CONC
28	588556TFMS3 DF10	Y16FEB	DAILY1	02/05/16	19:36		S	CONC
29	CCV	Y16FEB	DAILY1	02/05/16	19:41		S	CONC
30	CCB	Y16FEB	DAILY1	02/05/16	19:46		S	CONC
31	588556TFMS4 DF10	Y16FEB	DAILY1	02/05/16	19:52		S	CONC
*32	588556TFAS DF10	Y16FEB	DAILY1	02/05/16	19:57		S	CONC
33	590212TF DF10	Y16FEB	DAILY1	02/05/16	20:02		S	CONC
34	590213TF DF10	Y16FEB	DAILY1	02/05/16	20:07		S	CONC
35	590214TF DF10	Y16FEB	DAILY1	02/05/16	20:13		S	CONC
36	591000TF DF10	Y16FEB	DAILY1	02/05/16	20:18		S	CONC
37	CRI	Y16FEB	DAILY1	02/05/16	20:23		S	CONC
38	CRI-N	Y16FEB	DAILY1	02/05/16	20:28		S	CONC
39	ICSA	Y16FEB	DAILY1	02/05/16	20:34		S	CONC
40	ICSAB	Y16FEB	DAILY1	02/05/16	20:39		S	CONC
41	CCV	Y16FEB	DAILY1	02/05/16	20:44		S	CONC
42	CCB	Y16FEB	DAILY1	02/05/16	20:49		S	CONC
43	588049TF	Y16FEB	DAILY1	02/05/16	20:55		S	CONC
44	588556TF	Y16FEB	DAILY1	02/05/16	21:00		S	CONC
45	588556TFD	Y16FEB	DAILY1	02/05/16	21:05		S	CONC
46	588556TFL DF5	Y16FEB	DAILY1	02/05/16	21:10		S	CONC
47	588556TFMS3	Y16FEB	DAILY1	02/05/16	21:16		S	CONC
48	588556TFMS4	Y16FEB	DAILY1	02/05/16	21:21		S	CONC
*49	588556TFAS	Y16FEB	DAILY1	02/05/16	21:26		S	CONC
50	590212TF	Y16FEB	DAILY1	02/05/16	21:32		S	CONC
51	590213TF	Y16FEB	DAILY1	02/05/16	21:37		S	CONC
52	590214TF	Y16FEB	DAILY1	02/05/16	21:42		S	CONC
53	CCV	Y16FEB	DAILY1	02/05/16	21:47		S	CONC

#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
54	CCB	Y16FEB	DAILY1	02/05/16	21:53		S	CONC
55	591000TF	Y16FEB	DAILY1	02/05/16	21:58		S	CONC
56	CRI	Y16FEB	DAILY1	02/05/16	22:03		S	CONC
57	CRI-N	Y16FEB	DAILY1	02/05/16	22:09		S	CONC
58	ICSA	Y16FEB	DAILY1	02/05/16	22:14		S	CONC
59	ICSAB	Y16FEB	DAILY1	02/05/16	22:19		S	CONC
60	CCV	Y16FEB	DAILY1	02/05/16	22:24		S	CONC
61	CCB	Y16FEB	DAILY1	02/05/16	22:30		S	CONC
62	PB16A27KE1 DF100	Y16FEB	DAILY1	02/05/16	22:35		S	CONC
63	LCS16A27KE1 DF100	Y16FEB	DAILY1	02/05/16	22:40		S	CONC
64	LCS16A27KE2 DF100	Y16FEB	DAILY1	02/05/16	22:45		S	CONC
65	588049RK DF100	Y16FEB	DAILY1	02/05/16	22:51		S	CONC
66	588556RK DF100	Y16FEB	DAILY1	02/05/16	22:56		S	CONC
67	588556RKD DF100	Y16FEB	DAILY1	02/05/16	23:01		S	CONC
68	588556RKL DF500	Y16FEB	DAILY1	02/05/16	23:07		S	CONC
*69	588556RKAS DF100	Y16FEB	DAILY1	02/05/16	23:12		S	CONC
70	590212RK DF100	Y16FEB	DAILY1	02/05/16	23:17		S	CONC
71	590213RK DF100	Y16FEB	DAILY1	02/05/16	23:22		S	CONC
72	CCV	Y16FEB	DAILY1	02/05/16	23:28		S	CONC
73	CCB	Y16FEB	DAILY1	02/05/16	23:33		S	CONC
74	590214RK DF100	Y16FEB	DAILY1	02/05/16	23:38		S	CONC
75	591000RK DF100	Y16FEB	DAILY1	02/05/16	23:44		S	CONC
76	CRI	Y16FEB	DAILY1	02/05/16	23:49		S	CONC
77	CRI-N	Y16FEB	DAILY1	02/05/16	23:54		S	CONC
78	ICSA	Y16FEB	DAILY1	02/05/16	23:59		S	CONC
79	ICSAB	Y16FEB	DAILY1	02/06/16	00:05		S	CONC
80	CCV	Y16FEB	DAILY1	02/06/16	00:10		S	CONC
81	CCB	Y16FEB	DAILY1	02/06/16	00:15		S	CONC
82	PB16A27KE1 DF10	Y16FEB	DAILY1	02/06/16	00:20		S	CONC
83	LCS16A27KE1 DF10	Y16FEB	DAILY1	02/06/16	00:26		S	CONC
84	LCS16A27KE2 DF10	Y16FEB	DAILY1	02/06/16	00:31		S	CONC
85	588049RK DF10	Y16FEB	DAILY1	02/06/16	00:36		S	CONC
86	588556RK DF10	Y16FEB	DAILY1	02/06/16	00:42		S	CONC
87	588556RKD DF10	Y16FEB	DAILY1	02/06/16	00:47		S	CONC
88	588556RKL DF50	Y16FEB	DAILY1	02/06/16	00:52		S	CONC
**89	588556RKAS DF10	Y16FEB	DAILY1	02/06/16	00:57		S	CONC
90	590212RK DF10	Y16FEB	DAILY1	02/06/16	01:03		S	CONC
91	590213RK DF10	Y16FEB	DAILY1	02/06/16	01:08		S	CONC
92	CCV	Y16FEB	DAILY1	02/06/16	01:13		S	CONC
93	CCB	Y16FEB	DAILY1	02/06/16	01:18		S	CONC
94	590214RK DF10	Y16FEB	DAILY1	02/06/16	01:24		S	CONC
95	591000RK DF10	Y16FEB	DAILY1	02/06/16	01:29		S	CONC
96	CRI	Y16FEB	DAILY1	02/06/16	01:34		S	CONC
97	CRI-N	Y16FEB	DAILY1	02/06/16	01:39		S	CONC
98	ICSA	Y16FEB	DAILY1	02/06/16	01:45		S	CONC
99	ICSAB	Y16FEB	DAILY1	02/06/16	01:50		S	CONC
100	CCV	Y16FEB	DAILY1	02/06/16	01:55		S	CONC
101	CCB	Y16FEB	DAILY1	02/06/16	02:01		S	CONC

** & * Spiked 50 ml Spike I (#60136)
20 ml ICAL I (#58932)

** Spiked 20 ml BORON (#64938)
SILICON (#60841)

2/9/16

Method: DAILY1 Standard: blk
Run Time: 02/05/16 17:20:03

2/8/16

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Avge	.0001	.0005	.0000	.0010	-.0001	.0000	.0000
SDev	.0001	.0001	.0000	.0001	.0000	.0000	.0000
%RSD	96.53	9.957	157.5	12.35	49.63	9.480	94.53
#1	.0001	.0005	.0000	.0011	-.0001	.0000	.0001
#2	.0000	.0004	-.0000	.0009	-.0001	.0000	.0000

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Avge	.0000	-.0000	-.0000	-.0001	.0002	-.0001	.0024
SDev	.0000	.0001	.0001	.0001	.0001	.0001	.0010
%RSD	82.80	284.2	482.9	132.8	30.70	116.8	42.53
#1	.0000	.0000	.0000	-.0001	.0002	-.0002	.0032
#2	.0000	-.0001	-.0001	-.0000	.0001	-.0000	.0017

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Avge	.0007	.0001	.0000	-.0000	-.0001	-.0873	.0001
SDev	.0001	.0000	.0000	.0000	.0000	.0016	.0000
%RSD	22.61	30.49	328.0	197.6	40.64	1.889	38.24
#1	.0008	.0001	.0000	-.0000	-.0001	-.0861	.0001
#2	.0006	.0001	-.0000	.0000	-.0000	-.0885	.0001

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Avge	-.0003	.0005	.0016	-.0004	.0001	.0001	.0000
SDev	.0001	.0000	.0012	.0007	.0001	.0000	.0001
%RSD	19.56	6.366	78.14	181.8	125.9	10.67	180.9
#1	-.0004	.0005	.0024	-.0009	.0002	.0001	.0001
#2	-.0003	.0005	.0007	.0001	.0000	.0001	-.0000

Elem	Sc3613	1960/1	1960/2	Si2881	Sn1899	Sr4215	Th2837
Avge	80.06	.0001	-.0002	.0036	.0000	.0000	-.0000
SDev	.37	.0004	.0002	.0003	.0001	.0000	.0000
%RSD	.4585	424.8	92.81	8.117	301.4	134.2	159.0
#1	79.81	.0003	-.0003	.0038	.0001	.0000	-.0001
#2	80.32	-.0002	-.0001	.0034	-.0000	.0000	.0000

Elem	Ti3372	Tl1908	U_3859	V_2924	W_2079	Y_3710	Zn2062
Avge	-.0015	-.0000	.0077	-.0000	.0003	-.0001	.0000
SDev	.0002	.0000	.0002	.0000	.0002	.0001	.0000
%RSD	12.03	68.72	2.152	89.07	76.53	94.12	169.5
#1	-.0014	-.0000	.0078	-.0000	.0004	-.0001	.0000
#2	-.0017	-.0000	.0076	-.0000	.0001	-.0000	-.0000

Elem	Zr3496
Avge	-.0002
SDev	.0004
%RSD	177.8
#1	-.0005
#2	.0001

4/19/16

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	800587	10000	--	--	--	--	--
SDev	3641.600	.0000000	--	--	--	--	--
%RSD	.4548662	.0000000	--	--	--	--	--
#1	798012	10000	--	--	--	--	--
#2	803162	10000	--	--	--	--	--

Method: DAILY1 Standard: clp_std4
Run Time: 02/05/16 17:25:18

Elem	Ag3280	2203/1	2203/2	Sb2068	1960/1	1960/2	Tl1908
Avge	.0451	.5195	.5258	.0536	.1093	.1600	.0137
SDev	.0004	.0019	.0021	.0005	.0005	.0019	.0002
%RSD	.8754	.3592	.4022	.8921	.4853	1.160	1.597
#1	.0453	.5209	.5243	.0533	.1089	.1587	.0135
#2	.0448	.5182	.5273	.0540	.1097	.1613	.0139

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	825694	10000	--	--	--	--	--
SDev	1826.457	.0000000	--	--	--	--	--
%RSD	.2212028	.0000000	--	--	--	--	--
#1	826985	10000	--	--	--	--	--
#2	824402	10000	--	--	--	--	--

Method: DAILY1 Standard: clp_std1
Run Time: 02/05/16 17:29:28

Elem	Al3082	Ca3179	Fe2714	K_7664	Li6707	Mg2790	Na3302
Avge	.1021	.2283	.1349	1.636	4.748	.0894	.0117
SDev	.0003	.0001	.0002	.014	.020	.0002	.0001
%RSD	.2582	.0447	.1643	.8448	.4281	.1966	1.236
#1	.1019	.2283	.1347	1.626	4.733	.0893	.0116
#2	.1023	.2282	.1350	1.646	4.762	.0896	.0118

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	779452	10000	--	--	--	--	--
SDev	1160.362	.0000000	--	--	--	--	--
%RSD	.1488691	.0000000	--	--	--	--	--
#1	780272	10000	--	--	--	--	--
#2	778631	10000	--	--	--	--	--

Method: DAILY1 Standard: clp_std3
Run Time: 02/05/16 17:33:38

Elem	As1890	Cd2265	Co2286	Mn2576	V_2924	Zn2062
Avge	.0606	1.575	.2861	.4532	.0876	.1033
SDev	.0002	.005	.0003	.0014	.0001	.0008
%RSD	.2754	.3376	.0857	.3031	.0587	.8068
#1	.0607	1.579	.2859	.4542	.0876	.1027
#2	.0604	1.571	.2863	.4522	.0875	.1039

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	817371	10000	--	--	--	--	--
SDev	1667.358	.0000000	--	--	--	--	--
%RSD	.2039903	.0000000	--	--	--	--	--
#1	816192	10000	--	--	--	--	--
#2	818550	10000	--	--	--	--	--

Standardization Rpt. 02/05/16 05:41:18 PM page 1

Method: DAILY1 Standard: clp_std5
Run Time: 02/05/16 17:37:48

Elem	B_2496	Bi2230	Mo2020	P_1782	Si2881	Sn1899	Sr4215
Avge	.3281	.0343	.0886	.0480	.1335	.1319	1.493
SDev	.0030	.0000	.0003	.0006	.0015	.0006	.001
%RSD	.9096	.0592	.2938	1.201	1.125	.4601	.0343
#1	.3260	.0343	.0888	.0484	.1325	.1315	1.493
#2	.3302	.0343	.0884	.0476	.1346	.1323	1.492

Elem	Ti3372
Avge	1.089
SDev	.001
%RSD	.0852
#1	1.088
#2	1.090

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	818293	10000	--	--	--	--	--
SDev	5818.075	.0000000	--	--	--	--	--
%RSD	.7110014	.0000000	--	--	--	--	--
#1	822407	10000	--	--	--	--	--
#2	814179	10000	--	--	--	--	--

Method: DAILY1 Standard: clp_std2
Run Time: 02/05/16 17:41:36

Elem	Ba4934	Be3130	Cr2677	Cu3247	Ni2316
Avge	.6264	.0773	.3871	.2507	.9308
SDev	.0029	.0089	.0007	.0007	.0095
%RSD	.4583	11.52	.1861	.2717	1.023
#1	.6284	.0836	.3876	.2512	.9375
#2	.6244	.0710	.3866	.2502	.9240

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	808370	10000	--	--	--	--	--
SDev	3804.234	.0000000	--	--	--	--	--
%RSD	.4706056	.0000000	--	--	--	--	--
#1	805680	10000	--	--	--	--	--
#2	811060	10000	--	--	--	--	--

Method: DAILY1 Standard: clp_std6
Run Time: 02/05/16 17:46:08

Elem	La4086	Na5889	Pd3404	S_1820	Th2837	U_3859	W_2079
Avge	.3807	.1555	.1297	.0255	.0554	.0306	.0859
SDev	.0015	.0026	.0000	.0000	.0004	.0001	.0004
%RSD	.4068	1.690	.0136	.0714	.7944	.2763	.4836
#1	.3818	.1537	.1297	.0255	.0557	.0305	.0862
#2	.3796	.1574	.1297	.0255	.0551	.0306	.0856

Elem	Y_3710	Zr3496
Avge	1.065	1.213
SDev	.003	.002
%RSD	.2804	.1673
#1	1.067	1.214
#2	1.063	1.211

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	842586	10000	--	--	--	--	--
SDev	823.7794	.0000000	--	--	--	--	--
%RSD	.0977679	.0000000	--	--	--	--	--
#1	843169	10000	--	--	--	--	--
#2	842004	10000	--	--	--	--	--

Standardization Report 02/05/16 05:50:45 PM

Method: DAILY1 Slope = Conc(SIR)/IR

Element	Wavelen	High std	Low std	Slope	Y-intercept	Date Standardized
Ag3280	328.068	clp_std4	blk	44.4428	-.002615	02/05/16 05:46:08
Al3082	308.215	clp_std1	blk	491.958	-.228644	02/05/16 05:46:08
As1890	189.042	clp_std3	blk	165.178	-.003624	02/05/16 05:46:08
B_2496	249.678	clp_std5	blk	30.5727	-.030654	02/05/16 05:46:08
Ba4934	493.409	clp_std2	blk	15.9619	.001347	02/05/16 05:46:08
Be3130	313.042	clp_std2	blk	12.9431	-.000380	02/05/16 05:46:08
Bi2230	223.061	clp_std5	blk	144.673	-.006520	02/05/16 05:46:08
Ca3179	317.933	clp_std1	blk	219.068	-.003290	02/05/16 05:46:08
Cd2265	226.502	clp_std3	blk	6.34762	.000189	02/05/16 05:46:08
Co2286	228.616	clp_std3	blk	34.9512	.000453	02/05/16 05:46:08
Cr2677	267.716	clp_std2	blk	25.8269	.001586	02/05/16 05:46:08
Cu3247	324.753	clp_std2	blk	39.9117	-.006411	02/05/16 05:46:08
Fe2714	271.441	clp_std1	blk	370.319	.042437	02/05/16 05:46:08
K_7664	766.491	clp_std1	blk	30.6077	-.074279	02/05/16 05:46:08
La4086	408.672	clp_std6	blk	25.3717	-.016995	02/05/16 05:46:08
Li6707	670.784	clp_std1	blk	2.10634	-.000211	02/05/16 05:46:08
Mg2790	279.078	clp_std1	blk	279.426	-.003692	02/05/16 05:46:08
Mn2576	257.610	clp_std3	blk	22.0641	.000208	02/05/16 05:46:08
Mo2020	202.030	clp_std5	blk	112.806	.007686	02/05/16 05:46:08
Na5889	588.995	clp_std6	blk	4.12212	.359894	02/05/16 05:46:08
Na3302	330.232	clp_std1	blk	4319.59	-.464420	02/05/16 05:46:08
Ni2316	231.604	clp_std2	blk	10.7399	.003724	02/05/16 05:46:08
P_1782	178.287	clp_std5	blk	210.463	-.103562	02/05/16 05:46:08
2203/1	220.351	clp_std4	blk	19.3058	-.030245	02/05/16 05:46:08
2203/2	220.352	clp_std4	blk	19.0050	.007783	02/05/16 05:46:08
Pd3404	340.458	clp_std6	blk	79.3002	-.007202	02/05/16 05:46:08
S_1820	182.040	clp_std6	blk	394.254	-.021909	02/05/16 05:46:08
Sb2068	206.838	clp_std4	blk	186.664	-.007492	02/05/16 05:46:08
Sc3613	361.384	blk	dark	1.25096	-.158435	02/05/16 05:46:08
1960/1	196.021	clp_std4	blk	91.5634	-.007738	02/05/16 05:46:08
1960/2	196.022	clp_std4	blk	62.4325	.010628	02/05/16 05:46:08
Si2881	288.158	clp_std5	blk	76.5380	-.274382	02/05/16 05:46:08
Pb220	220.353	NONE	NONE	.000000	.000000	*NOT STANDARDIZED
Se196	196.026	NONE	NONE	1.00000	.000000	*NOT STANDARDIZED
Sn1899	189.989	clp_std5	blk	75.8517	-.001669	02/05/16 05:46:08
Sr4215	421.552	clp_std5	blk	6.69947	-.000164	02/05/16 05:46:08
Th2837	283.730	clp_std6	blk	188.545	.005673	02/05/16 05:46:08
Ti3372	337.280	clp_std5	blk	9.17043	.014206	02/05/16 05:46:08
Tl1908	190.864	clp_std4	blk	728.553	.019535	02/05/16 05:46:08
U_3859	385.958	clp_std6	blk	438.703	-3.37899	02/05/16 05:46:08
V_2924	292.402	clp_std3	blk	114.184	.003073	02/05/16 05:46:08
W_2079	207.910	clp_std6	blk	58.3784	-.015048	02/05/16 05:46:08
Y_3710	371.030	clp_std6	blk	9.38434	.000664	02/05/16 05:46:08
Zn2062	206.200	clp_std3	blk	96.8097	-.000607	02/05/16 05:46:08
Zr3496	349.621	clp_std6	blk	8.75003	.001778	02/05/16 05:46:08

Method: DAILY1

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Ag3280	328.068	blk	.000000	-.000000	.000000
		clp_std4	2.00000	2.00000	.000000
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Al3082	308.215	blk	.000000	-.000000	.000000
		clp_std1	50.0000	50.0000	.000000
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
As1890	189.042	blk	.000000	.000000	-.000000
		clp_std3	10.0000	10.0000	.000000
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
B_2496	249.678	blk	.000000	.000000	-.000000
		clp_std5	10.0000	10.0000	.000000
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Ba4934	493.409	blk	.000000	.000000	-.000000
		clp_std2	10.0000	10.0000	.000000
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Be3130	313.042	blk	.000000	-.000000	.000000
		clp_std2	1.00000	1.00000	.000000
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Bi2230	223.061	blk	.000000	.000000	-.000000
		clp_std5	5.00000	4.96090	.039100
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Ca3179	317.933	blk	.000000	-.000000	.000000
		clp_std1	50.0000	50.0000	.000000
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Cd2265	226.502	blk	.000000	-.000000	.000000
		clp_std3	10.0000	9.99826	.001740
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Co2286	228.616	blk	.000000	-.000000	.000000
		clp_std3	10.0000	10.0003	-.000280
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Cr2677	267.716	blk	.000000	.000000	-.000000
		clp_std2	10.0000	10.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Cu3247	324.753	blk	.000000	-.000000	.000000
		clp_std2	10.0000	10.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Fe2714	271.441	blk	.000000	-.000000	.000000
		clp_std1	50.0000	49.9950	.005001

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
K_7664	766.491	blk	.000000	.000000	-.000000
		clp_std1	50.0000	50.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
La4086	408.672	blk	.000000	-.000000	.000000
		clp_std6	10.0000	9.64275	.357249

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Li6707	670.784	blk	.000000	.000000	-.000000
		clp_std1	10.0000	10.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Mg2790	279.078	blk	.000000	-.000000	.000000
		clp_std1	25.0000	24.9844	.015650

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Mn2576	257.610	blk	.000000	.000000	-.000000
		clp_std3	10.0000	9.99930	.000700

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Mo2020	202.030	blk	.000000	.000000	-.000000
		clp_std5	10.0000	10.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Na5889	588.995	blk	.000000	.000000	-.000000
		clp_std6	1.00000	1.00092	-.000925

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Na3302	330.232	blk	.000000	.000000	-.000000
		clp_std1	50.0000	50.0000	-.000004

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Ni2316	231.604	blk	.000000	.000000	-.000000
		clp_std2	10.0000	10.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
P_1782	178.287	blk	.000000	-.000000	.000000
		clp_std5	10.0000	10.0000	.000000
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
2203/1	220.351	blk	.000000	.000000	-.000000
		clp_std4	10.0000	10.0000	-.000032
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
2203/2	220.352	blk	.000000	-.000000	.000000
		clp_std4	10.0000	10.0000	.000000
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Pd3404	340.458	blk	.000000	-.000000	.000000
		clp_std6	10.0000	10.2760	-.276011
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
S_1820	182.040	blk	.000000	-.000000	.000000
		clp_std6	10.0000	10.0218	-.021770
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Sb2068	206.838	blk	.000000	.000000	-.000000
		clp_std4	10.0000	10.0000	.000000
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Sc3613	361.384	dark	.000000	.000000	-.000000
		blk	100.000	100.000	-.000008
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
1960/1	196.021	blk	.000000	-.000000	.000000
		clp_std4	10.0000	10.0000	.000000
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
1960/2	196.022	blk	.000000	-.000000	.000000
		clp_std4	10.0000	10.0008	-.000760
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Si2881	288.158	blk	.000000	.000000	-.000000
		clp_std5	10.0000	9.94585	.054150
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Pb220	220.353	NONE	.000000	.000000	.000000
		NONE	.000000	.000000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Se196	196.026	NONE	.000000	.000000	.000000
		NONE	.000000	.000000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Sn1899	189.989	blk	.000000	-.000000	.000000
		clp_std5	10.0000	10.0044	-.004410

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Sr4215	421.552	blk	.000000	.000000	-.000000
		clp_std5	10.0000	10.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Th2837	283.730	blk	.000000	-.000000	.000000
		clp_std6	10.0000	10.4519	-.451941

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Ti3372	337.280	blk	.000000	.000000	-.000000
		clp_std5	10.0000	10.0002	-.000201

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Tl1908	190.864	blk	.000000	.000000	-.000000
		clp_std4	10.0000	10.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
U_3859	385.958	blk	.000000	-.000000	.000000
		clp_std6	10.0000	10.0247	-.024691

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
V_2924	292.402	blk	.000000	-.000000	.000000
		clp_std3	10.0000	10.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
W_2079	207.910	blk	.000000	-.000000	.000000
		clp_std6	5.00000	4.99863	.001370

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Y_3710	371.030	blk	.000000	.000000	-.000000
		clp_std6	10.0000	9.99692	.003080

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Zn2062	206.200	blk	.000000	-.000000	.000000
		clp_std3	10.0000	10.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Zr3496	349.621	blk	.000000	.000000	-.000000
		clp_std6	10.0000	10.6130	-.612969

Method: DAILY1 Sample Name: ICV Operator:
Run Time: 02/05/16 17:51:04
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.028	10.25	5.266	5.249	10.11	1.095	5.049
SDev	.006	.06	.017	.049	.07	.058	.020
%RSD	.5971	.5550	.3178	.9277	.7090	5.327	.3905
#1	1.023	10.21	5.254	5.214	10.06	H1.136	5.035
#2	1.032	10.29	5.278	5.283	10.16	1.054	5.063
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.100	11.00	5.500	5.500	11.00	1.100	5.500
Low	.9000	9.000	4.500	4.500	9.000	.9000	4.500

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.55	1.070	5.209	2.023	2.009	10.17	18.93
SDev	.01	.006	.015	.006	.001	.05	.21
%RSD	.0706	.5253	.2862	.3118	.0294	.5083	1.132
#1	20.54	1.066	5.199	2.019	2.008	10.14	18.78
#2	20.56	1.074	5.220	2.027	2.009	10.21	19.08
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.00	1.100	5.500	2.200	2.200	11.00	22.00
Low	18.00	.9000	4.500	1.800	1.800	9.000	18.00

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.991	5.446	20.53	1.048	4.988	H38.38	29.50
SDev	.004	.051	.03	.002	.037	.42	.39
%RSD	.0876	.9425	.1539	.1908	.7363	1.107	1.328
#1	4.988	5.409	20.51	1.046	4.962	H38.08	29.22
#2	4.994	5.482	20.55	1.049	5.014	H38.68	29.78
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	5.500	5.500	22.00	1.100	5.500	33.00	33.00
Low	4.500	4.500	18.00	.9000	4.500	27.00	27.00

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.028	5.249	5.131	5.101	.9738	1.053	1.013
SDev	.079	.019	.059	.024	.0011	.007	.003
%RSD	1.562	.3645	1.158	.4705	.1146	.6409	.2993
#1	4.972	5.236	5.089	5.084	.9746	1.049	1.015
#2	5.083	5.263	5.173	5.118	.9730	1.058	1.011
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	5.500	5.500			1.100	1.100	1.100
Low	4.500	4.500			.9000	.9000	.9000

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	96.87	5.451	5.398	4.977	5.106	5.410	5.104
SDev	1.50	.056	.008	.051	.036	.024	.000
%RSD	1.545	1.021	.1512	1.031	.7005	.4430	.0092
#1	97.93	5.411	5.392	4.940	5.081	5.393	5.104
#2	95.81	5.490	5.403	5.013	5.131	5.427	5.103
Errors	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass
High				5.500	5.500	5.500	5.500
Low				4.500	4.500	4.500	4.500

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.091	1.043	4.958	5.366	5.023	5.194	1.091
SDev	.012	.001	.004	.033	.029	.010	.020
%RSD	.2313	.0613	.0847	.6194	.5702	.1852	1.798
#1	5.083	1.042	4.961	5.389	5.043	5.187	1.077
#2	5.100	1.043	4.955	5.342	5.003	5.201	H1.105
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.500	1.100	5.500	5.500	5.500	5.500	1.100
Low	4.500	.9000	4.500	4.500	4.500	4.500	.9000

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	5.055	1.077	5.065
SDev	.009	.000	.002
%RSD	.1691	.0224	.0310
#1	5.061	1.078	5.066
#2	5.049	1.077	5.064
Errors	LC Pass	LC Pass	LC Pass
High	5.500	1.100	5.500
Low	4.500	.9000	4.500

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	775520	10000	--	--	--	--	--
SDev	11916.16	.0000000	--	--	--	--	--
%RSD	1.536539	.0000000	--	--	--	--	--
#1	783946	10000	--	--	--	--	--
#2	767094	10000	--	--	--	--	--

Method: DAILY1 Sample Name: ICB Operator:
Run Time: 02/05/16 17:56:22
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0034	-.0188	L-.0090	.0058	.0005	.0000	L-.0220
SDev	.0001	.0005	.0023	.0015	.0004	.0000	.0041
%RSD	1.530	2.801	25.40	25.95	71.65	70.07	18.72
#1	-.0034	-.0192	L-.0074	.0069	.0008	.0000	L-.0249
#2	-.0035	-.0184	L-.0106	.0048	.0003	.0000	L-.0191
Errors	LC Pass	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Low
High	.0050	.0500	.0050	.0500	.0050	.0050	.0100
Low	-.0050	-.0500	-.0050	-.0500	-.0050	-.0050	-.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0001	-.0004	-.0008	.0016	-.0018	.0474	-.0293
SDev	.0000	.0000	.0004	.0015	.0002	.0174	.0006
%RSD	56.37	1.861	50.35	95.30	11.22	36.63	2.195
#1	.0001	-.0004	-.0011	.0026	-.0019	H.0597	-.0288
#2	.0000	-.0004	-.0005	.0005	-.0016	.0351	-.0297
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0500	.0050	.0050	.0050	.0050	.0500	.1000
Low	-.0500	-.0050	-.0050	-.0050	-.0050	-.0500	-.1000

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0027	.0003	-.0085	.0003	.0023	-.0139	L-.1434
SDev	.0011	.0001	.0009	.0002	.0034	.0019	.0125
%RSD	38.81	15.20	10.54	72.15	145.1	13.65	8.720
#1	-.0020	.0004	-.0078	.0005	.0047	-.0126	L-.1346
#2	-.0035	.0003	-.0091	.0002	-.0001	-.0153	L-.1523
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low
High	.0050	.0050	.0500	.0050	.0050	.0500	.0500
Low	-.0050	-.0050	-.0500	-.0050	-.0050	-.0500	-.0500

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0000	.0110	-.0150	.0093	L-.0068	-.0050	-.0077
SDev	.0004	.0037	.0096	.0042	.0038	.0168	.0054
%RSD	1703.	33.87	63.55	45.00	55.79	337.0	69.92
#1	-.0003	.0136	-.0218	.0123	L-.0094	.0069	-.0039
#2	.0003	.0083	-.0083	.0064	-.0041	-.0169	L-.0115
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Low	LC Pass	LC Pass
High	.0050	.0200			.0050	.0200	.0100
Low	-.0050	-.0200			-.0050	-.0200	-.0100

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	98.69	-.0264	.0182	-.0073	.0012	.0033	-.0002
SDev	.69	.0153	.0035	.0006	.0004	.0028	.0009
%RSD	.7039	57.83	19.01	7.700	31.46	83.35	481.1
#1	99.18	-.0372	.0206	-.0077	.0009	.0014	.0004
#2	98.20	-.0156	.0158	-.0069	.0015	H.0053	-.0008
Errors	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass
High				.0100	.0050	.0050	.0100
Low				-.0100	-.0050	-.0050	-.0100

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0002	.0066	-.0011	L-.0299	-.0400	.0022	-.0018
SDev	.0000	.0070	.0006	.0010	.0292	.0018	.0006
%RSD	11.84	106.9	57.31	3.264	72.93	82.74	35.10
#1	-.0002	H.0115	-.0007	L-.0292	-.0194	.0034	-.0014
#2	-.0002	.0016	-.0015	L-.0306	-.0606	.0009	-.0023
Errors	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass	LC Pass
High	.0050	.0100	.0050	.0100	.1000	.0050	.0100
Low	-.0050	-.0100	-.0050	-.0100	-.1000	-.0050	-.0100

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0005	-.0006	.0023
SDev	.0005	.0002	.0017
%RSD	100.3	27.67	72.82
#1	.0009	-.0005	.0035
#2	.0001	-.0007	.0011
Errors	LC Pass	LC Pass	LC Pass
High	.0050	.0050	.0050
Low	-.0050	-.0050	-.0050

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	790145	10000	--	--	--	--	--
SDev	5545.131	.0000000	--	--	--	--	--
%RSD	.7017866	.0000000	--	--	--	--	--
#1	794066	10000	--	--	--	--	--
#2	786224	10000	--	--	--	--	--

Method: DAILY1 Sample Name: CRI Operator:
Run Time: 02/05/16 18:01:37
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0072	.1126	L-.0001	H.0990	.0057	.0061	.0124
SDev	.0009	.0074	.0006	.0016	.0003	.0001	.0071
%RSD	13.21	6.601	429.1	1.633	4.450	1.328	57.40
#1	.0065	.1074	L.0003	H.0979	.0055	.0061	.0175
#2	.0079	.1179	L-.0006	H.1001	.0058	.0062	L.0074
Errors	LC Pass	LC Pass	LC Low	LC High	LC Pass	LC Pass	LC Pass
High	.0150	.1500	.0150	.0600	.0075	.0075	.0300
Low	.0050	.0500	.0050	.0200	.0025	.0025	.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1026	.0049	.0046	.0066	.0038	H.1548	.2816
SDev	.0008	.0001	.0001	.0002	.0001	.0006	.0281
%RSD	.8240	3.091	1.612	2.612	2.812	.3987	9.983
#1	.1020	.0048	.0046	.0065	.0037	H.1552	.2618
#2	.1032	.0050	.0045	.0067	.0038	H.1543	.3015
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	.1500	.0075	.0075	.0075	.0075	.1500	.7500
Low	.0500	.0025	.0025	.0025	.0025	.0500	.2500

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0089	.0105	.0451	.0055	.0073	.2836	.3298
SDev	.0003	.0001	.0035	.0001	.0014	.0019	.2491
%RSD	3.377	1.223	7.803	1.536	19.40	.6738	75.52
#1	.0087	.0104	.0426	.0054	.0063	.2822	.1537
#2	.0091	.0106	.0476	.0056	H.0083	.2849	H.5060
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0150	.0150	.1000	.0075	.0075	.5000	.5000
Low	.0050	.0050	.0250	.0025	.0025	.1250	.1250

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0049	.0570	-.0112	.0131	.0128	.0480	.0175
SDev	.0000	.0006	.0000	.0004	.0010	.0064	.0007
%RSD	.3087	1.089	.3441	3.242	8.194	13.30	3.805
#1	.0049	.0574	-.0112	.0134	.0120	.0435	.0170
#2	.0049	.0565	-.0111	.0128	.0135	.0526	.0179
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	.0075	.0750			.0300	.0750	.0300
Low	.0025	.0250			.0100	.0250	.0100

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	98.89	-.0114	.0293	H.6275	.0050	H.0157	.0114
SDev	.54	.0077	.0127	.0014	.0003	.0110	.0044
%RSD	.5506	67.30	43.36	.2273	5.388	70.14	38.52
#1	99.28	-.0169	.0203	H.6265	.0052	.0079	.0083
#2	98.51	-.0060	.0382	H.6285	.0048	H.0235	.0145
Errors	NOCHECK	NOCHECK	NOCHECK	LC High	LC Pass	LC High	LC Pass
High				.1500	.0075	.0150	.0150
Low				.0500	.0025	.0050	.0050

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0051	H.0305	.0040	L-.0034	.2132	.0073	.0298
SDev	.0001	.0042	.0005	.0109	.0209	.0002	.0018
%RSD	.9031	13.61	12.22	324.3	9.825	2.123	5.900
#1	.0051	H.0334	.0036	L-.0111	.1984	.0074	.0286
#2	.0052	.0276	.0043	L.0044	.2280	.0072	H.0310
Errors	LC Pass	LC High	LC Pass	LC Low	LC Pass	LC Pass	LC Pass
High	.0075	.0300	.0075	.0300	.3000	.0075	.0300
Low	.0025	.0100	.0025	.0100	.1000	.0025	.0100

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0058	.0050	H.0086
SDev	.0000	.0003	.0005
%RSD	.0864	5.657	5.632
#1	.0058	.0048	H.0082
#2	.0058	.0052	H.0089
Errors	LC Pass	LC Pass	LC High
High	.0075	.0075	.0075
Low	.0025	.0025	.0025

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	791738	10000	--	--	--	--	--
SDev	4351.535	.0000000	--	--	--	--	--
%RSD	.5496181	.0000000	--	--	--	--	--
#1	794815	10000	--	--	--	--	--
#2	788661	10000	--	--	--	--	--

Method: DAILY1 Sample Name: CRI-N Operator:
Run Time: 02/05/16 18:06:52
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0176	.2203	.0149	H.1628	.0106	.0122	L.0195
SDev	.0001	.0004	.0040	.0019	.0001	.0000	.0023
%RSD	.8285	.1808	27.03	1.139	.9908	.1083	11.71
#1	.0177	.2200	.0178	H.1615	.0105	.0122	L.0179
#2	.0175	.2205	L.0121	H.1641	.0107	.0122	L.0211
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Low
High	.0260	.2600	.0260	.1040	.0130	.0130	.0520
Low	.0140	.1400	.0140	.0560	.0070	.0070	.0280

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2045	.0101	.0101	.0115	.0096	.2439	L.5867
SDev	.0001	.0001	.0002	.0004	.0008	.0073	.0253
%RSD	.0564	.7558	1.830	3.243	8.148	2.988	4.315
#1	.2046	.0101	.0102	.0112	.0090	.2387	L.5688
#2	.2044	.0102	.0100	.0117	.0101	.2490	L.6046
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low
High	.2600	.0130	.0130	.0130	.0130	.2600	1.300
Low	.1400	.0070	.0070	.0070	.0070	.1400	.7000

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0188	.0215	.0969	.0107	.0121	.5597	.3804
SDev	.0003	.0001	.0020	.0001	.0010	.0048	.2283
%RSD	1.456	.6200	2.025	.6500	8.244	.8547	60.00
#1	.0186	.0214	.0983	.0106	.0114	.5563	L.2190
#2	.0189	.0216	.0955	.0107	.0128	.5631	.5418
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0260	.0260	.1300	.0130	.0130	.6500	.6500
Low	.0140	.0140	.0700	.0070	.0070	.3500	.3500

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0104	.1113	-.0027	.0152	.0376	.1160	.0385
SDev	.0005	.0013	.0040	.0013	.0006	.0042	.0042
%RSD	4.584	1.198	144.3	8.462	1.646	3.658	11.03
#1	.0108	.1104	.0001	.0143	.0381	.1130	.0355
#2	.0101	.1122	-.0055	.0162	.0372	.1190	.0415
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	.0130	.1300			.0520	.1300	.0520
Low	.0070	.0700			.0280	.0700	.0280

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	98.71	.0097	.0345	H.9254	.0092	H.0262	.0244
SDev	.26	.0054	.0031	.0041	.0005	.0039	.0019
%RSD	.2659	55.61	8.974	.4409	4.952	14.69	7.767
#1	98.53	.0135	.0367	H.9283	.0096	H.0289	.0231
#2	98.90	.0059	.0323	H.9225	.0089	.0235	.0258
Errors	NOCHECK	NOCHECK	NOCHECK	LC High	LC Pass	LC High	LC Pass
High				.2600	.0130	.0260	.0260
Low				.1400	.0070	.0140	.0140

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0105	.0470	.0090	.0300	.4081	.0121	.0491
SDev	.0001	.0000	.0004	.0183	.0229	.0004	.0020
%RSD	.9916	.0374	4.928	60.96	5.619	3.296	4.152
#1	.0104	.0470	.0086	.0429	.3919	.0118	.0476
#2	.0106	.0470	.0093	L.0171	.4243	.0124	.0505
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0130	.0520	.0130	.0520	.5200	.0130	.0520
Low	.0070	.0280	.0070	.0280	.2800	.0070	.0280

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0107	.0108	H.0132
SDev	.0001	.0005	.0005
%RSD	1.189	4.267	3.773
#1	.0106	.0111	.0129
#2	.0108	.0104	H.0136
Errors	LC Pass	LC Pass	LC High
High	.0130	.0130	.0130
Low	.0070	.0070	.0070

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	790282	10000	--	--	--	--	--
SDev	2018.083	.0000000	--	--	--	--	--
%RSD	.2553624	.0000000	--	--	--	--	--
#1	788855	10000	--	--	--	--	--
#2	791709	10000	--	--	--	--	--

Method: DAILY1 Sample Name: ICSA Operator:
Run Time: 02/05/16 18:12:07
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0053	497.6	-.0149	.1046	.0030	.0001	-.0284
SDev	.0007	3.6	.0125	.0006	.0002	.0001	.0029
%RSD	12.31	.7212	84.49	.5885	6.145	99.84	10.32
#1	-.0058	500.1	-.0237	.1050	.0028	.0000	-.0305
#2	-.0049	495.0	-.0060	.1041	.0031	.0001	-.0263
Errors	NOCHECK	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High		600.0					
Low		400.0					

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	461.6	-.0004	-.0029	.0008	.0007	201.4	-.0170
SDev	2.9	.0001	.0005	.0009	.0005	2.2	.0514
%RSD	.6301	16.05	15.72	117.2	77.62	1.094	302.2
#1	463.6	-.0005	-.0032	.0001	.0003	202.9	-.0534
#2	459.5	-.0004	-.0025	.0014	.0011	199.8	.0193
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	NOCHECK
High	600.0					240.0	
Low	400.0					160.0	

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0040	.0020	533.1	.0198	.0013	.0928	-.1102
SDev	.0003	.0001	5.6	.0001	.0016	.0118	.3470
%RSD	8.678	5.196	1.059	.2324	122.0	12.72	315.0
#1	-.0043	.0019	537.0	.0197	.0024	.0845	-.3555
#2	-.0038	.0021	529.1	.0198	.0002	.1012	.1352
Errors	NOCHECK	NOCHECK	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High			600.0				
Low			400.0				

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0046	.0052	-.0849	.0365	.0019	-.0235	-.0031
SDev	.0003	.0117	.0027	.0053	.0065	.0061	.0083
%RSD	7.457	225.3	3.197	14.48	342.2	25.74	265.7
#1	.0049	.0135	-.0829	.0328	.0065	-.0278	-.0090
#2	.0044	-.0031	-.0868	.0403	-.0027	-.0193	.0027
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	88.12	-.0453	.0102	.8189	-.0039	-.0083	.0031
SDev	.11	.0344	.0010	.0107	.0026	.0108	.0031
%RSD	.1290	76.00	9.639	1.304	66.57	130.2	102.5
#1	88.04	-.0210	.0095	.8265	-.0058	-.0007	.0053
#2	88.20	-.0697	.0109	.8114	-.0021	-.0160	.0008
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0073	-.0470	.0030	.4286	.0704	.0075	.0033
SDev	.0000	.0026	.0003	.0232	.0293	.0006	.0016
%RSD	.1158	5.633	10.16	5.407	41.59	8.170	49.62
#1	.0073	-.0451	.0028	.4122	.0910	.0070	.0044
#2	.0073	-.0488	.0032	.4450	.0497	.0079	.0021
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0037	-.0042	.0052
SDev	.0001	.0007	.0008
%RSD	3.638	16.05	15.55
#1	.0036	-.0047	.0046
#2	.0038	-.0037	.0057
Errors	NOCHECK	NOCHECK	NOCHECK
High			
Low			

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	705568	10000	--	--	--	--	--
SDev	889.5403	.0000000	--	--	--	--	--
%RSD	.1260744	.0000000	--	--	--	--	--
#1	704939	10000	--	--	--	--	--
#2	706197	10000	--	--	--	--	--

Method: DAILY1 Sample Name: ICSAB Operator:
Run Time: 02/05/16 18:17:21
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.124	493.7	1.090	1.151	.5453	H.6094	-.0259
SDev	.004	.5	.013	.001	.0008	.0234	.0117
%RSD	.3881	.1098	1.204	.0808	.1423	3.839	45.31
#1	1.121	494.1	1.099	1.150	.5459	H.6259	-.0342
#2	1.127	493.3	1.081	1.151	.5448	.5928	-.0176
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	NOCHECK
High	1.200	600.0	1.200	1.200	.6000	.6000	
Low	.8000	400.0	.8000	.8000	.4000	.4000	

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	452.4	1.044	.5106	.5052	.5392	198.6	-.0189
SDev	.0	.002	.0001	.0007	.0020	.4	.0387
%RSD	.0006	.2366	.0133	.1374	.3649	.2048	204.8
#1	452.4	1.046	.5106	.5057	.5406	198.9	-.0462
#2	452.4	1.042	.5105	.5047	.5378	198.3	.0085
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK
High	600.0	1.200	.6000	.6000	.6000	240.0	
Low	400.0	.8000	.4000	.4000	.4000	160.0	

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0037	H1.221	519.6	.5459	1.059	.0599	-.2784
SDev	.0003	.001	1.5	.0006	.002	.0090	.2714
%RSD	8.656	.0678	.2797	.1037	.1512	14.97	97.49
#1	-.0039	H1.221	520.6	.5463	1.058	.0535	-.4703
#2	-.0035	H1.220	518.6	.5455	1.060	.0662	-.0865
Errors	NOCHECK	LC High	LC Pass	LC Pass	LC Pass	NOCHECK	NOCHECK
High		1.200	600.0	.6000	1.200		
Low		.8000	400.0	.4000	.8000		

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9958	1.086	.9376	1.052	.0015	-.0045	1.114
SDev	.0011	.004	.0016	.008	.0029	.0037	.010
%RSD	.1073	.3493	.1720	.7153	189.7	81.72	.8702
#1	.9951	1.083	.9364	1.058	.0036	-.0019	1.107
#2	.9966	1.088	.9387	1.047	-.0005	-.0072	1.121
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass
High	1.200	1.200					1.200
Low	.8000	.8000					.8000

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	87.51	1.086	1.144	1.447	1.013	1.123	1.038
SDev	.30	.006	.024	.003	.004	.014	.003
%RSD	.3410	.5857	2.066	.2081	.4418	1.212	.2471
#1	87.30	1.082	1.160	1.449	1.016	1.133	1.040
#2	87.73	1.090	1.127	1.445	1.010	1.114	1.036
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					1.200	1.200	1.200
Low					.8000	.8000	.8000

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.075	-.0415	1.021	H1.494	1.050	.5322	.0159
SDev	.001	.0025	.003	.018	.024	.0007	.0059
%RSD	.0478	5.929	.2984	1.228	2.306	.1231	37.40
#1	1.076	-.0398	1.019	H1.507	1.033	.5327	.0201
#2	1.075	-.0433	1.023	H1.481	1.067	.5318	.0117
Errors	LC Pass	NOCHECK	LC Pass	LC High	NOCHECK	LC Pass	NOCHECK
High	1.200		1.200	1.200		.6000	
Low	.8000		.8000	.8000		.4000	

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0037	1.050	.9382
SDev	.0001	.003	.0031
%RSD	4.023	.2630	.3274
#1	.0038	1.052	.9360
#2	.0036	1.048	.9404
Errors	NOCHECK	LC Pass	NOCHECK
High		1.200	
Low		.8000	

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	700798	10000	--	--	--	--	--
SDev	2347.595	.0000000	--	--	--	--	--
%RSD	.3349887	.0000000	--	--	--	--	--
#1	699138	10000	--	--	--	--	--
#2	702458	10000	--	--	--	--	--

Method: DAILY1 Sample Name: UCL-1 Operator:
Run Time: 02/05/16 18:22:35
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0296	584.2	-.0288	.0344	.0021	-.0029	-.1071
SDev	.0053	1.2	.0026	.0007	.0001	.0001	.0152
%RSD	17.96	.2058	9.019	2.086	4.094	2.413	14.21
#1	-.0259	583.4	-.0306	.0339	.0020	-.0029	-.0964
#2	-.0334	585.1	-.0270	.0349	.0021	-.0030	-.1179

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	231.7	-.0000	-.0097	-.0040	-.0139	590.2	131.3
SDev	.5	.0000	.0001	.0000	.0003	5.2	.2
%RSD	.2287	307.8	1.200	.0922	1.938	.8799	.1688
#1	231.3	-.0000	-.0096	-.0040	-.0141	586.5	131.2
#2	232.1	.0000	-.0098	-.0040	-.0137	593.9	131.5

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1361	19.17	606.7	.0012	-.0042	S41.95	299.9
SDev	.0072	.03	3.1	.0000	.0013	.16	.9
%RSD	5.319	.1769	.5127	3.103	30.82	.3850	.2861
#1	.1310	19.14	604.5	.0012	-.0033	S41.83	299.3
#2	.1412	19.19	608.9	.0012	-.0051	S42.06	300.5

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0007	.0418	-.3655	.1589	-.1507	.1813	.0042
SDev	.0003	.0073	.0034	.0036	.0298	.0058	.0131
%RSD	34.02	17.43	.9237	2.258	19.76	3.215	312.3
#1	.0009	.0469	-.3632	.1564	-.1718	.1854	.0135
#2	.0006	.0366	-.3679	.1614	-.1297	.1772	-.0051

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	81.83	-.0125	-.0039	-.1904	-.0159	-.0067	.0249
SDev	.52	.0022	.0057	.0005	.0013	.0030	.0002
%RSD	.6369	17.52	144.5	.2575	7.958	45.06	.7036
#1	82.20	-.0109	-.0079	-.1900	-.0168	-.0089	.0247
#2	81.46	-.0140	.0001	-.1907	-.0150	-.0046	.0250

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0171	20.78	-.0266	1.291	-.0755	.0165	-.0057
SDev	.0001	.12	.0006	.031	.0390	.0003	.0063
%RSD	.2746	.5542	2.117	2.435	51.69	1.508	110.9
#1	.0171	20.70	-.0262	1.269	-.0479	.0167	-.0101
#2	.0172	20.86	-.0270	1.313	-.1031	.0164	-.0012

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0007	.0285	.0013
SDev	.0001	.0001	.0003
%RSD	10.92	.3262	20.43
#1	.0007	.0284	.0011
#2	.0008	.0285	.0015

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	655300	10000	--	--	--	--	--
SDev	4200.921	.0000000	--	--	--	--	--
%RSD	.6410689	.0000000	--	--	--	--	--
#1	658270	10000	--	--	--	--	--
#2	652329	10000	--	--	--	--	--

Method: DAILY1 Sample Name: UCL-2 Operator:
Run Time: 02/05/16 18:27:49
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.003	.0300	20.01	19.27	19.37	1.048	19.95
SDev	.001	.0473	.02	.11	.06	.047	.12
%RSD	.0645	157.9	.0772	.5663	.3241	4.487	.6001
#1	2.004	.0634	20.00	19.19	19.32	1.081	19.87
#2	2.002	-.0035	20.02	19.35	19.41	1.014	20.04

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.3497	10.08	20.32	19.82	20.29	.1311	.0172
SDev	.0006	.09	.11	.13	.07	.0763	.0191
%RSD	.1794	.8912	.5542	.6479	.3621	58.20	111.1
#1	-.3501	10.02	20.40	19.91	20.24	.0771	.0037
#2	-.3493	10.15	20.24	19.73	20.34	.1850	.0306

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	19.96	.0017	.0119	19.66	20.08	-.0311	.5757
SDev	.04	.0000	.0213	.10	.24	.0003	.3826
%RSD	.1910	2.145	179.3	.4867	1.187	.8172	66.46
#1	19.94	.0017	.0270	19.72	19.91	-.0309	.3051
#2	19.99	.0017	-.0032	19.59	20.25	-.0313	.8463

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	19.69	19.68	20.04	19.69	20.83	19.92	20.56
SDev	.01	.10	.10	.28	.03	.11	.06
%RSD	.0360	.5104	.5071	1.447	.1595	.5656	.3089
#1	19.70	19.75	19.97	19.49	20.81	20.00	20.52
#2	19.69	19.61	20.11	19.89	20.86	19.84	20.61

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	92.73	20.85	20.39	18.00	19.79	20.52	20.12
SDev	.08	.05	.17	.05	.22	.13	.11
%RSD	.0812	.2207	.8453	.2821	1.130	.6340	.5480
#1	92.78	20.81	20.27	17.96	19.63	20.43	20.19
#2	92.68	20.88	20.52	18.04	19.94	20.62	20.04

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	18.72	.0287	20.03	20.16	20.09	20.29	22.15
SDev	.02	.0144	.04	.11	.13	.02	.25
%RSD	.1288	50.15	.1858	.5674	.6560	.0894	1.114
#1	18.70	.0185	20.01	20.24	20.18	20.30	21.98
#2	18.74	.0389	20.06	20.08	19.99	20.28	22.32

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	19.73	20.21	20.44
SDev	.08	.16	.03
%RSD	.4105	.8074	.1323
#1	19.79	20.32	20.46
#2	19.67	20.09	20.42

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	742487	10000	--	--	--	--	--
SDev	541.6438	.0000000	--	--	--	--	--
%RSD	.0729499	.0000000	--	--	--	--	--
#1	742870	10000	--	--	--	--	--
#2	742104	10000	--	--	--	--	--

Analysis Report 02/05/16 06:38:04 PM

Method: DAILY1 Sample Name: ZZZZ Operator:
Run Time: 02/05/16 18:33:07
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0021	-.0165	-.0028	.0131	.0007	.0000	-.0070
SDev	.0011	.0055	.0045	.0036	.0000	.0000	.0042
%RSD	52.12	33.25	158.8	27.37	5.516	36.49	60.68
#1	-.0013	-.0126	.0003	.0157	.0008	.0000	-.0040
#2	-.0028	-.0204	-.0060	.0106	.0007	.0000	-.0099

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0002	-.0002	-.0008	.0022	-.0009	.0504	-.0211
SDev	.0001	.0000	.0000	.0001	.0010	.0042	.0131
%RSD	86.12	8.118	.5693	3.269	112.3	8.248	62.03
#1	.0003	-.0002	-.0008	.0022	-.0002	.0533	-.0303
#2	.0001	-.0002	-.0008	.0023	-.0016	.0474	-.0118

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0010	.0010	-.0048	.0004	.0049	-.0037	.0284
SDev	.0005	.0001	.0022	.0000	.0022	.0002	.0272
%RSD	51.65	9.116	46.01	10.71	44.95	6.693	95.64
#1	-.0006	.0010	-.0033	.0004	.0064	-.0039	.0477
#2	-.0013	.0009	-.0064	.0003	.0033	-.0035	.0092

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0002	.0073	-.0141	.0058	-.0034	.0176	-.0054
SDev	.0002	.0040	.0041	.0032	.0036	.0166	.0065
%RSD	114.3	55.24	29.27	55.32	107.0	94.72	119.7
#1	-.0004	.0102	-.0112	.0035	-.0008	.0058	-.0008
#2	-.0000	.0045	-.0170	.0081	-.0060	.0293	-.0100

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	99.81	-.0142	.0244	.0025	-.0008	.0115	.0034
SDev	.29	.0054	.0062	.0033	.0008	.0023	.0016
%RSD	.2862	37.65	25.42	133.7	90.80	20.35	45.64
#1	99.61	-.0104	.0200	.0048	-.0014	.0098	.0045
#2	100.0	-.0180	.0287	.0001	-.0003	.0131	.0023

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0001	.0103	-.0011	-.0239	-.0258	.0021	.0002
SDev	.0000	.0019	.0001	.0034	.0082	.0002	.0016
%RSD	45.02	18.53	10.86	14.04	31.64	10.97	900.1
#1	-.0001	.0089	-.0010	-.0263	-.0200	.0023	-.0009
#2	-.0001	.0116	-.0012	-.0215	-.0316	.0020	.0013

010305

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0006	.0004	.0029
SDev	.0001	.0005	.0006
%RSD	10.58	143.9	19.62
#1	.0007	.0007	.0033
#2	.0006	-.0000	.0025

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	799122	10000	--	--	--	--	--
SDev	2312.946	.0000000	--	--	--	--	--
%RSD	.2894361	.0000000	--	--	--	--	--
#1	797486	10000	--	--	--	--	--
#2	800757	10000	--	--	--	--	--

Method: DAILY1 Sample Name: CCV Operator:
Run Time: 02/05/16 18:38:23
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.024	10.19	5.272	5.217	10.11	H1.105	5.014
SDev	.003	.01	.062	.062	.09	.060	.081
%RSD	.3065	.0930	1.172	1.192	.8924	5.428	1.625
#1	1.026	10.19	5.229	5.173	10.05	H1.148	4.957
#2	1.021	10.20	5.316	5.261	10.17	1.063	5.072
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	1.100	11.00	5.500	5.500	11.00	1.100	5.500
Low	.9000	9.000	4.500	4.500	9.000	.9000	4.500

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.24	1.058	5.152	2.001	2.009	10.02	19.01
SDev	.00	.016	.020	.003	.002	.00	.19
%RSD	.0211	1.559	.3838	.1574	.1199	.0088	1.014
#1	20.24	1.046	5.138	1.999	2.007	10.02	18.87
#2	20.24	1.070	5.166	2.003	2.011	10.02	19.14
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.00	1.100	5.500	2.200	2.200	11.00	22.00
Low	18.00	.9000	4.500	1.800	1.800	9.000	18.00

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.014	5.463	20.09	1.036	4.972	H38.46	29.23
SDev	.039	.056	.04	.003	.084	.25	.07
%RSD	.7823	1.023	.1802	.3169	1.699	.6424	.2278
#1	4.986	5.423	20.06	1.034	4.912	H38.28	29.18
#2	5.041	H5.502	20.11	1.039	5.031	H38.63	29.27
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	5.500	5.500	22.00	1.100	5.500	33.00	33.00
Low	4.500	4.500	18.00	.9000	4.500	27.00	27.00

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.998	5.104	5.039	5.041	.9743	1.039	1.011
SDev	.001	.064	.054	.082	.0007	.018	.013
%RSD	.0118	1.256	1.077	1.636	.0705	1.721	1.293
#1	4.997	5.058	5.001	4.982	.9738	1.026	1.002
#2	4.998	5.149	5.077	5.099	.9748	1.051	1.020
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	5.500	5.500			1.100	1.100	1.100
Low	4.500	4.500			.9000	.9000	.9000

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	97.26	5.373	5.337	4.935	5.035	5.344	5.040
SDev	1.21	.071	.103	.016	.073	.093	.033
%RSD	1.245	1.324	1.939	.3225	1.450	1.733	.6462
#1	98.12	5.322	5.264	4.924	4.983	5.278	5.017
#2	96.41	5.423	5.410	4.946	5.087	5.409	5.063
Errors	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass
High				5.500	5.500	5.500	5.500
Low				4.500	4.500	4.500	4.500

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.057	1.036	4.950	5.320	5.017	5.170	1.090
SDev	.049	.010	.008	.046	.065	.002	.044
%RSD	.9644	.9948	.1645	.8686	1.299	.0358	4.055
#1	5.022	1.029	4.956	5.287	4.971	5.171	1.059
#2	5.091	1.043	4.944	5.353	5.063	5.168	H1.122
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.500	1.100	5.500	5.500	5.500	5.500	1.100
Low	4.500	.9000	4.500	4.500	4.500	4.500	.9000

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	5.056	1.063	5.058
SDev	.010	.007	.003
%RSD	.1994	.6185	.0670
#1	5.049	1.058	5.061
#2	5.063	1.067	5.056
Errors	LC Pass	LC Pass	LC Pass
High	5.500	1.100	5.500
Low	4.500	.9000	4.500

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	778700	10000	--	--	--	--	--
SDev	9666.149	.0000000	--	--	--	--	--
%RSD	1.241319	.0000000	--	--	--	--	--
#1	785535	10000	--	--	--	--	--
#2	771865	10000	--	--	--	--	--

Method: DAILY1 Sample Name: CCB Operator:
Run Time: 02/05/16 18:43:39
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0027	-.0096	L-.0061	.0110	.0007	.0001	-.0024
SDev	.0005	.0012	.0085	.0032	.0003	.0000	.0008
%RSD	19.92	12.32	139.3	29.02	42.09	19.40	34.91
#1	-.0031	-.0088	-.0001	.0133	.0005	.0000	-.0018
#2	-.0023	-.0104	L-.0121	.0088	.0010	.0001	-.0030
Errors	LC Pass	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass
High	.0050	.0500	.0050	.0500	.0050	.0050	.0100
Low	-.0050	-.0500	-.0050	-.0500	-.0050	-.0050	-.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0002	-.0004	-.0002	.0022	-.0010	H.0597	-.0205
SDev	.0010	.0001	.0004	.0014	.0002	.0143	.0398
%RSD	469.1	13.39	147.1	62.83	20.55	24.01	194.0
#1	-.0005	-.0005	-.0005	.0012	-.0011	.0496	-.0486
#2	.0009	-.0004	.0000	.0032	-.0008	H.0699	.0076
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	.0500	.0050	.0050	.0050	.0050	.0500	.1000
Low	-.0500	-.0050	-.0050	-.0050	-.0050	-.0500	-.1000

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0012	.0010	-.0078	.0004	.0031	-.0072	L-.0547
SDev	.0009	.0000	.0041	.0001	.0012	.0050	.3572
%RSD	73.89	3.106	52.62	34.17	38.28	69.53	653.1
#1	-.0019	.0009	-.0107	.0003	.0023	-.0107	L-.3072
#2	-.0006	.0010	-.0049	.0005	.0040	-.0037	H.1979
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low
High	.0050	.0050	.0500	.0050	.0050	.0500	.0500
Low	-.0050	-.0050	-.0500	-.0050	-.0050	-.0500	-.0500

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0010	.0088	-.0195	.0099	L-.0067	.0161	-.0043
SDev	.0008	.0079	.0046	.0018	.0029	.0101	.0002
%RSD	85.31	89.87	23.54	18.07	43.06	62.98	4.376
#1	.0004	.0144	-.0163	.0086	L-.0087	H.0233	-.0044
#2	.0016	.0032	-.0228	.0112	-.0047	.0089	-.0041
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Low	LC Pass	LC Pass
High	.0050	.0200			.0050	.0200	.0100
Low	-.0050	-.0200			-.0050	-.0200	-.0100

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

010310

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	99.06	-.0203	.0367	-.0053	.0001	H.0177	.0076
SDev	.13	.0088	.0003	.0010	.0003	.0027	.0041
%RSD	.1271	43.35	.7211	18.48	402.7	15.55	54.57
#1	99.15	-.0141	.0365	-.0060	.0003	H.0196	.0046
#2	98.97	-.0265	.0369	-.0046	-.0002	H.0157	H.0105
Errors	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC High	LC Pass
High				.0100	.0050	.0050	.0100
Low				-.0100	-.0050	-.0050	-.0100

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0001	H.0149	-.0013	L-.0376	-.0124	.0032	.0037
SDev	.0000	.0061	.0003	.0116	.0446	.0010	.0112
%RSD	16.28	40.62	19.81	30.87	358.9	31.62	305.5
#1	-.0002	H.0106	-.0015	L-.0458	-.0439	.0025	-.0042
#2	-.0001	H.0192	-.0011	L-.0294	.0191	.0040	H.0116

Errors	LC Pass	LC High	LC Pass	LC Low	LC Pass	LC Pass	LC Pass
High	.0050	.0100	.0050	.0100	.1000	.0050	.0100
Low	-.0050	-.0100	-.0050	-.0100	-.1000	-.0050	-.0100

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0008	-.0001	.0039
SDev	.0004	.0001	.0016
%RSD	46.08	159.3	41.11
#1	.0006	-.0001	.0027
#2	.0011	.0000	.0050

Errors	LC Pass	LC Pass	LC Pass
High	.0050	.0050	.0050
Low	-.0050	-.0050	-.0050

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	793018	10000	--	--	--	--	--
SDev	998.4348	.0000000	--	--	--	--	--
%RSD	.1259032	.0000000	--	--	--	--	--
#1	793724	10000	--	--	--	--	--
#2	792312	10000	--	--	--	--	--

Analysis Report 02/05/16 06:53:53 PM

Method: DAILY1 Sample Name: PB16A26KE3 Operator:
Run Time: 02/05/16 18:48:55
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0006	.0898	-.0058	.2050	.0345	.0001	-.0013
SDev	.0046	.0279	.0012	.0053	.0002	.0001	.0166
%RSD	810.2	31.06	19.73	2.561	.6580	105.0	1279.
#1	.0038	.1095	-.0050	.2088	.0346	.0002	.0105
#2	-.0027	.0700	-.0067	.2013	.0343	.0000	-.0131

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0856	.0000	-.0005	.0018	-.0006	.0822	.1079
SDev	.0041	.0003	.0006	.0004	.0001	.0045	.1291
%RSD	4.839	772.1	122.2	22.22	18.65	5.526	119.7
#1	.0885	.0002	-.0009	.0015	-.0005	.0790	.1992
#2	.0827	-.0002	-.0001	.0020	-.0007	.0854	.0166

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0010	.0013	.0417	.0007	.0040	.1674	1.130
SDev	.0052	.0003	.0131	.0001	.0013	.0191	.893
%RSD	538.4	25.35	31.37	12.41	31.44	11.43	79.03
#1	.0046	.0015	.0510	.0006	.0049	.1809	1.761
#2	-.0027	.0011	.0325	.0008	.0031	.1539	.4984

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0008	.0215	-.0184	.0106	-.0073	.0332	.0054
SDev	.0005	.0173	.0056	.0028	.0032	.0279	.0110
%RSD	55.45	80.26	30.39	26.27	43.66	83.96	203.9
#1	-.0011	.0338	-.0224	.0126	-.0096	.0529	.0132
#2	-.0005	.0093	-.0145	.0087	-.0051	.0135	-.0024

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	101.1	-.0307	.0188	1.471	.0009	.0023	.0111
SDev	.6	.0099	.0018	.022	.0000	.0045	.0075
%RSD	.5906	32.08	9.766	1.483	.5626	193.5	67.94
#1	100.7	-.0377	.0175	1.486	.0009	-.0009	.0164
#2	101.5	-.0237	.0201	1.455	.0009	.0055	.0058

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0008	.0098	.0017	-.0063	.0135	.0023	.0200
SDev	.0003	.0036	.0015	.0069	.0974	.0003	.0077
%RSD	32.77	36.97	92.36	108.7	723.5	13.47	38.63
#1	.0010	.0073	.0028	-.0015	.0823	.0026	.0254
#2	.0006	.0124	.0006	-.0112	-.0554	.0021	.0145

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0006	.0015	.0048
SDev	.0000	.0002	.0008
%RSD	.5776	12.74	16.95
#1	.0006	.0017	.0053
#2	.0006	.0014	.0042

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	809435	10000	--	--	--	--	--
SDev	4832.368	.0000000	--	--	--	--	--
%RSD	.5970051	.0000000	--	--	--	--	--
#1	806018	10000	--	--	--	--	--
#2	812852	10000	--	--	--	--	--

Method: DAILY1 Sample Name: LCS16A26KE3 Operator:
Run Time: 02/05/16 18:54:11
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0982	4.030	4.023	.2808	3.907	.1210	-.0093
SDev	.0001	.019	.001	.0030	.024	.0006	.0023
%RSD	.0822	.4660	.0302	1.077	.6033	.4598	25.12
#1	.0981	4.017	4.024	.2829	3.924	.1214	-.0110
#2	.0982	4.043	4.022	.2786	3.890	.1206	-.0077

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.10	.0990	.9999	.3745	.4922	2.020	16.16
SDev	.06	.0004	.0034	.0006	.0023	.006	.02
%RSD	.2848	.4152	.3381	.1670	.4625	.3101	.1293
#1	20.06	.0993	1.002	.3741	.4906	2.015	16.14
#2	20.14	.0987	.9975	.3749	.4938	2.024	16.17

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0022	.0013	19.72	1.016	.0027	23.45	18.58
SDev	.0001	.0000	.00	.002	.0000	.05	.40
%RSD	4.265	2.530	.0107	.1527	.6561	.2136	2.173
#1	-.0023	.0013	19.72	1.017	.0027	23.41	18.29
#2	-.0021	.0014	19.72	1.015	.0027	23.48	18.86

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9541	1.899	.9669	.9856	-.0046	1.987	1.010
SDev	.0027	.012	.0080	.0058	.0000	.008	.003
%RSD	.2776	.6498	.8240	.5905	.5434	.3917	.3086
#1	.9559	1.908	.9725	.9897	-.0046	1.993	1.013
#2	.9522	1.890	.9612	.9815	-.0046	1.982	1.008

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	98.74	4.031	4.041	1.928	.9784	4.034	.0098
SDev	.35	.024	.014	.000	.0065	.017	.0002
%RSD	.3560	.5841	.3453	.0053	.6673	.4248	1.803
#1	98.49	4.048	4.051	1.928	.9830	4.046	.0099
#2	98.99	4.015	4.031	1.928	.9738	4.022	.0096

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0003	.0083	.0009	4.077	-.0603	1.008	.0173
SDev	.0000	.0003	.0003	.034	.0021	.001	.0043
%RSD	2.844	3.113	28.29	.8302	3.511	.0842	24.85
#1	.0003	.0081	.0011	4.101	-.0618	1.007	.0204
#2	.0003	.0084	.0008	4.053	-.0588	1.008	.0143

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0008	1.032	.0192
SDev	.0001	.002	.0004
%RSD	5.824	.2099	1.942
#1	.0008	1.034	.0190
#2	.0009	1.031	.0195

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	790541	10000	--	--	--	--	--
SDev	2788.829	.0000000	--	--	--	--	--
%RSD	.3527748	.0000000	--	--	--	--	--
#1	788569	10000	--	--	--	--	--
#2	792513	10000	--	--	--	--	--

Analysis Report 02/05/16 07:04:24 PM

Method: DAILY1 Sample Name: LCS16A26KE4 Operator:
Run Time: 02/05/16 18:59:28
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2343	.4419	.2345	.3646	.2457	.2859	.2145
SDev	.0026	.0109	.0037	.0011	.0006	.0043	.0196
%RSD	1.095	2.458	1.556	.3094	.2633	1.491	9.124
#1	.2325	.4342	.2319	.3638	.2461	.2889	.2006
#2	.2361	.4495	.2371	.3654	.2452	.2829	.2283

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.3054	.2464	.2399	.1128	.2384	.3116	.1384
SDev	.0008	.0003	.0002	.0002	.0008	.0019	.0396
%RSD	.2744	.1029	.0829	.2057	.3447	.5939	28.65
#1	.3048	.2462	.2398	.1126	.2378	.3102	.1103
#2	.3060	.2466	.2401	.1129	.2389	.3129	.1664

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2406	.2549	.2395	.2495	.2470	.4883	4.335
SDev	.0011	.0008	.0108	.0009	.0021	.0083	.391
%RSD	.4793	.3352	4.524	.3810	.8642	1.710	9.027
#1	.2398	.2543	.2319	.2488	.2455	.4824	4.058
#2	.2414	.2555	.2472	.2502	.2485	.4942	4.612

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2337	.2204	.2266	.2354	.2370	.2206	.2084
SDev	.0008	.0047	.0020	.0032	.0004	.0222	.0049
%RSD	.3622	2.121	.8971	1.352	.1766	10.07	2.342
#1	.2343	.2237	.2251	.2377	.2373	.2363	.2049
#2	.2331	.2170	.2280	.2332	.2367	.2049	.2118

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	103.4	.2279	.2747	2.164	.2322	.2588	.2294
SDev	.3	.0017	.0071	.001	.0014	.0053	.0084
%RSD	.2861	.7610	2.587	.0476	.6216	2.052	3.676
#1	103.2	.2291	.2797	2.163	.2333	.2626	.2234
#2	103.6	.2267	.2696	2.165	.2312	.2551	.2353

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2517	.2615	.3525	.2368	.1712	.2443	.2102
SDev	.0002	.0001	.0010	.0131	.0150	.0003	.0023
%RSD	.0762	.0208	.2725	5.533	8.750	.1424	1.113
#1	.2518	.2616	.3518	.2275	.1606	.2440	.2085
#2	.2516	.2615	.3531	.2460	.1817	.2445	.2119

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.2473	.2537	.2454
SDev	.0001	.0025	.0006
%RSD	.0268	.9716	.2534
#1	.2472	.2519	.2450
#2	.2473	.2554	.2458

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	827567	10000	--	--	--	--	--
SDev	2283.955	.0000000	--	--	--	--	--
%RSD	.2759843	.0000000	--	--	--	--	--
#1	825952	10000	--	--	--	--	--
#2	829182	10000	--	--	--	--	--

Analysis Report 02/05/16 07:09:41 PM

Method: DAILY1 Sample Name: LCS16A26KE7 Operator:
Run Time: 02/05/16 19:04:44
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0033	142.2	.0060	.3422	1.819	.0068	-.0032
SDev	.0013	1.7	.0117	.0040	.010	.0001	.0011
%RSD	38.83	1.173	193.8	1.159	.5544	.9326	34.48
#1	-.0042	141.1	-.0022	.3450	1.826	.0067	-.0040
#2	-.0024	143.4	.0143	.3394	1.812	.0068	-.0024

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	14.05	-.0006	.0018	.0128	.0108	28.35	65.22
SDev	.07	.0000	.0002	.0003	.0007	.40	.34
%RSD	.5265	5.775	11.34	2.039	6.300	1.406	.5148
#1	14.00	-.0006	.0020	.0126	.0103	28.07	64.98
#2	14.10	-.0005	.0017	.0130	.0113	28.63	65.45

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0549	.1032	2.881	.7935	.0101	93.66	71.39
SDev	.0002	.0003	.017	.0051	.0005	.39	1.73
%RSD	.3685	.2984	.5932	.6447	5.210	.4146	2.429
#1	.0547	.1030	2.869	.7899	.0105	93.38	70.16
#2	.0550	.1035	2.893	.7972	.0097	93.93	72.62

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0063	.3282	.0222	.0335	-.0034	.0593	-.0068
SDev	.0008	.0112	.0097	.0049	.0003	.0093	.0021
%RSD	12.70	3.400	43.51	14.64	9.422	15.71	30.66
#1	.0068	.3203	.0290	.0300	-.0036	.0658	-.0054
#2	.0057	.3360	.0154	.0370	-.0031	.0527	-.0083

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	95.92	-.0239	.0194	2.819	.0297	.0049	.0131
SDev	.29	.0055	.0040	.037	.0001	.0008	.0004
%RSD	.3000	22.82	20.68	1.315	.1733	17.17	3.417
#1	95.72	-.0201	.0165	2.793	.0297	.0043	.0134
#2	96.12	-.0278	.0222	2.845	.0298	.0055	.0128

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1286	.0266	2.816	.0296	-.0028	.0188	.0160
SDev	.0009	.0095	.008	.0105	.0228	.0001	.0048
%RSD	.6721	35.64	.2972	35.31	819.3	.7467	30.20
#1	.1293	.0199	2.810	.0370	.0134	.0187	.0126
#2	.1280	.0333	2.822	.0222	-.0189	.0189	.0194

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0753	.1052	.5496
SDev	.0002	.0020	.0012
%RSD	.2859	1.908	.2216
#1	.0755	.1038	.5487
#2	.0752	.1066	.5505

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	767933	10000	--	--	--	--	--
SDev	2291.026	.0000000	--	--	--	--	--
%RSD	.2983367	.0000000	--	--	--	--	--
#1	766313	10000	--	--	--	--	--
#2	769553	10000	--	--	--	--	--

Method: DAILY1 Sample Name: LCS16A26KE8 Operator:
Run Time: 02/05/16 19:09:59
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0040	188.8	-.0047	.3971	.3692	.0011	-.0080
SDev	.0011	.2	.0002	.0000	.0038	.0000	.0033
%RSD	27.23	.0846	4.677	.0018	1.033	3.380	41.34
#1	-.0032	188.9	-.0045	.3971	.3719	.0011	-.0056
#2	-.0048	188.6	-.0048	.3971	.3665	.0011	-.0103

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	173.3	-.0002	.0973	.6538	.1977	149.1	3.496
SDev	.0	.0000	.0012	.0037	.0015	.1	.031
%RSD	.0046	16.70	1.268	.5671	.7596	.0554	.8924
#1	173.3	-.0002	.0965	.6512	.1966	149.0	3.474
#2	173.3	-.0002	.0982	.6565	.1987	149.2	3.518

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0057	.0184	107.4	2.729	.0019	45.33	33.79
SDev	.0011	.0002	.3	.006	.0004	.22	.25
%RSD	20.14	.9039	.2839	.2050	22.47	.4903	.7288
#1	.0049	.0182	107.2	2.725	.0022	45.18	33.61
#2	.0065	.0185	107.6	2.733	.0016	45.49	33.96

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.3205	1.218	-.0907	.0424	.0113	.2680	-.0004
SDev	.0028	.015	.0022	.0003	.0007	.0223	.0012
%RSD	.8703	1.233	2.406	.7752	6.560	8.305	311.0
#1	.3225	1.229	-.0892	.0422	.0108	.2837	.0005
#2	.3186	1.208	-.0923	.0427	.0118	.2523	-.0013

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	95.16	-.0324	.0214	3.182	-.0020	.0034	.0162
SDev	.14	.0020	.0057	.008	.0005	.0032	.0014
%RSD	.1465	6.018	26.93	.2590	25.91	92.42	8.846
#1	95.26	-.0311	.0173	3.188	-.0016	.0012	.0152
#2	95.06	-.0338	.0254	3.176	-.0023	.0057	.0172

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.3612	-.0620	14.47	.2791	-.0501	.5625	.0067
SDev	.0014	.0035	.01	.0468	.0112	.0005	.0007
%RSD	.3923	5.610	.0564	16.77	22.39	.0902	11.13
#1	.3622	-.0645	14.47	.2460	-.0580	.5621	.0061
#2	.3602	-.0595	14.46	.3122	-.0421	.5628	.0072

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0408	.1725	.1132
SDev	.0001	.0000	.0012
%RSD	.1333	.0068	1.098
#1	.0407	.1725	.1123
#2	.0408	.1725	.1140

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	761884	10000	--	--	--	--	--
SDev	1116.522	.0000000	--	--	--	--	--
%RSD	.1465474	.0000000	--	--	--	--	--
#1	762674	10000	--	--	--	--	--
#2	761095	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 588049TF DF10 Operator:
Run Time: 02/05/16 19:15:15
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0030	22.48	.0226	-.0109	17.89	.0011	-.0144
SDev	.0008	.01	.0041	.0005	.10	.0000	.0149
%RSD	27.32	.0412	18.27	4.337	.5381	3.892	103.3
#1	-.0035	22.48	.0197	-.0112	17.82	.0011	-.0250
#2	-.0024	22.47	.0255	-.0105	17.96	.0012	-.0039

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	27.20	.0011	.4927	.0281	.3008	12.80	4.753
SDev	.07	.0003	.0034	.0009	.0021	.01	.047
%RSD	.2400	26.63	.6965	3.260	.7128	.0896	.9818
#1	27.15	.0009	.4902	.0287	.2993	12.81	4.720
#2	27.24	.0013	.4951	.0274	.3023	12.80	4.786

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0186	.0149	6.111	.3514	.1223	4.760	3.441
SDev	.0007	.0001	.020	.0017	.0014	.032	.155
%RSD	3.676	.9457	.3317	.4924	1.116	.6725	4.505
#1	.0181	.0148	6.096	.3502	.1232	4.737	3.332
#2	.0191	.0150	6.125	.3527	.1213	4.782	3.551

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.6512	.4462	2.079	2.086	-.0062	2.396	-.0048
SDev	.0148	.0111	.013	.000	.0022	.030	.0025
%RSD	2.276	2.482	.6147	.0173	35.19	1.239	52.12
#1	.6407	.4384	2.070	2.085	-.0077	2.375	-.0066
#2	.6617	.4541	2.088	2.086	-.0046	2.417	-.0030

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	98.16	.0260	.0832	-.1345	2.081	.0641	.0116
SDev	.66	.0069	.0142	.0061	.004	.0072	.0052
%RSD	.6717	26.46	17.09	4.516	.2160	11.20	44.74
#1	98.63	.0211	.0933	-.1388	2.078	.0692	.0079
#2	97.70	.0309	.0732	-.1302	2.085	.0590	.0153

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.5574	.0761	1.509	.0247	.5635	.1711	.0040
SDev	.0039	.0054	.004	.0220	.0358	.0006	.0006
%RSD	.6943	7.059	.2813	89.11	6.353	.3448	15.41
#1	.5546	.0799	1.506	.0091	.5382	.1707	.0035
#2	.5601	.0723	1.512	.0402	.5888	.1716	.0044

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0146	.0915	.0974
SDev	.0002	.0001	.0008
%RSD	1.423	.1172	.8005
#1	.0148	.0914	.0979
#2	.0145	.0916	.0968

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	785956	10000	--	--	--	--	--
SDev	5261.582	.0000000	--	--	--	--	--
%RSD	.6694503	.0000000	--	--	--	--	--
#1	789676	10000	--	--	--	--	--
#2	782235	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 588556TF DF10 Operator:
Run Time: 02/05/16 19:20:32
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0027	25.45	.0250	-.0089	22.84	.0015	-.0126
SDev	.0014	.07	.0095	.0013	.26	.0000	.0046
%RSD	52.21	.2809	37.99	14.25	1.155	1.046	36.95
#1	-.0037	25.40	.0317	-.0098	22.65	.0015	-.0159
#2	-.0017	25.50	.0183	-.0080	23.03	.0015	-.0093

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	61.87	.0015	.9585	.0410	.6039	17.40	4.993
SDev	.22	.0002	.0015	.0003	.0032	.04	.045
%RSD	.3494	13.21	.1560	.7649	.5294	.2261	.8956
#1	61.71	.0013	.9574	.0408	.6016	17.37	4.962
#2	62.02	.0016	.9595	.0412	.6061	17.43	5.025

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0368	.0276	10.08	.7236	.1206	3.796	3.190
SDev	.0020	.0002	.04	.0022	.0031	.039	.235
%RSD	5.458	.8850	.4246	.2995	2.597	1.021	7.370
#1	.0353	.0274	10.05	.7221	.1184	3.769	3.357
#2	.0382	.0277	10.11	.7252	.1228	3.824	3.024

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.240	.4686	2.565	2.555	-.0038	3.627	-.0008
SDev	.007	.0149	.025	.063	.0045	.001	.0022
%RSD	.5759	3.187	.9771	2.458	118.2	.0247	276.6
#1	1.235	.4580	2.547	2.510	-.0070	3.628	.0008
#2	1.245	.4791	2.583	2.599	-.0006	3.627	-.0024

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	96.97	.0293	.0715	-.1130	2.556	.0574	.0232
SDev	1.46	.0088	.0039	.0058	.050	.0055	.0001
%RSD	1.510	29.99	5.474	5.098	1.963	9.637	.1945
#1	98.00	.0355	.0743	-.1171	2.520	.0613	.0233
#2	95.93	.0231	.0687	-.1089	2.591	.0535	.0232

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.191	.0660	1.678	.0180	.4509	.2008	.0050
SDev	.012	.0040	.002	.0012	.0364	.0011	.0028
%RSD	1.025	6.140	.0952	6.641	8.077	.5632	57.00
#1	1.182	.0689	1.677	.0188	.4252	.2000	.0030
#2	1.200	.0631	1.679	.0171	.4767	.2016	.0070

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0184	.1807	.0945
SDev	.0003	.0000	.0003
%RSD	1.543	.0005	.3208
#1	.0182	.1807	.0943
#2	.0186	.1807	.0947

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	776326	10000	--	--	--	--	--
SDev	11646.76	.0000000	--	--	--	--	--
%RSD	1.500239	.0000000	--	--	--	--	--
#1	784562	10000	--	--	--	--	--
#2	768091	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 588556TFD DF10 Operator:
Run Time: 02/05/16 19:25:50
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0030	26.60	.0289	-.0075	19.65	.0015	-.0151
SDev	.0007	.12	.0018	.0002	.17	.0001	.0051
%RSD	23.97	.4366	6.287	3.109	.8558	4.008	33.69
#1	-.0036	26.52	.0277	-.0076	19.53	.0015	-.0187
#2	-.0025	26.69	.0302	-.0073	19.77	.0016	-.0115

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	59.87	.0016	1.031	.0417	.6431	17.88	5.190
SDev	.34	.0002	.002	.0011	.0031	.11	.053
%RSD	.5709	13.80	.2127	2.728	.4817	.6069	1.029
#1	59.63	.0014	1.029	.0409	.6410	17.81	5.152
#2	60.11	.0018	1.032	.0425	.6453	17.96	5.228

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0347	.0277	9.913	.7141	.1247	3.984	3.000
SDev	.0003	.0002	.064	.0049	.0035	.015	.431
%RSD	1.010	.7779	.6495	.6819	2.791	.3850	14.36
#1	.0345	.0276	9.867	.7107	.1222	3.973	2.696
#2	.0350	.0279	9.958	.7176	.1272	3.994	3.305

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.357	.4866	2.359	2.355	-.0052	3.706	.0048
SDev	.024	.0004	.024	.026	.0074	.025	.0003
%RSD	1.775	.0923	1.010	1.083	142.5	.6822	6.253
#1	1.340	.4863	2.376	2.373	.0000	3.724	.0046
#2	1.374	.4870	2.342	2.337	-.0104	3.688	.0050

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	98.13	.0317	.0743	-.1019	2.354	.0601	.0227
SDev	.71	.0017	.0042	.0018	.025	.0034	.0014
%RSD	.7217	5.464	5.655	1.804	1.059	5.620	6.145
#1	98.63	.0305	.0713	-.1032	2.372	.0577	.0237
#2	97.63	.0330	.0773	-.1006	2.336	.0625	.0217

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.082	.0630	1.768	.0066	.4731	.2099	.0049
SDev	.006	.0056	.005	.0210	.0095	.0020	.0049
%RSD	.5235	8.820	.2709	315.7	2.018	.9691	99.84
#1	1.078	.0591	1.765	-.0082	.4798	.2084	.0084
#2	1.086	.0669	1.771	.0215	.4663	.2113	.0014

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0194	.1910	.0991
SDev	.0004	.0000	.0017
%RSD	2.267	.0036	1.680
#1	.0191	.1910	.0980
#2	.0197	.1910	.1003

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	785604	10000	--	--	--	--	--
SDev	5639.177	.0000000	--	--	--	--	--
%RSD	.7178137	.0000000	--	--	--	--	--
#1	789592	10000	--	--	--	--	--
#2	781617	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 588556TFL DF50 Operator:
Run Time: 02/05/16 19:31:03
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0019	5.078	-.0018	-.0188	4.718	.0003	-.0064
SDev	.0001	.031	.0022	.0016	.049	.0001	.0031
%RSD	5.017	.6175	121.5	8.424	1.039	18.57	48.01
#1	-.0019	5.056	-.0033	-.0200	4.684	.0003	-.0085
#2	-.0018	5.100	-.0002	-.0177	4.753	.0003	-.0042

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	12.51	.0000	.1919	.0094	.1181	3.558	.7795
SDev	.04	.0001	.0025	.0009	.0019	.003	.0489
%RSD	.3383	1736.	1.284	10.13	1.571	.0732	6.274
#1	12.48	.0001	.1902	.0101	.1168	3.560	.7449
#2	12.54	-.0001	.1936	.0087	.1194	3.556	.8141

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0067	.0057	2.038	.1466	.0246	.6458	.3124
SDev	.0007	.0002	.018	.0012	.0022	.0083	.4250
%RSD	10.30	3.375	.9056	.8458	9.062	1.287	136.0
#1	.0062	.0056	2.025	.1458	.0261	.6399	.0119
#2	.0071	.0059	2.051	.1475	.0230	.6516	.6130

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2441	.0942	.4949	.5225	-.0056	.7170	-.0055
SDev	.0026	.0013	.0129	.0006	.0032	.0086	.0010
%RSD	1.071	1.342	2.610	.1096	57.81	1.203	18.27
#1	.2423	.0950	.4858	.5221	-.0079	.7231	-.0047
#2	.2460	.0933	.5041	.5229	-.0033	.7109	-.0062

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	99.64	-.0175	.0229	-.1898	.5128	.0095	.0068
SDev	1.63	.0025	.0015	.0032	.0047	.0002	.0027
%RSD	1.634	14.06	6.511	1.710	.9133	1.853	40.29
#1	100.8	-.0192	.0240	-.1921	.5095	.0096	.0088
#2	98.49	-.0158	.0219	-.1875	.5161	.0093	.0049

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2398	.0218	.3339	-.0216	.0901	.0417	.0004
SDev	.0016	.0037	.0005	.0060	.0057	.0011	.0013
%RSD	.6505	17.19	.1490	27.69	6.307	2.699	330.1
#1	.2387	.0245	.3336	-.0258	.0861	.0425	-.0005
#2	.2409	.0192	.3343	-.0174	.0941	.0409	.0013

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0041	.0357	.0207
SDev	.0003	.0005	.0010
%RSD	6.453	1.416	4.656
#1	.0043	.0353	.0214
#2	.0039	.0360	.0200

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	797736	10000	--	--	--	--	--
SDev	12945.00	.0000000	--	--	--	--	--
%RSD	1.622717	.0000000	--	--	--	--	--
#1	806890	10000	--	--	--	--	--
#2	788583	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 588556TFMS3 DF10 Operator:
Run Time: 02/05/16 19:36:20
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0017	26.74	.1312	-.0090	22.16	.0044	-.0235
SDev	.0016	.18	.0043	.0008	.01	.0001	.0028
%RSD	94.18	.6606	3.313	8.710	.0335	1.315	11.98
#1	-.0029	26.62	.1281	-.0096	22.16	.0043	-.0255
#2	-.0006	26.87	.1342	-.0085	22.17	.0044	-.0215

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	53.73	.0036	1.045	.0503	.6460	17.77	5.985
SDev	.10	.0004	.005	.0004	.0017	.08	.068
%RSD	.1880	10.09	.5027	.9029	.2615	.4626	1.128
#1	53.66	.0034	1.041	.0500	.6448	17.72	5.937
#2	53.80	.0039	1.048	.0506	.6472	17.83	6.033

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0317	.0282	10.57	.7477	.1285	5.179	3.382
SDev	.0024	.0001	.04	.0018	.0011	.002	.771
%RSD	7.604	.3858	.3604	.2418	.8834	.0350	22.81
#1	.0300	.0281	10.55	.7464	.1293	5.180	2.836
#2	.0334	.0283	10.60	.7490	.1277	5.177	3.927

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.347	.5858	2.262	2.291	-.0127	3.621	.0178
SDev	.013	.0129	.005	.016	.0042	.038	.0012
%RSD	.9925	2.195	.2367	.7125	32.75	1.054	6.503
#1	1.357	.5949	2.258	2.303	-.0157	3.648	.0169
#2	1.338	.5767	2.266	2.280	-.0098	3.594	.0186

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	97.35	.1240	.1812	-.1037	2.279	.1620	.0146
SDev	.01	.0012	.0033	.0092	.009	.0026	.0025
%RSD	.0058	.9891	1.804	8.862	.3988	1.596	16.99
#1	97.34	.1248	.1836	-.1102	2.286	.1638	.0128
#2	97.35	.1231	.1789	-.0972	2.273	.1602	.0163

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9731	.0651	1.766	.1137	.4359	.2308	.0025
SDev	.0040	.0024	.005	.0036	.0114	.0013	.0062
%RSD	.4064	3.737	.2768	3.174	2.613	.5668	248.9
#1	.9758	.0633	1.763	.1162	.4278	.2298	-.0019
#2	.9703	.0668	1.770	.1111	.4439	.2317	.0069

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0191	.2136	.0981
SDev	.0001	.0014	.0004
%RSD	.3055	.6514	.3768
#1	.0190	.2126	.0978
#2	.0191	.2146	.0983

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	779334	10000	--	--	--	--	--
SDev	55.86144	.0000000	--	--	--	--	--
%RSD	.0071678	.0000000	--	--	--	--	--
#1	779295	10000	--	--	--	--	--
#2	779374	10000	--	--	--	--	--

Analysis Report 02/05/16 07:46:31 PM page 1

Method: DAILY1 Sample Name: CCV Operator:
Run Time: 02/05/16 19:41:34
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.032	10.23	5.285	5.274	10.11	1.079	5.069
SDev	.006	.01	.014	.011	.00	.078	.034
%RSD	.5992	.1052	.2697	.2006	.0372	7.233	.6769
#1	1.028	10.22	5.275	5.267	10.11	H1.135	5.093
#2	1.037	10.24	5.295	5.282	10.11	1.024	5.045
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.100	11.00	5.500	5.500	11.00	1.100	5.500
Low	.9000	9.000	4.500	4.500	9.000	.9000	4.500

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.39	1.074	5.234	2.035	2.013	10.18	19.21
SDev	.02	.006	.024	.009	.004	.04	.18
%RSD	.0808	.5361	.4608	.4198	.2203	.3727	.9256
#1	20.38	1.079	5.251	2.041	2.016	10.21	19.34
#2	20.40	1.070	5.217	2.029	2.010	10.16	19.09
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.00	1.100	5.500	2.200	2.200	11.00	22.00
Low	18.00	.9000	4.500	1.800	1.800	9.000	18.00

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.991	5.453	20.50	1.051	4.977	H38.67	30.24
SDev	.009	.029	.07	.004	.022	.43	1.18
%RSD	.1860	.5332	.3587	.4111	.4333	1.119	3.890
#1	4.985	5.474	20.56	1.054	4.962	H38.97	31.07
#2	4.998	5.433	20.45	1.048	4.992	H38.36	29.41
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	5.500	5.500	22.00	1.100	5.500	33.00	33.00
Low	4.500	4.500	18.00	.9000	4.500	27.00	27.00

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.091	4.896	5.136	5.128	.9755	1.050	1.006
SDev	.024	.009	.022	.007	.0003	.020	.004
%RSD	.4678	.1757	.4316	.1413	.0268	1.891	.4194
#1	5.108	4.903	5.151	5.133	.9757	1.064	1.009
#2	5.075	4.890	5.120	5.123	.9753	1.036	1.003
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	5.500	5.500			1.100	1.100	1.100
Low	4.500	4.500			.9000	.9000	.9000

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	97.15	5.450	5.411	4.982	5.125	5.418	5.139
SDev	.29	.053	.041	.016	.012	.045	.034
%RSD	.2972	.9762	.7625	.3191	.2382	.8341	.6614
#1	96.95	5.488	5.440	4.971	5.134	5.450	5.163
#2	97.36	5.412	5.381	4.994	5.117	5.386	5.115
Errors	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass
High				5.500	5.500	5.500	5.500
Low				4.500	4.500	4.500	4.500

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.057	1.050	4.960	5.317	5.003	5.219	1.089
SDev	.011	.004	.003	.028	.033	.004	.018
%RSD	.2258	.3947	.0691	.5214	.6529	.0717	1.685
#1	5.065	1.053	4.957	5.298	4.980	5.221	1.076
#2	5.049	1.047	4.962	5.337	5.026	5.216	H1.102
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.500	1.100	5.500	5.500	5.500	5.500	1.100
Low	4.500	.9000	4.500	4.500	4.500	4.500	.9000

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	5.070	1.087	5.089
SDev	.006	.008	.003
%RSD	.1255	.7671	.0598
#1	5.074	1.093	5.091
#2	5.065	1.081	5.087
Errors	LC Pass	LC Pass	LC Pass
High	5.500	1.100	5.500
Low	4.500	.9000	4.500

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	777878	10000	--	--	--	--	--
SDev	2290.319	.0000000	--	--	--	--	--
%RSD	.2944314	.0000000	--	--	--	--	--
#1	776259	10000	--	--	--	--	--
#2	779498	10000	--	--	--	--	--

Method: DAILY1 Sample Name: CCB Operator:
Run Time: 02/05/16 19:46:49
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	H.0051	.0201	-.0046	.0122	.0008	.0002	H.0137
SDev	.0107	.0628	.0081	.0048	.0004	.0002	.0376
%RSD	209.9	312.1	176.2	39.44	53.07	118.2	274.8
#1	-.0025	-.0243	L-.0104	.0088	.0005	.0000	L-.0129
#2	H.0127	H.0645	.0011	.0156	.0011	.0003	H.0403
Errors	LC High	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High
High	.0050	.0500	.0050	.0500	.0050	.0050	.0100
Low	-.0050	-.0500	-.0050	-.0500	-.0050	-.0050	-.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0059	.0005	.0011	.0025	.0009	H.0608	H.1139
SDev	.0069	.0014	.0022	.0010	.0030	.0352	.2123
%RSD	116.2	255.9	199.6	41.15	315.5	57.94	186.4
#1	.0011	-.0004	-.0005	.0017	-.0012	.0359	-.0362
#2	.0108	.0015	.0027	.0032	.0031	H.0857	H.2640
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC High
High	.0500	.0050	.0050	.0050	.0050	.0500	.1000
Low	-.0500	-.0050	-.0050	-.0050	-.0050	-.0500	-.1000

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	H.0052	.0010	.0187	.0004	.0042	.0189	H1.202
SDev	.0106	.0006	.0321	.0002	.0003	.0258	1.937
%RSD	205.5	56.24	171.9	47.17	6.678	136.5	161.1
#1	-.0023	.0006	-.0040	.0002	.0040	.0007	L-.1675
#2	H.0127	.0014	.0414	.0005	.0044	.0371	H2.572
Errors	LC High	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High
High	.0050	.0050	.0500	.0050	.0050	.0500	.0500
Low	-.0050	-.0050	-.0500	-.0050	-.0050	-.0500	-.0500

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0008	.0093	-.0019	.0011	H.0065	.0087	H.0139
SDev	.0016	.0075	.0130	.0098	.0130	.0054	.0348
%RSD	198.2	80.77	681.7	882.4	199.9	62.10	250.8
#1	-.0003	.0040	-.0111	.0080	-.0027	.0049	L-.0107
#2	.0020	.0146	.0073	-.0058	H.0157	.0126	H.0385
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC High	LC Pass	LC High
High	.0050	.0200			.0050	.0200	.0100
Low	-.0050	-.0200			-.0050	-.0200	-.0100

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	98.91	.0000	.0107	H.0111	.0001	H.0072	.0077
SDev	.48	.0148	.0212	.0263	.0022	.0092	.0135
%RSD	.4902	34790.	197.0	236.1	2097.	127.6	175.7
#1	99.25	-.0104	.0257	-.0075	.0017	H.0137	-.0019
#2	98.56	.0105	-.0042	H.0298	-.0014	.0007	H.0172
Errors	NOCHECK	NOCHECK	NOCHECK	LC High	LC Pass	LC High	LC Pass
High				.0100	.0050	.0050	.0100
Low				-.0100	-.0050	-.0050	-.0100

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0002	.0038	.0018	.0061	H.1207	.0031	.0072
SDev	.0006	.0055	.0037	.0096	.2146	.0018	.0208
%RSD	263.0	145.5	212.0	158.6	177.7	58.81	288.4
#1	-.0002	.0077	-.0009	-.0007	-.0310	.0018	-.0075
#2	.0006	-.0001	.0044	H.0129	H.2725	.0044	H.0219
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass
High	.0050	.0100	.0050	.0100	.1000	.0050	.0100
Low	-.0050	-.0100	-.0050	-.0100	-.1000	-.0050	-.0100

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0008	.0006	.0040
SDev	.0004	.0008	.0028
%RSD	44.08	142.1	68.95
#1	.0006	-.0000	.0021
#2	.0011	.0012	H.0060
Errors	LC Pass	LC Pass	LC Pass
High	.0050	.0050	.0050
Low	-.0050	-.0050	-.0050

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	791872	10000	--	--	--	--	--
SDev	3842.418	.0000000	--	--	--	--	--
%RSD	.4852322	.0000000	--	--	--	--	--
#1	794589	10000	--	--	--	--	--
#2	789155	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 588556TFMS4 DF10 Operator:
Run Time: 02/05/16 19:52:03
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0102	27.63	.0429	-.0042	19.85	.0166	.0022
SDev	.0007	.19	.0022	.0001	.05	.0001	.0145
%RSD	7.155	.6735	5.141	1.613	.2692	.7483	661.4
#1	.0097	27.50	.0414	-.0043	19.89	.0165	-.0081
#2	.0107	27.76	.0445	-.0042	19.81	.0167	.0124

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	61.68	.0151	1.055	.0546	.6701	18.24	5.524
SDev	.38	.0000	.002	.0003	.0017	.07	.041
%RSD	.6097	.2955	.1943	.5967	.2600	.3602	.7395
#1	61.41	.0151	1.053	.0544	.6689	18.20	5.495
#2	61.94	.0151	1.056	.0549	.6714	18.29	5.553

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0471	.0444	10.32	.7486	.1428	4.119	3.133
SDev	.0015	.0002	.05	.0024	.0001	.006	.856
%RSD	3.106	.4879	.5042	.3165	.0841	.1571	27.31
#1	.0461	.0443	10.28	.7469	.1429	4.115	2.528
#2	.0482	.0446	10.35	.7503	.1427	4.124	3.738

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.369	.5074	2.322	2.300	.0076	3.767	.0151
SDev	.004	.0058	.009	.014	.0044	.022	.0049
%RSD	.2952	1.142	.3860	.6275	57.91	.5743	32.22
#1	1.366	.5115	2.328	2.290	.0045	3.783	.0117
#2	1.372	.5033	2.316	2.310	.0106	3.752	.0185

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	97.43	.0395	.0847	-.0892	2.305	.0696	.0311
SDev	.16	.0093	.0075	.0032	.007	.0019	.0015
%RSD	.1690	23.61	8.855	3.614	.2876	2.709	4.908
#1	97.32	.0329	.0900	-.0915	2.301	.0709	.0300
#2	97.55	.0461	.0794	-.0869	2.310	.0683	.0322

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.144	.0772	1.823	.0189	.5117	.2285	.0261
SDev	.001	.0026	.007	.0135	.0053	.0008	.0058
%RSD	.0690	3.396	.4010	71.52	1.039	.3325	22.19
#1	1.145	.0754	1.818	.0285	.5079	.2280	.0220
#2	1.144	.0791	1.828	.0094	.5154	.2291	.0302

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0323	.2067	.1138
SDev	.0002	.0007	.0001
%RSD	.5962	.3463	.1170
#1	.0325	.2062	.1139
#2	.0322	.2073	.1137

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	780066	10000	--	--	--	--	--
SDev	1282.692	.0000000	--	--	--	--	--
%RSD	.1644337	.0000000	--	--	--	--	--
#1	779159	10000	--	--	--	--	--
#2	780973	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 588556TFAS DF10 Operator:
Run Time: 02/05/16 19:57:18
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0492	27.29	2.112	-.0074	24.33	.0627	-.0036
SDev	.0001	.02	.011	.0014	.07	.0002	.0104
%RSD	.3131	.0712	.5325	18.87	.2762	.3772	286.0
#1	.0491	27.28	2.104	-.0064	24.28	.0629	.0037
#2	.0493	27.30	2.120	-.0084	24.38	.0626	-.0109

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	80.37	.0524	1.461	.2366	.8468	18.35	23.94
SDev	.19	.0000	.002	.0009	.0007	.02	.08
%RSD	.2383	.0434	.1443	.3661	.0874	.1058	.3317
#1	80.51	.0524	1.460	.2372	.8473	18.36	24.00
#2	80.24	.0523	1.463	.2360	.8462	18.34	23.89

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0354	.0269	30.00	1.231	.1213	29.57	22.17
SDev	.0017	.0000	.06	.001	.0008	.13	.17
%RSD	4.701	.0608	.2108	.1105	.6624	.4334	.7834
#1	.0366	.0269	30.05	1.232	.1207	29.66	22.29
#2	.0342	.0269	29.96	1.230	.1219	29.48	22.05

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.714	.4510	3.042	3.029	-.0028	3.628	.5171
SDev	.005	.0051	.029	.036	.0006	.003	.0029
%RSD	.2798	1.136	.9437	1.194	20.20	.0726	.5510
#1	1.717	.4474	3.063	3.055	-.0032	3.626	.5151
#2	1.710	.4546	3.022	3.004	-.0024	3.630	.5192

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	95.53	2.152	2.161	-.1061	3.031	2.156	.0200
SDev	.99	.029	.025	.0034	.034	.026	.0015
%RSD	1.040	1.340	1.146	3.174	1.110	1.210	7.666
#1	94.83	2.172	2.179	-.1084	3.054	2.174	.0189
#2	96.23	2.131	2.143	-.1037	3.007	2.137	.0210

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.170	.0649	1.668	2.065	.4312	.7068	.0082
SDev	.001	.0045	.000	.025	.0002	.0004	.0083
%RSD	.0604	6.913	.0050	1.195	.0469	.0573	101.6
#1	1.169	.0681	1.668	2.048	.4314	.7071	.0140
#2	1.170	.0618	1.668	2.083	.4311	.7065	.0023

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0187	.7059	.0940
SDev	.0002	.0048	.0002
%RSD	.9027	.6844	.2226
#1	.0188	.7025	.0939
#2	.0186	.7093	.0942

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	764854	10000	--	--	--	--	--
SDev	7928.789	.0000000	--	--	--	--	--
%RSD	1.036640	.0000000	--	--	--	--	--
#1	759248	10000	--	--	--	--	--
#2	770461	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 590212TF DF10 Operator:
Run Time: 02/05/16 20:02:33
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0019	15.16	.0108	-.0024	13.90	.0006	-.0176
SDev	.0010	.07	.0033	.0007	.04	.0000	.0068
%RSD	51.30	.4801	30.44	26.76	.3100	6.284	38.81
#1	-.0012	15.10	.0085	-.0029	13.93	.0006	-.0128
#2	-.0026	15.21	.0131	-.0020	13.87	.0006	-.0225

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	14.18	.0005	.4517	.0165	.6532	9.809	2.889
SDev	.08	.0001	.0015	.0008	.0014	.064	.030
%RSD	.5654	16.53	.3306	4.777	.2155	.6476	1.056
#1	14.12	.0004	.4507	.0159	.6522	9.764	2.868
#2	14.24	.0005	.4528	.0170	.6542	9.854	2.911

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0124	.0104	3.967	.1906	.1397	3.177	2.437
SDev	.0003	.0001	.021	.0008	.0005	.004	.673
%RSD	1.974	1.120	.5268	.4423	.3460	.1137	27.62
#1	.0126	.0103	3.953	.1900	.1394	3.174	1.961
#2	.0123	.0105	3.982	.1912	.1401	3.179	2.913

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.6254	.3090	1.164	1.187	-.0057	2.860	.0170
SDev	.0044	.0018	.005	.007	.0001	.048	.0055
%RSD	.7045	.5864	.4291	.5895	1.248	1.672	32.51
#1	.6223	.3077	1.168	1.182	-.0057	2.894	.0131
#2	.6285	.3103	1.160	1.192	-.0056	2.827	.0209

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	99.33	.0272	.0734	-.0866	1.178	.0580	.0299
SDev	.21	.0019	.0006	.0020	.003	.0002	.0022
%RSD	.2158	6.801	.7779	2.269	.2543	.4052	7.473
#1	99.48	.0259	.0738	-.0852	1.176	.0578	.0283
#2	99.18	.0285	.0730	-.0880	1.180	.0581	.0315

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.3431	.0668	1.137	.0009	.6232	.0777	.0073
SDev	.0003	.0015	.004	.0041	.0300	.0009	.0066
%RSD	.1030	2.198	.3959	470.6	4.815	1.119	91.34
#1	.3429	.0657	1.134	.0037	.6444	.0771	.0026
#2	.3434	.0678	1.141	-.0020	.6020	.0784	.0119

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0092	.0826	.0945
SDev	.0002	.0007	.0003
%RSD	1.717	.8302	.3247
#1	.0091	.0821	.0943
#2	.0093	.0831	.0947

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	795224	10000	--	--	--	--	--
SDev	1699.178	.0000000	--	--	--	--	--
%RSD	.2136727	.0000000	--	--	--	--	--
#1	796426	10000	--	--	--	--	--
#2	794023	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 590213TF DF10 Operator:
Run Time: 02/05/16 20:07:47
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0024	32.83	.0013	-.0002	10.58	.0012	-.0084
SDev	.0010	.06	.0009	.0002	.02	.0001	.0011
%RSD	43.11	.1784	66.23	104.6	.1960	7.863	13.18
#1	-.0016	32.87	.0019	-.0003	10.56	.0011	-.0076
#2	-.0031	32.79	.0007	-.0000	10.59	.0013	-.0092

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	79.19	.0009	.1878	.0380	1.452	13.48	8.109
SDev	.18	.0001	.0010	.0001	.009	.02	.041
%RSD	.2217	9.788	.5585	.2442	.5891	.1241	.5085
#1	79.07	.0008	.1871	.0380	1.458	13.47	8.079
#2	79.31	.0010	.1886	.0379	1.446	13.49	8.138

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0291	.0201	13.05	.4869	.0466	7.402	5.752
SDev	.0013	.0001	.09	.0008	.0001	.048	.442
%RSD	4.584	.6621	.6798	.1753	.1738	.6498	7.675
#1	.0300	.0200	12.98	.4875	.0466	7.436	5.440
#2	.0281	.0202	13.11	.4863	.0467	7.368	6.065

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2620	.4856	2.074	2.091	-.0023	3.709	.0234
SDev	.0028	.0191	.000	.010	.0001	.091	.0032
%RSD	1.079	3.931	.0074	.4634	4.524	2.451	13.76
#1	.2600	.4721	2.075	2.084	-.0024	3.645	.0257
#2	.2640	.4991	2.074	2.098	-.0023	3.774	.0211

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	97.53	.0072	.0453	-.0128	2.083	.0326	.0345
SDev	.57	.0142	.0020	.0011	.006	.0034	.0027
%RSD	.5794	196.5	4.398	8.827	.3073	10.45	7.922
#1	97.13	-.0028	.0467	-.0136	2.079	.0302	.0326
#2	97.93	.0173	.0439	-.0120	2.088	.0350	.0364

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9912	.0388	1.952	.0034	.2980	.0664	.0062
SDev	.0016	.0048	.001	.0319	.0561	.0001	.0005
%RSD	.1586	12.27	.0269	944.8	18.83	.2273	8.756
#1	.9901	.0422	1.952	.0259	.2583	.0665	.0058
#2	.9923	.0355	1.951	-.0192	.3377	.0663	.0066

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0149	.1662	.0895
SDev	.0000	.0020	.0012
%RSD	.0432	1.206	1.383
#1	.0149	.1648	.0886
#2	.0149	.1676	.0904

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	780859	10000	--	--	--	--	--
SDev	4494.371	.0000000	--	--	--	--	--
%RSD	.5755675	.0000000	--	--	--	--	--
#1	777681	10000	--	--	--	--	--
#2	784037	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 590214TF DF10 Operator:
Run Time: 02/05/16 20:13:02
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0027	47.87	.0762	.0033	4.733	.0028	-.0057
SDev	.0017	.65	.0058	.0016	.059	.0001	.0065
%RSD	63.26	1.352	7.619	48.00	1.246	2.069	114.3
#1	-.0015	48.33	.0803	.0044	4.775	.0028	-.0011
#2	-.0039	47.41	.0721	.0022	4.692	.0027	-.0103

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	36.81	.0037	1.235	.0691	.7247	27.83	13.36
SDev	.54	.0003	.017	.0008	.0139	.37	.24
%RSD	1.475	8.221	1.360	1.079	1.920	1.328	1.773
#1	37.19	.0039	1.247	.0696	.7346	28.10	13.53
#2	36.42	.0035	1.224	.0685	.7149	27.57	13.19

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0317	.0305	9.975	1.264	.0808	10.60	7.774
SDev	.0013	.0006	.155	.016	.0018	.20	.034
%RSD	4.231	1.872	1.555	1.267	2.189	1.907	.4330
#1	.0327	.0309	10.08	1.275	.0795	10.74	7.798
#2	.0308	.0301	9.866	1.252	.0820	10.46	7.751

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.640	.9761	.3195	.3660	-.0052	1.980	-.0016
SDev	.031	.0280	.0067	.0086	.0024	.048	.0007
%RSD	1.871	2.874	2.094	2.356	45.85	2.415	42.59
#1	1.662	.9959	.3243	.3721	-.0069	2.014	-.0021
#2	1.618	.9562	.3148	.3600	-.0035	1.946	-.0011

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	98.49	.0770	.1184	-.1132	.3502	.1045	.0022
SDev	.76	.0053	.0101	.0041	.0080	.0050	.0071
%RSD	.7732	6.876	8.548	3.626	2.276	4.763	315.5
#1	97.95	.0807	.1112	-.1103	.3558	.1009	.0073
#2	99.03	.0732	.1255	-.1161	.3446	.1080	-.0028

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2083	.0159	3.517	.0481	2.558	.4502	.0069
SDev	.0029	.0032	.053	.0036	.046	.0066	.0019
%RSD	1.402	20.02	1.508	7.442	1.816	1.477	28.42
#1	.2103	.0137	3.554	.0456	2.590	.4549	.0082
#2	.2062	.0182	3.479	.0506	2.525	.4455	.0055

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0372	.1264	.3288
SDev	.0007	.0013	.0044
%RSD	1.765	1.048	1.325
#1	.0376	.1274	.3319
#2	.0367	.1255	.3257

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	788555	10000	--	--	--	--	--
SDev	6028.792	.0000000	--	--	--	--	--
%RSD	.7645367	.0000000	--	--	--	--	--
#1	784292	10000	--	--	--	--	--
#2	792818	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 591000TF DF10 Operator:
Run Time: 02/05/16 20:18:16
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0031	44.21	.0037	.0018	1.520	.0018	-.0115
SDev	.0001	.02	.0033	.0023	.003	.0001	.0087
%RSD	3.395	.0556	91.16	131.3	.2061	2.932	75.89
#1	-.0031	44.20	.0060	.0001	1.517	.0018	-.0177
#2	-.0030	44.23	.0013	.0034	1.522	.0019	-.0053

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	15.68	.0005	.1307	.0559	.1477	29.90	11.32
SDev	.01	.0004	.0012	.0003	.0008	.26	.03
%RSD	.0456	76.36	.9427	.5275	.5703	.8841	.2217
#1	15.68	.0002	.1299	.0561	.1483	29.71	11.31
#2	15.67	.0008	.1316	.0557	.1471	30.08	11.34

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0147	.0314	7.071	1.130	.0591	6.631	4.864
SDev	.0007	.0001	.039	.008	.0036	.009	.439
%RSD	4.762	.4157	.5535	.7004	6.134	.1318	9.027
#1	.0142	.0313	7.043	1.124	.0617	6.625	4.554
#2	.0152	.0315	7.099	1.135	.0565	6.637	5.175

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1938	.6320	2.800	2.782	-.0059	9.019	-.0055
SDev	.0005	.0191	.016	.016	.0016	.002	.0082
%RSD	.2644	3.017	.5826	.5695	26.84	.0208	150.0
#1	.1934	.6455	2.788	2.794	-.0048	9.017	-.0113
#2	.1942	.6185	2.811	2.771	-.0071	9.020	.0003

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	99.46	.0075	.0459	-.1344	2.785	.0331	.0098
SDev	.35	.0061	.0069	.0035	.005	.0066	.0037
%RSD	.3512	82.21	15.05	2.624	.1812	20.09	37.85
#1	99.71	.0118	.0508	-.1369	2.789	.0378	.0124
#2	99.21	.0031	.0410	-.1319	2.782	.0284	.0072

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.5555	.0166	2.957	.0192	.1849	.1292	.0049
SDev	.0002	.0055	.005	.0038	.0041	.0003	.0012
%RSD	.0392	33.01	.1688	19.96	2.199	.2299	24.05
#1	.5557	.0205	2.960	.0219	.1820	.1295	.0057
#2	.5554	.0127	2.953	.0165	.1877	.1290	.0041

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0121	.1377	.1076
SDev	.0001	.0009	.0011
%RSD	1.251	.6824	.9922
#1	.0122	.1370	.1083
#2	.0120	.1384	.1068

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	796248	10000	--	--	--	--	--
SDev	2817.113	.0000000	--	--	--	--	--
%RSD	.3537985	.0000000	--	--	--	--	--
#1	798240	10000	--	--	--	--	--
#2	794256	10000	--	--	--	--	--

Method: DAILY1 Sample Name: CRI Operator:
Run Time: 02/05/16 20:23:31
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0079	.1099	L.0001	H.0956	.0057	.0061	L.0073
SDev	.0009	.0094	.0060	.0002	.0001	.0001	.0021
%RSD	11.48	8.565	6227.	.1990	1.478	.9703	29.46
#1	.0086	.1032	L.0044	H.0955	.0058	.0061	L.0088
#2	.0073	.1165	L-.0042	H.0958	.0057	.0061	L.0058
Errors	LC Pass	LC Pass	LC Low	LC High	LC Pass	LC Pass	LC Low
High	.0150	.1500	.0150	.0600	.0075	.0075	.0300
Low	.0050	.0500	.0050	.0200	.0025	.0025	.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1008	.0050	.0046	.0075	.0033	H.1544	.2847
SDev	.0002	.0002	.0001	.0000	.0006	.0068	.0362
%RSD	.2049	3.120	1.444	.3997	16.63	4.401	12.71
#1	.1006	.0049	.0047	.0075	.0030	H.1592	.2591
#2	.1009	.0051	.0046	.0074	.0037	.1496	.3103
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	.1500	.0075	.0075	.0075	.0075	.1500	.7500
Low	.0500	.0025	.0025	.0025	.0025	.0500	.2500

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0095	.0105	.0485	.0056	H.0080	.2904	L.1089
SDev	.0004	.0001	.0006	.0001	.0009	.0053	.3484
%RSD	3.950	.8949	1.295	.8697	11.05	1.840	319.9
#1	.0093	.0105	.0489	.0056	H.0087	.2866	L-.1375
#2	.0098	.0106	.0480	.0056	.0074	.2941	.3553
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Low
High	.0150	.0150	.1000	.0075	.0075	.5000	.5000
Low	.0050	.0050	.0250	.0025	.0025	.1250	.1250

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0056	.0605	-.0145	.0146	.0155	.0654	.0239
SDev	.0003	.0002	.0003	.0013	.0009	.0062	.0022
%RSD	5.303	.3534	2.180	8.745	5.688	9.427	9.427
#1	.0058	.0604	-.0143	.0155	.0161	.0697	.0255
#2	.0054	.0607	-.0148	.0137	.0149	.0610	.0223
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	.0075	.0750			.0300	.0750	.0300
Low	.0025	.0250			.0100	.0250	.0100

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	100.6	-.0148	.0264	H.6312	.0049	.0126	.0121
SDev	1.3	.0076	.0046	.0082	.0010	.0056	.0018
%RSD	1.252	51.57	17.33	1.295	19.59	44.10	14.52
#1	101.5	-.0202	.0231	H.6255	.0056	.0087	.0133
#2	99.72	-.0094	.0296	H.6370	.0042	H.0166	.0108
Errors	NOCHECK	NOCHECK	NOCHECK	LC High	LC Pass	LC Pass	LC Pass
High				.1500	.0075	.0150	.0150
Low				.0500	.0025	.0050	.0050

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0052	H.0339	.0042	L-.0003	.2182	H.0081	.0267
SDev	.0000	.0034	.0004	.0030	.0095	.0003	.0041
%RSD	.6194	10.02	10.37	1091.	4.369	4.275	15.52
#1	.0051	H.0363	.0045	L-.0024	.2250	H.0083	.0296
#2	.0052	H.0315	.0039	L.0018	.2115	H.0079	.0238

Errors	LC Pass	LC High	LC Pass	LC Low	LC Pass	LC High	LC Pass
High	.0075	.0300	.0075	.0300	.3000	.0075	.0300
Low	.0025	.0100	.0025	.0100	.1000	.0025	.0100

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0059	.0047	H.0090
SDev	.0000	.0002	.0007
%RSD	.1636	5.000	8.022
#1	.0059	.0045	H.0095
#2	.0059	.0049	H.0085

Errors	LC Pass	LC Pass	LC High
High	.0075	.0075	.0075
Low	.0025	.0025	.0025

010352

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	805418	10000	--	--	--	--	--
SDev	10112.33	.0000000	--	--	--	--	--
%RSD	1.255538	.0000000	--	--	--	--	--
#1	812569	10000	--	--	--	--	--
#2	798268	10000	--	--	--	--	--

Method: DAILY1 Sample Name: CRI-N Operator:
Run Time: 02/05/16 20:28:46
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0176	.2177	L.0136	H.1607	.0106	.0122	L.0240
SDev	.0009	.0025	.0100	.0014	.0001	.0000	.0056
%RSD	5.025	1.156	73.84	.8493	1.010	.3400	23.15
#1	.0183	.2159	L.0065	H.1597	.0105	.0122	L.0201
#2	.0170	.2195	.0206	H.1617	.0107	.0122	L.0279
Errors	LC Pass	LC Pass	LC Low	LC High	LC Pass	LC Pass	LC Low
High	.0260	.2600	.0260	.1040	.0130	.0130	.0520
Low	.0140	.1400	.0140	.0560	.0070	.0070	.0280

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2025	.0101	.0094	.0117	.0079	.2440	L.5726
SDev	.0000	.0001	.0003	.0002	.0003	.0138	.0274
%RSD	.0050	1.396	3.050	2.037	4.398	5.636	4.778
#1	.2025	.0100	.0096	.0115	.0076	.2343	L.5532
#2	.2025	.0102	.0092	.0118	.0081	.2537	L.5919
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low
High	.2600	.0130	.0130	.0130	.0130	.2600	1.300
Low	.1400	.0070	.0070	.0070	.0070	.1400	.7000

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0193	.0214	.0940	.0107	H.0135	.5630	L.2168
SDev	.0011	.0001	.0035	.0000	.0019	.0020	.5013
%RSD	5.530	.5855	3.696	.4052	14.05	.3603	231.2
#1	.0185	.0213	.0916	.0106	.0122	.5615	L-.1377
#2	.0200	.0215	.0965	.0107	H.0148	.5644	.5712
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Low
High	.0260	.0260	.1300	.0130	.0130	.6500	.6500
Low	.0140	.0140	.0700	.0070	.0070	.3500	.3500

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0107	.1045	-.0048	.0187	.0349	.1133	.0337
SDev	.0007	.0108	.0019	.0022	.0000	.0056	.0037
%RSD	6.441	10.30	39.37	11.88	.0407	4.894	11.11
#1	.0102	.1121	-.0034	.0171	.0349	.1173	.0310
#2	.0111	.0969	-.0061	.0202	.0349	.1094	.0363
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	.0130	.1300			.0520	.1300	.0520
Low	.0070	.0700			.0280	.0700	.0280

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

010354

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	100.6	.0010	.0352	H.9090	.0108	.0238	.0204
SDev	.3	.0147	.0001	.0044	.0008	.0049	.0046
%RSD	.2503	1432.	.1437	.4900	7.840	20.75	22.62
#1	100.8	.0114	.0352	H.9121	.0102	H.0273	.0236
#2	100.4	-.0094	.0351	H.9058	.0114	.0203	.0171
Errors	NOCHECK	NOCHECK	NOCHECK	LC High	LC Pass	LC Pass	LC Pass
High				.2600	.0130	.0260	.0260
Low				.1400	.0070	.0140	.0140

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0104	.0515	.0085	L.0266	.3929	.0120	.0465
SDev	.0001	.0014	.0000	.0122	.0193	.0004	.0003
%RSD	.8091	2.661	.2829	45.75	4.909	3.742	.6723
#1	.0103	.0506	.0085	.0352	.3793	.0117	.0462
#2	.0105	H.0525	.0085	L.0180	.4066	.0123	.0467
Errors	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass	LC Pass
High	.0130	.0520	.0130	.0520	.5200	.0130	.0520
Low	.0070	.0280	.0070	.0280	.2800	.0070	.0280

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0107	.0099	H.0133
SDev	.0001	.0005	.0005
%RSD	.7801	4.819	3.652
#1	.0107	.0102	.0129
#2	.0108	.0096	H.0136
Errors	LC Pass	LC Pass	LC High
High	.0130	.0130	.0130
Low	.0070	.0070	.0070

010355

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	805496	10000	--	--	--	--	--
SDev	1979.192	.0000000	--	--	--	--	--
%RSD	.2457111	.0000000	--	--	--	--	--
#1	806895	10000	--	--	--	--	--
#2	804096	10000	--	--	--	--	--

Method: DAILY1 Sample Name: ICSA Operator:
Run Time: 02/05/16 20:34:00
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0050	495.8	-.0112	.1034	.0029	.0001	-.0186
SDev	.0000	2.5	.0030	.0003	.0001	.0000	.0012
%RSD	.1880	.5127	26.45	.2398	3.363	62.42	6.512
#1	-.0050	497.6	-.0133	.1032	.0030	.0000	-.0178
#2	-.0050	494.0	-.0091	.1036	.0029	.0001	-.0195
Errors	NOCHECK	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High		600.0					
Low		400.0					

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	452.2	-.0005	-.0022	.0010	.0010	198.4	-.0062
SDev	2.1	.0001	.0004	.0006	.0014	2.2	.0205
%RSD	.4556	27.97	19.77	62.72	136.8	1.095	330.4
#1	453.7	-.0004	-.0019	.0014	.0020	200.0	-.0207
#2	450.8	-.0006	-.0025	.0005	.0000	196.9	.0083
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	NOCHECK
High	600.0					240.0	
Low	400.0					160.0	

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0035	.0020	521.2	.0195	-.0025	.1166	-.2864
SDev	.0005	.0000	3.2	.0002	.0007	.0056	.0363
%RSD	13.09	.8530	.6065	.8534	26.48	4.787	12.68
#1	-.0038	.0020	523.4	.0196	-.0029	.1127	-.3121
#2	-.0032	.0020	519.0	.0194	-.0020	.1206	-.2608
Errors	NOCHECK	NOCHECK	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High			600.0				
Low			400.0				

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0028	-.0127	-.0826	.0308	-.0011	-.0024	-.0056
SDev	.0006	.0031	.0010	.0081	.0029	.0002	.0033
%RSD	22.04	24.64	1.158	26.27	267.8	8.373	58.46
#1	.0032	-.0149	-.0833	.0365	.0010	-.0025	-.0080
#2	.0024	-.0105	-.0819	.0251	-.0032	-.0022	-.0033
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	88.73	-.0360	.0112	.8141	-.0070	-.0046	-.0001
SDev	.16	.0065	.0139	.0022	.0051	.0071	.0040
%RSD	.1853	17.96	124.5	.2745	72.35	155.4	2842.
#1	88.84	-.0406	.0210	.8157	-.0034	.0004	-.0029
#2	88.61	-.0315	.0013	.8125	-.0106	-.0096	.0027
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0074	-.0444	.0033	.4139	.0410	.0061	.0043
SDev	.0000	.0049	.0001	.0263	.0088	.0001	.0040
%RSD	.2600	11.02	1.771	6.366	21.40	.8946	92.51
#1	.0075	-.0478	.0032	.3953	.0472	.0061	.0015
#2	.0074	-.0409	.0033	.4325	.0348	.0060	.0071
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0036	-.0035	.0045
SDev	.0001	.0001	.0004
%RSD	1.588	3.719	9.828
#1	.0036	-.0035	.0048
#2	.0037	-.0036	.0042
Errors	NOCHECK	NOCHECK	NOCHECK
High			
Low			

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	710506	10000	--	--	--	--	--
SDev	1280.570	.0000000	--	--	--	--	--
%RSD	.1802334	.0000000	--	--	--	--	--
#1	711412	10000	--	--	--	--	--
#2	709601	10000	--	--	--	--	--

Analysis Report 02/05/16 08:44:16 PM

Method: DAILY1 Sample Name: ICSAB Operator:
Run Time: 02/05/16 20:39:19
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.126	490.1	1.101	1.152	.5375	H.6105	-.0235
SDev	.004	3.8	.000	.000	.0033	.0246	.0045
%RSD	.3366	.7706	.0089	.0022	.6151	4.031	19.18
#1	1.129	492.8	1.101	1.152	.5398	H.6279	-.0203
#2	1.124	487.4	1.102	1.152	.5351	.5931	-.0267
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	NOCHECK
High	1.200	600.0	1.200	1.200	.6000	.6000	
Low	.8000	400.0	.8000	.8000	.4000	.4000	

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	450.5	1.051	.5097	.5056	.5366	197.8	-.0306
SDev	2.5	.005	.0050	.0040	.0017	2.4	.0119
%RSD	.5619	.5013	.9838	.7834	.3138	1.233	38.99
#1	452.3	1.055	.5132	.5084	.5378	199.5	-.0390
#2	448.7	1.048	.5061	.5028	.5354	196.0	-.0222
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK
High	600.0	1.200	.6000	.6000	.6000	240.0	
Low	400.0	.8000	.4000	.4000	.4000	160.0	

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0046	1.194	521.1	.5442	1.066	.0617	-.4426
SDev	.0009	.007	4.4	.0046	.001	.0053	.1224
%RSD	19.21	.5650	.8476	.8512	.0979	8.579	27.66
#1	-.0040	1.198	524.2	.5475	1.067	.0580	-.5292
#2	-.0052	1.189	518.0	.5410	1.065	.0655	-.3561
Errors	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK	NOCHECK
High		1.200	600.0	.6000	1.200		
Low		.8000	400.0	.4000	.8000		

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9945	.9894	.9306	1.039	-.0029	.0116	1.122
SDev	.0070	.0244	.0186	.014	.0015	.0312	.009
%RSD	.7044	2.463	2.000	1.323	50.13	269.5	.8161
#1	.9994	1.007	.9438	1.049	-.0040	.0336	1.129
#2	.9895	.9721	.9174	1.029	-.0019	-.0105	1.116
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass
High	1.200	1.200					1.200
Low	.8000	.8000					.8000

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	90.50	1.078	1.110	1.449	1.002	1.098	1.040
SDev	.96	.010	.018	.018	.015	.015	.005
%RSD	1.058	.8983	1.600	1.252	1.533	1.370	.4421
#1	89.83	1.085	1.122	1.462	1.013	1.109	1.044
#2	91.18	1.071	1.097	1.436	.9912	1.088	1.037
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					1.200	1.200	1.200
Low					.8000	.8000	.8000

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.067	-.0400	1.023	H1.492	1.064	.5316	.0150
SDev	.007	.0049	.002	.032	.006	.0039	.0067
%RSD	.6399	12.22	.1863	2.140	.5670	.7317	44.67
#1	1.072	-.0434	1.024	H1.470	1.068	.5343	.0103
#2	1.063	-.0365	1.021	H1.515	1.059	.5288	.0198
Errors	LC Pass	NOCHECK	LC Pass	LC High	NOCHECK	LC Pass	NOCHECK
High	1.200		1.200	1.200		.6000	
Low	.8000		.8000	.8000		.4000	

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0036	1.054	.9424
SDev	.0001	.008	.0043
%RSD	4.272	.7256	.4576
#1	.0035	1.059	.9394
#2	.0037	1.048	.9455
Errors	NOCHECK	LC Pass	NOCHECK
High		1.200	
Low		.8000	

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	724662	10000	--	--	--	--	--
SDev	7649.481	.0000000	--	--	--	--	--
%RSD	1.055593	.0000000	--	--	--	--	--
#1	719253	10000	--	--	--	--	--
#2	730071	10000	--	--	--	--	--

Method: DAILY1 Sample Name: CCV Operator:
Run Time: 02/05/16 20:44:34
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.040	10.19	5.291	5.228	10.02	H1.101	5.062
SDev	.001	.01	.040	.001	.08	.042	.089
%RSD	.0489	.1445	.7513	.0226	.8290	3.795	1.751
#1	1.040	10.20	5.319	5.227	10.08	H1.130	5.125
#2	1.040	10.18	5.262	5.229	9.965	1.071	4.999
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	1.100	11.00	5.500	5.500	11.00	1.100	5.500
Low	.9000	9.000	4.500	4.500	9.000	.9000	4.500

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.20	1.067	5.190	2.018	2.005	10.09	19.04
SDev	.00	.009	.016	.003	.001	.00	.01
%RSD	.0133	.8883	.3010	.1594	.0603	.0364	.0415
#1	20.20	1.074	5.179	2.015	2.004	10.09	19.04
#2	20.19	1.060	5.201	2.020	2.006	10.10	19.03
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.00	1.100	5.500	2.200	2.200	11.00	22.00
Low	18.00	.9000	4.500	1.800	1.800	9.000	18.00

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.002	5.383	20.25	1.044	4.981	H38.29	29.92
SDev	.024	.003	.00	.003	.032	.16	.91
%RSD	.4864	.0590	.0171	.3056	.6410	.4216	3.042
#1	5.019	5.381	20.25	1.042	5.003	H38.18	30.57
#2	4.985	5.386	20.24	1.046	4.958	H38.41	29.28
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	5.500	5.500	22.00	1.100	5.500	33.00	33.00
Low	4.500	4.500	18.00	.9000	4.500	27.00	27.00

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.011	4.835	5.016	5.052	.9771	1.041	1.020
SDev	.008	.064	.005	.085	.0010	.039	.033
%RSD	.1636	1.328	.1069	1.681	.1030	3.761	3.231
#1	5.017	4.881	5.019	4.992	.9778	1.069	1.044
#2	5.005	4.790	5.012	5.112	.9764	1.013	.9972
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	5.500	5.500			1.100	1.100	1.100
Low	4.500	4.500			.9000	.9000	.9000

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	98.57	5.369	5.376	4.973	5.035	5.368	5.107
SDev	.45	.001	.061	.007	.055	.041	.008
%RSD	.4565	.0105	1.135	.1442	1.088	.7606	.1615
#1	98.89	5.369	5.332	4.978	4.996	5.339	5.112
#2	98.25	5.369	5.419	4.968	5.073	5.397	5.101
Errors	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass
High				5.500	5.500	5.500	5.500
Low				4.500	4.500	4.500	4.500

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.050	1.034	4.970	5.334	5.102	5.205	1.094
SDev	.019	.003	.015	.093	.147	.003	.005
%RSD	.3818	.2779	.2972	1.749	2.874	.0597	.4422
#1	5.064	1.036	4.981	5.400	5.206	5.203	1.097
#2	5.036	1.032	4.960	5.268	4.998	5.207	1.091
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.500	1.100	5.500	5.500	5.500	5.500	1.100
Low	4.500	.9000	4.500	4.500	4.500	4.500	.9000

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	5.080	1.071	5.093
SDev	.008	.002	.011
%RSD	.1628	.1450	.2112
#1	5.086	1.072	5.101
#2	5.074	1.070	5.085
Errors	LC Pass	LC Pass	LC Pass
High	5.500	1.100	5.500
Low	4.500	.9000	4.500

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	789184	10000	--	--	--	--	--
SDev	3626.751	.0000000	--	--	--	--	--
%RSD	.4595573	.0000000	--	--	--	--	--
#1	791748	10000	--	--	--	--	--
#2	786619	10000	--	--	--	--	--

Method: DAILY1 Sample Name: CCB Operator:
Run Time: 02/05/16 20:49:50
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0032	-.0162	L-.0066	.0113	.0007	.0000	-.0073
SDev	.0008	.0081	.0021	.0048	.0000	.0000	.0119
%RSD	24.26	49.86	32.51	42.99	1.619	24.65	164.3
#1	-.0037	-.0105	L-.0081	.0147	.0007	.0001	.0012
#2	-.0026	-.0219	L-.0050	.0078	.0007	.0000	L-.0157
Errors	LC Pass	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass
High	.0050	.0500	.0050	.0500	.0050	.0050	.0100
Low	-.0050	-.0500	-.0050	-.0500	-.0050	-.0050	-.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0016	-.0003	-.0007	.0020	-.0015	.0439	-.0244
SDev	.0002	.0000	.0001	.0003	.0000	.0025	.0229
%RSD	10.37	16.21	7.961	12.67	1.666	5.640	94.02
#1	.0017	-.0003	-.0006	.0018	-.0015	.0421	-.0406
#2	.0015	-.0003	-.0007	.0021	-.0015	.0457	-.0082
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0500	.0050	.0050	.0050	.0050	.0500	.1000
Low	-.0500	-.0050	-.0050	-.0050	-.0050	-.0500	-.1000

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0017	.0005	-.0053	.0004	.0033	-.0055	L-.1201
SDev	.0010	.0001	.0040	.0000	.0008	.0061	.1146
%RSD	55.85	12.75	75.24	.5921	24.70	109.9	95.45
#1	-.0011	.0004	-.0025	.0004	.0027	-.0098	L-.2011
#2	-.0024	.0005	-.0081	.0004	.0039	-.0012	-.0390
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low
High	.0050	.0050	.0500	.0050	.0050	.0500	.0500
Low	-.0050	-.0050	-.0500	-.0050	-.0050	-.0500	-.0500

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0001	-.0072	-.0173	.0086	L-.0060	.0079	-.0058
SDev	.0002	.0038	.0037	.0000	.0023	.0135	.0010
%RSD	317.4	52.28	21.40	.4679	38.18	170.5	16.93
#1	.0002	-.0045	-.0199	.0086	-.0044	-.0016	-.0051
#2	-.0001	-.0098	-.0147	.0085	L-.0076	.0174	-.0065
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Low	LC Pass	LC Pass
High	.0050	.0200			.0050	.0200	.0100
Low	-.0050	-.0200			-.0050	-.0200	-.0100

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	99.83	-.0265	.0214	L-.0111	-.0001	H.0054	.0019
SDev	.41	.0048	.0052	.0017	.0012	.0018	.0043
%RSD	.4154	18.20	24.17	15.31	1692.	33.81	221.6
#1	99.53	-.0300	.0251	-.0099	-.0009	H.0067	.0050
#2	100.1	-.0231	.0178	L-.0123	.0008	.0041	-.0011
Errors	NOCHECK	NOCHECK	NOCHECK	LC Low	LC Pass	LC High	LC Pass
High				.0100	.0050	.0050	.0100
Low				-.0100	-.0050	-.0050	-.0100

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0002	H.0153	-.0013	L-.0275	-.0146	.0028	.0053
SDev	.0000	.0031	.0001	.0056	.0287	.0002	.0004
%RSD	23.05	19.92	4.496	20.43	197.0	7.807	8.088
#1	-.0001	H.0174	-.0013	L-.0235	.0057	.0027	.0050
#2	-.0002	H.0131	-.0013	L-.0315	-.0349	.0030	.0056
Errors	LC Pass	LC High	LC Pass	LC Low	LC Pass	LC Pass	LC Pass
High	.0050	.0100	.0050	.0100	.1000	.0050	.0100
Low	-.0050	-.0100	-.0050	-.0100	-.1000	-.0050	-.0100

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0006	-.0005	.0031
SDev	.0002	.0004	.0001
%RSD	29.21	72.86	2.005
#1	.0005	-.0002	.0031
#2	.0008	-.0007	.0032
Errors	LC Pass	LC Pass	LC Pass
High	.0050	.0050	.0050
Low	-.0050	-.0050	-.0050

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	799206	10000	--	--	--	--	--
SDev	3325.523	.0000000	--	--	--	--	--
%RSD	.4161031	.0000000	--	--	--	--	--
#1	796855	10000	--	--	--	--	--
#2	801558	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 588049TF Operator:
Run Time: 02/05/16 20:55:06
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0032	219.0	.2881	.0797	129.3	.0111	-.0161
SDev	.0003	1.2	.0051	.0006	.1	.0000	.0040
%RSD	10.79	.5493	1.785	.7291	.0946	.1935	24.63
#1	-.0035	219.8	.2918	.0793	129.4	.0111	-.0189
#2	-.0030	218.1	.2845	.0801	129.3	.0111	-.0133

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	249.7	.0152	4.747	.2537	3.116	123.1	66.96
SDev	.7	.0001	.036	.0020	.002	1.1	.18
%RSD	.2697	.8214	.7683	.7807	.0786	.8649	.2661
#1	250.2	.0153	4.773	.2551	3.118	123.8	66.84
#2	249.2	.0151	4.721	.2523	3.114	122.3	67.09

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2008	.1367	58.38	3.386	1.193	57.97	41.23
SDev	.0006	.0004	.47	.027	.007	.06	.34
%RSD	.2993	.2942	.8003	.7841	.5999	.0954	.8278
#1	.2004	.1364	58.71	3.405	1.188	57.93	40.99
#2	.2012	.1370	58.05	3.367	1.198	58.01	41.47

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	6.342	4.328	20.48	20.04	.0008	24.42	.0080
SDev	.008	.003	.06	.32	.0021	.01	.0061
%RSD	.1320	.0676	.3015	1.589	276.1	.0270	76.71
#1	6.348	4.325	20.44	19.82	.0023	24.43	.0036
#2	6.336	4.330	20.53	20.27	-.0007	24.42	.0123

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	92.38	.5400	.5669	.5115	20.17	.5574	.0502
SDev	.25	.0028	.0039	.0002	.23	.0035	.0056
%RSD	.2706	.5195	.6822	.0439	1.154	.6297	11.04
#1	92.56	.5380	.5642	.5113	20.01	.5549	.0542
#2	92.21	.5419	.5697	.5116	20.33	.5599	.0463

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.313	.6912	15.11	.2744	5.770	1.664	.0354
SDev	.001	.0125	.03	.0091	.002	.011	.0058
%RSD	.0270	1.810	.1836	3.313	.0292	.6653	16.40
#1	5.314	.7001	15.13	.2680	5.772	1.672	.0395
#2	5.312	.6824	15.09	.2808	5.769	1.657	.0313

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.1410	.8852	.9449
SDev	.0004	.0061	.0005
%RSD	.3104	.6866	.0575
#1	.1413	.8895	.9453
#2	.1407	.8809	.9445

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	739726	10000	--	--	--	--	--
SDev	1977.071	.0000000	--	--	--	--	--
%RSD	.2672706	.0000000	--	--	--	--	--
#1	741124	10000	--	--	--	--	--
#2	738328	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 588556TF Operator:
Run Time: 02/05/16 21:00:25
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0007	249.5	.3292	.0964	153.2	.0144	-.0092
SDev	.0013	1.3	.0159	.0011	.5	.0002	.0045
%RSD	174.9	.5262	4.844	1.146	.3522	1.537	49.56
#1	.0002	248.5	.3405	.0971	152.8	.0142	-.0060
#2	-.0016	250.4	.3179	.0956	153.5	.0146	-.0124

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	528.1	.0176	9.299	.3823	6.220	168.6	71.26
SDev	4.5	.0003	.091	.0045	.015	2.1	.23
%RSD	.8602	1.804	.9814	1.166	.2413	1.246	.3161
#1	524.9	.0178	9.234	.3791	6.230	167.1	71.10
#2	531.3	.0174	9.363	.3854	6.209	170.1	71.42

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.3703	.2518	97.10	6.942	1.195	46.50	32.38
SDev	.0024	.0003	1.59	.061	.000	.13	1.51
%RSD	.6519	.1380	1.635	.8737	.0051	.2865	4.679
#1	.3720	.2516	95.98	6.899	1.195	46.41	31.31
#2	.3686	.2520	98.22	6.985	1.195	46.59	33.45

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	11.88	4.607	24.76	24.88	-.0028	37.10	.0221
SDev	.18	.048	.40	.26	.0052	.12	.0072
%RSD	1.541	1.039	1.607	1.062	186.8	.3145	32.54
#1	11.75	4.573	24.48	24.69	-.0064	37.19	.0272
#2	12.01	4.641	25.04	25.07	.0009	37.02	.0171

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	90.39	.4812	.5296	.6645	24.82	.5130	.2002
SDev	.27	.0092	.0309	.0176	.31	.0175	.0024
%RSD	.3038	1.922	5.843	2.655	1.243	3.418	1.225
#1	90.58	.4877	.5077	.6520	24.60	.5006	.1984
#2	90.19	.4746	.5515	.6770	25.04	.5254	.2019

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	11.00	.5666	16.69	.4024	4.587	1.967	.0475
SDev	.05	.0053	.01	.0003	.021	.016	.0037
%RSD	.4482	.9367	.0317	.0654	.4660	.8230	7.717
#1	11.03	.5628	16.69	.4022	4.602	1.956	.0501
#2	10.96	.5703	16.70	.4025	4.572	1.978	.0449

010371

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.1779	1.772	.9125
SDev	.0003	.024	.0040
%RSD	.1635	1.353	.4430
#1	.1781	1.755	.9153
#2	.1776	1.789	.9096

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	723746	10000	--	--	--	--	--
SDev	2180.010	.0000000	--	--	--	--	--
%RSD	.3012123	.0000000	--	--	--	--	--
#1	725287	10000	--	--	--	--	--
#2	722204	10000	--	--	--	--	--

Analysis Report 02/05/16 09:10:39 PM page 1

Method: DAILY1 Sample Name: 588556TFD Operator:
Run Time: 02/05/16 21:05:42
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0029	254.8	.3580	.1048	136.7	.0145	-.0091
SDev	.0001	.5	.0080	.0004	.2	.0000	.0011
%RSD	4.662	.2093	2.238	.3627	.1740	.1765	12.16
#1	-.0030	254.4	.3524	.1051	136.6	.0145	-.0098
#2	-.0028	255.1	.3637	.1046	136.9	.0146	-.0083

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	500.8	.0181	9.737	.3812	6.550	167.7	74.09
SDev	.1	.0001	.017	.0011	.000	1.0	.31
%RSD	.0208	.4765	.1785	.2871	.0010	.5705	.4146
#1	500.8	.0180	9.724	.3804	6.550	167.0	73.87
#2	500.9	.0182	9.749	.3819	6.550	168.4	74.31

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.3532	.2546	92.50	6.691	1.214	48.85	33.70
SDev	.0012	.0009	.43	.020	.001	.20	.10
%RSD	.3467	.3578	.4659	.3038	.0493	.4083	.3025
#1	.3524	.2540	92.20	6.677	1.213	48.71	33.63
#2	.3541	.2553	92.81	6.706	1.214	48.99	33.78

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	12.73	4.648	22.16	22.09	-.0056	36.76	.0226
SDev	.00	.024	.19	.20	.0031	.07	.0057
%RSD	.0001	.5139	.8482	.9058	56.21	.1893	25.34
#1	12.73	4.631	22.29	21.95	-.0034	36.71	.0185
#2	12.73	4.665	22.03	22.23	-.0078	36.81	.0266

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	91.79	.5180	.5349	.7517	22.09	.5287	.1517
SDev	.07	.0047	.0089	.0101	.07	.0075	.0067
%RSD	.0801	.9064	1.667	1.351	.3200	1.419	4.451
#1	91.84	.5213	.5412	.7445	22.04	.5340	.1469
#2	91.74	.5146	.5286	.7589	22.14	.5234	.1564

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	9.857	.5405	17.22	.3863	4.793	2.015	.0352
SDev	.008	.0043	.00	.0124	.015	.004	.0037
%RSD	.0789	.7881	.0228	3.218	.3115	.1741	10.43
#1	9.851	.5435	17.22	.3951	4.804	2.012	.0326
#2	9.862	.5375	17.21	.3775	4.783	2.017	.0378

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.1823	1.790	.9333
SDev	.0001	.014	.0004
%RSD	.0616	.7806	.0411
#1	.1822	1.780	.9336
#2	.1824	1.800	.9330

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	734948	10000	--	--	--	--	--
SDev	628.6179	.0000000	--	--	--	--	--
%RSD	.0855324	.0000000	--	--	--	--	--
#1	735392	10000	--	--	--	--	--
#2	734503	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 588556TFL DF5 Operator:
Run Time: 02/05/16 21:10:57
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0015	50.50	.0552	.0022	43.05	.0029	-.0124
SDev	.0029	.02	.0010	.0019	.15	.0001	.0094
%RSD	198.7	.0299	1.892	90.21	.3460	1.731	75.90
#1	.0006	50.51	.0560	.0035	43.16	.0030	-.0057
#2	-.0035	50.49	.0545	.0008	42.94	.0029	-.0190

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	119.9	.0037	1.919	.0803	1.214	34.63	11.11
SDev	.4	.0003	.009	.0006	.006	.18	.05
%RSD	.3569	8.848	.4536	.7495	.5019	.5145	.4474
#1	120.2	.0039	1.925	.0808	1.218	34.76	11.08
#2	119.6	.0034	1.913	.0799	1.209	34.51	11.15

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0737	.0540	20.03	1.437	.2409	8.033	5.802
SDev	.0032	.0003	.10	.005	.0007	.020	.007
%RSD	4.414	.5098	.5196	.3739	.3019	.2458	.1281
#1	.0760	.0542	20.10	1.441	.2414	8.019	5.796
#2	.0714	.0538	19.95	1.433	.2404	8.047	5.807

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.468	.9096	5.114	5.064	-.0050	7.290	.0009
SDev	.026	.0016	.044	.012	.0031	.051	.0045
%RSD	1.060	.1748	.8564	.2440	62.09	.7065	472.9
#1	2.450	.9085	5.145	5.073	-.0028	7.253	.0041
#2	2.487	.9107	5.083	5.056	-.0071	7.326	-.0022

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	96.11	.0856	.1224	-.0107	5.076	.1100	.0414
SDev	.46	.0055	.0042	.0077	.023	.0010	.0051
%RSD	.4831	6.395	3.466	71.88	.4495	.9104	12.29
#1	95.78	.0895	.1194	-.0053	5.092	.1093	.0450
#2	96.44	.0817	.1254	-.0161	5.060	.1107	.0378

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.344	.1238	3.345	.0640	.9129	.4003	.0049
SDev	.003	.0002	.007	.0062	.0323	.0016	.0029
%RSD	.1254	.1742	.1952	9.709	3.534	.4077	58.66
#1	2.346	.1236	3.349	.0684	.9357	.4014	.0069
#2	2.342	.1239	3.340	.0596	.8900	.3991	.0029

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0363	.3637	.1856
SDev	.0001	.0029	.0003
%RSD	.1259	.7890	.1904
#1	.0363	.3657	.1854
#2	.0364	.3616	.1859

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	769508	10000	--	--	--	--	--
SDev	3770.294	.0000000	--	--	--	--	--
%RSD	.4899616	.0000000	--	--	--	--	--
#1	766842	10000	--	--	--	--	--
#2	772174	10000	--	--	--	--	--

Analysis Report 02/05/16 09:21:13 PM

Method: DAILY1 Sample Name: 588556TFMS3 Operator:
Run Time: 02/05/16 21:16:13
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0222	261.1	1.388	.1098	148.4	.0435	-.0205
SDev	.0004	.9	.010	.0016	.3	.0002	.0029
%RSD	1.939	.3262	.7077	1.421	.2010	.3731	14.25
#1	.0219	260.5	1.381	.1087	148.2	.0436	-.0225
#2	.0225	261.7	1.395	.1109	148.6	.0434	-.0184

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	460.3	.0415	9.911	.4704	6.630	169.4	85.15
SDev	.5	.0005	.009	.0020	.010	.1	.17
%RSD	.1066	1.238	.0944	.4274	.1464	.0872	.2053
#1	460.7	.0419	9.917	.4690	6.637	169.2	85.03
#2	460.0	.0412	9.904	.4718	6.623	169.5	85.28

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.3486	.2613	100.3	7.048	1.243	63.94	44.15
SDev	.0017	.0001	.0	.002	.002	.13	.46
%RSD	.4959	.0189	.0350	.0263	.1679	.2079	1.046
#1	.3474	.2613	100.3	7.046	1.245	64.03	43.82
#2	.3498	.2612	100.3	7.049	1.242	63.84	44.47

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	12.78	5.589	21.51	21.53	-.0025	36.28	.2859
SDev	.02	.024	.04	.19	.0026	.05	.0045
%RSD	.1463	.4273	.1983	.8807	101.5	.1353	1.562
#1	12.76	5.606	21.54	21.67	-.0007	36.32	.2890
#2	12.79	5.572	21.48	21.40	-.0043	36.25	.2827

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	90.75	1.531	1.592	.8117	21.50	1.570	.1569
SDev	.08	.008	.024	.0047	.14	.014	.0016
%RSD	.0844	.5218	1.538	.5737	.6533	.8694	1.012
#1	90.70	1.526	1.609	.8084	21.60	1.580	.1580
#2	90.80	1.537	1.575	.8150	21.41	1.560	.1558

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	8.972	.5630	17.45	1.418	4.795	2.258	.0341
SDev	.009	.0046	.02	.005	.019	.000	.0117
%RSD	.1008	.8112	.1115	.3521	.4062	.0062	34.38
#1	8.979	.5662	17.47	1.414	4.781	2.258	.0258
#2	8.966	.5597	17.44	1.421	4.809	2.258	.0423

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.1834	2.023	.9498
SDev	.0001	.000	.0017
%RSD	.0560	.0044	.1836
#1	.1833	2.023	.9486
#2	.1835	2.023	.9511

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	726641	10000	--	--	--	--	--
SDev	581.2418	.0000000	--	--	--	--	--
%RSD	.0799902	.0000000	--	--	--	--	--
#1	726230	10000	--	--	--	--	--
#2	727052	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 588556TFMS4 Operator:
Run Time: 02/05/16 21:21:32
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1240	266.2	.4927	.1165	135.9	.1600	.1003
SDev	.0002	.0	.0120	.0001	.7	.0019	.0015
%RSD	.1612	.0046	2.428	.0457	.4874	1.180	1.495
#1	.1242	266.1	.4842	.1164	136.4	.1614	.1014
#2	.1239	266.2	.5011	.1165	135.5	.1587	.0993

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	520.9	.1448	10.07	.5156	6.793	173.6	78.34
SDev	1.8	.0008	.01	.0001	.017	.4	.27
%RSD	.3369	.5595	.0613	.0197	.2434	.2409	.3424
#1	522.1	.1454	10.07	.5157	6.804	173.3	78.53
#2	519.7	.1442	10.06	.5155	6.781	173.9	78.15

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.4685	.4052	98.27	7.044	1.370	49.97	36.88
SDev	.0012	.0017	.25	.026	.007	.32	.25
%RSD	.2650	.4302	.2532	.3678	.4841	.6454	.6699
#1	.4694	.4064	98.44	7.063	1.375	50.20	37.05
#2	.4676	.4040	98.09	7.026	1.365	49.74	36.70

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	13.02	4.950	22.10	21.88	.1235	37.92	.1545
SDev	.18	.011	.25	.13	.0035	.22	.0007
%RSD	1.351	.2162	1.127	.6109	2.836	.5802	.4491
#1	13.14	4.958	22.28	21.97	.1210	37.77	.1549
#2	12.89	4.943	21.93	21.78	.1259	38.08	.1540

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	91.88	.5601	.6133	.8634	21.93	.5950	.2706
SDev	.66	.0220	.0107	.0008	.17	.0002	.0036
%RSD	.7168	3.933	1.748	.0920	.7840	.0331	1.326
#1	91.42	.5757	.6057	.8640	22.05	.5951	.2681
#2	92.35	.5445	.6209	.8629	21.81	.5949	.2732

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	10.31	.6919	17.95	.5306	4.934	2.222	.1832
SDev	.03	.0038	.02	.0418	.023	.003	.0009
%RSD	.3233	.5502	.0960	7.888	.4675	.1341	.4727
#1	10.34	.6892	17.96	.5602	4.950	2.224	.1838
#2	10.29	.6946	17.94	.5010	4.917	2.220	.1826

010379

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.3127	1.974	1.098
SDev	.0004	.002	.004
%RSD	.1311	.0993	.3758
#1	.3124	1.972	1.096
#2	.3130	1.975	1.101

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	735721	10000	--	--	--	--	--
SDev	5279.259	.0000000	--	--	--	--	--
%RSD	.7175627	.0000000	--	--	--	--	--
#1	731988	10000	--	--	--	--	--
#2	739454	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 588556TFAS Operator:
Run Time: 02/05/16 21:26:46
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0489	245.1	2.494	.0902	150.5	.0741	-.0132
SDev	.0022	.5	.005	.0010	.8	.0003	.0022
%RSD	4.393	.2113	.2045	1.092	.5346	.4234	17.02
#1	.0474	244.8	2.498	.0895	149.9	.0739	-.0116
#2	.0504	245.5	2.490	.0909	151.1	.0743	-.0148

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	528.6	.0672	9.521	.5642	6.299	164.5	92.74
SDev	1.7	.0006	.003	.0018	.029	.8	.53
%RSD	.3285	.8750	.0349	.3216	.4524	.4810	.5732
#1	527.3	.0668	9.518	.5630	6.279	163.9	92.36
#2	529.8	.0676	9.523	.5655	6.319	165.0	93.11

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.3588	.2424	114.5	7.211	1.168	77.12	53.25
SDev	.0006	.0016	.5	.018	.014	.48	.74
%RSD	.1673	.6752	.4321	.2561	1.182	.6276	1.384
#1	.3583	.2412	114.1	7.198	1.158	76.78	52.73
#2	.3592	.2436	114.8	7.225	1.178	77.46	53.78

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	12.08	4.448	24.44	24.58	-.0008	36.21	.5751
SDev	.07	.005	.12	.08	.0048	.12	.0003
%RSD	.6050	.1213	.5070	.3244	625.2	.3185	.0519
#1	12.03	4.444	24.35	24.52	-.0042	36.29	.5749
#2	12.13	4.452	24.53	24.64	.0026	36.12	.5753

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	90.52	2.620	2.686	.6576	24.51	2.662	.1937
SDev	.44	.020	.001	.0103	.09	.007	.0083
%RSD	.4913	.7540	.0299	1.573	.3850	.2672	4.292
#1	90.83	2.606	2.686	.6503	24.44	2.657	.1879
#2	90.20	2.634	2.687	.6650	24.58	2.667	.1996

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	10.61	.5457	16.24	2.451	4.428	2.420	.0369
SDev	.01	.0055	.03	.003	.011	.012	.0055
%RSD	.1179	1.008	.1657	.1158	.2395	.4837	14.93
#1	10.60	.5418	16.22	2.453	4.436	2.412	.0330
#2	10.62	.5496	16.26	2.449	4.421	2.428	.0408

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.1732	2.230	.8873
SDev	.0002	.003	.0017
%RSD	.0963	.1371	.1898
#1	.1734	2.228	.8885
#2	.1731	2.232	.8861

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	724804	10000	--	--	--	--	--
SDev	3532.706	.0000000	--	--	--	--	--
%RSD	.4874015	.0000000	--	--	--	--	--
#1	727302	10000	--	--	--	--	--
#2	722306	10000	--	--	--	--	--

Analysis Report 02/05/16 09:37:01 PM page 1

Method: DAILY1 Sample Name: 590212TF Operator:
Run Time: 02/05/16 21:32:01
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0004	142.9	.1404	.1563	104.4	.0058	-.0081
SDev	.0032	.4	.0114	.0033	.6	.0001	.0027
%RSD	842.2	.2513	8.142	2.092	.5945	1.764	33.62
#1	.0026	142.6	.1485	.1586	104.9	.0058	-.0062
#2	-.0019	143.1	.1323	.1539	104.0	.0057	-.0101

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	129.9	.0081	4.294	.1434	6.506	92.63	40.24
SDev	.2	.0005	.008	.0014	.031	.43	.30
%RSD	.1426	6.341	.1829	.9529	.4797	.4639	.7548
#1	129.8	.0085	4.288	.1424	6.528	92.32	40.45
#2	130.1	.0078	4.299	.1444	6.484	92.93	40.02

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1327	.0931	37.45	1.799	1.371	37.35	27.31
SDev	.0028	.0009	.13	.002	.004	.35	.62
%RSD	2.083	.9958	.3547	.1378	.3267	.9319	2.281
#1	.1347	.0938	37.36	1.797	1.374	37.60	27.75
#2	.1308	.0924	37.55	1.801	1.368	37.11	26.86

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	6.023	2.878	11.35	11.18	.0119	27.81	.2207
SDev	.122	.014	.01	.20	.0082	.10	.0031
%RSD	2.018	.4848	.0622	1.776	69.28	.3547	1.388
#1	6.109	2.888	11.34	11.04	.0177	27.74	.2229
#2	5.937	2.868	11.35	11.32	.0061	27.88	.2185

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	95.86	.5135	.5301	.9804	11.23	.5240	.2960
SDev	1.19	.0236	.0359	.0057	.13	.0161	.0024
%RSD	1.243	4.596	6.778	.5771	1.199	3.066	.7991
#1	95.02	.5302	.5046	.9844	11.13	.5127	.2944
#2	96.71	.4968	.5555	.9764	11.32	.5354	.2977

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.204	.5566	11.01	.2101	5.897	.7369	.0282
SDev	.013	.0192	.01	.0073	.086	.0029	.0142
%RSD	.4173	3.452	.0669	3.498	1.464	.3864	50.30
#1	3.214	.5431	11.00	.2153	5.958	.7349	.0382
#2	3.195	.5702	11.01	.2049	5.836	.7389	.0181

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0841	.8001	.8795
SDev	.0004	.0062	.0066
%RSD	.4518	.7777	.7519
#1	.0838	.7957	.8748
#2	.0844	.8045	.8842

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	767554	10000	--	--	--	--	--
SDev	9541.699	.0000000	--	--	--	--	--
%RSD	1.243131	.0000000	--	--	--	--	--
#1	760807	10000	--	--	--	--	--
#2	774301	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 590213TF Operator:
Run Time: 02/05/16 21:37:20
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0045	322.0	.0875	.1855	87.47	.0114	-.0092
SDev	.0001	1.4	.0044	.0001	.14	.0001	.0031
%RSD	1.763	.4459	5.051	.0305	.1576	.4565	33.15
#1	-.0045	321.0	.0906	.1854	87.57	.0113	-.0071
#2	-.0046	323.0	.0843	.1855	87.37	.0114	-.0114

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	663.4	.0111	1.837	.3553	15.04	130.5	114.3
SDev	1.2	.0001	.015	.0028	.04	.9	.6
%RSD	.1880	.6198	.7931	.7768	.2495	.6601	.5100
#1	662.5	.0111	1.826	.3534	15.01	129.9	113.8
#2	664.3	.0112	1.847	.3573	15.07	131.1	114.7

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.3013	.1818	128.8	4.726	.4553	92.81	63.84
SDev	.0001	.0009	.8	.040	.0025	.45	.63
%RSD	.0342	.5250	.6097	.8423	.5426	.4879	.9855
#1	.3013	.1811	128.3	4.698	.4536	92.49	63.40
#2	.3012	.1825	129.4	4.754	.4570	93.13	64.29

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.598	4.996	20.56	20.59	-.0065	38.56	.2315
SDev	.014	.037	.04	.04	.0025	.18	.0033
%RSD	.5255	.7494	.1925	.2164	37.94	.4704	1.424
#1	2.589	5.022	20.53	20.62	-.0048	38.69	.2292
#2	2.608	4.970	20.59	20.56	-.0083	38.43	.2338

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	89.45	.2170	.2678	1.694	20.56	.2507	.3533
SDev	.20	.0088	.0074	.022	.02	.0020	.0018
%RSD	.2273	4.072	2.746	1.281	.0803	.7804	.5015
#1	89.59	.2108	.2730	1.678	20.57	.2520	.3520
#2	89.30	.2233	.2626	1.709	20.55	.2493	.3545

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	9.238	.3252	19.58	.2970	2.891	.6499	.0270
SDev	.018	.0008	.00	.0216	.006	.0044	.0015
%RSD	.1915	.2351	.0139	7.269	.2247	.6714	5.721
#1	9.250	.3257	19.58	.2817	2.886	.6468	.0281
#2	9.225	.3246	19.58	.3122	2.895	.6530	.0259

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.1448	1.640	.8660
SDev	.0001	.017	.0051
%RSD	.0651	1.029	.5847
#1	.1448	1.628	.8696
#2	.1447	1.652	.8624

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	716235	10000	--	--	--	--	--
SDev	1636.245	.0000000	--	--	--	--	--
%RSD	.2284509	.0000000	--	--	--	--	--
#1	717392	10000	--	--	--	--	--
#2	715078	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 590214TF Operator:
Run Time: 02/05/16 21:42:36
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0090	462.1	.8303	.2274	43.46	.0275	-.0316
SDev	.0007	.7	.0056	.0014	.16	.0000	.0250
%RSD	7.668	.1579	.6684	.6226	.3728	.0443	78.93
#1	-.0085	462.6	.8342	.2264	43.58	.0274	-.0140
#2	-.0094	461.6	.8263	.2284	43.35	.0275	-.0493

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	334.0	.0380	12.23	.6675	7.487	272.8	175.6
SDev	.3	.0002	.04	.0014	.005	.2	.6
%RSD	.0866	.4322	.3338	.2021	.0669	.0822	.3176
#1	334.2	.0381	12.20	.6665	7.484	272.9	175.2
#2	333.8	.0379	12.25	.6684	7.491	272.6	176.0

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.3275	.2811	98.25	12.10	.7998	S83.47	93.39
SDev	.0006	.0008	.05	.00	.0008	57.55	.50
%RSD	.1712	.2765	.0532	.0046	.1027	68.94	.5392
#1	.3271	.2806	98.21	12.10	.8004	124.2	93.03
#2	.3279	.2817	98.28	12.10	.7993	S42.78	93.74

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	16.21	9.832	3.347	3.499	-.0088	20.11	.0181
SDev	.03	.086	.058	.035	.0007	.06	.0006
%RSD	.2004	.8714	1.741	1.011	7.775	.3049	3.216
#1	16.18	9.893	3.305	3.474	-.0093	20.15	.0177
#2	16.23	9.771	3.388	3.524	-.0084	20.07	.0185

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	89.79	1.054	1.100	.5386	3.445	1.084	.0223
SDev	.12	.016	.006	.0020	.043	.009	.0005
%RSD	.1297	1.496	.5327	.3783	1.247	.8448	2.287
#1	89.87	1.043	1.096	.5371	3.415	1.077	.0227
#2	89.70	1.065	1.104	.5400	3.475	1.090	.0220

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.010	.1385	35.45	.6449	25.28	4.484	.0422
SDev	.001	.0116	.08	.0239	.03	.005	.0027
%RSD	.0688	8.366	.2146	3.699	.1370	.1072	6.400
#1	2.011	.1303	35.51	.6281	25.30	4.487	.0403
#2	2.009	.1467	35.40	.6618	25.26	4.481	.0442

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.3614	1.256	3.215
SDev	.0001	.007	.015
%RSD	.0342	.5344	.4554
#1	.3615	1.252	3.226
#2	.3613	1.261	3.205

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	718934	10000	--	--	--	--	--
SDev	864.0845	.0000000	--	--	--	--	--
%RSD	.1201897	.0000000	--	--	--	--	--
#1	719545	10000	--	--	--	--	--
#2	718323	10000	--	--	--	--	--

Method: DAILY1 Sample Name: CCV Operator:
Run Time: 02/05/16 21:47:51
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.037	10.10	5.317	5.254	9.863	H1.106	5.048
SDev	.008	.02	.010	.036	.069	.068	.053
%RSD	.7785	.1904	.1956	.6769	.6958	6.192	1.057
#1	1.043	10.11	5.309	5.280	9.911	H1.154	5.086
#2	1.032	10.09	5.324	5.229	9.814	1.057	5.011
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	1.100	11.00	5.500	5.500	11.00	1.100	5.500
Low	.9000	9.000	4.500	4.500	9.000	.9000	4.500

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.11	1.071	5.171	2.019	2.001	10.01	19.13
SDev	.01	.005	.034	.003	.000	.04	.31
%RSD	.0337	.5020	.6657	.1340	.0012	.3849	1.612
#1	20.11	1.075	5.146	2.021	2.001	9.987	19.35
#2	20.12	1.067	5.195	2.018	2.001	10.04	18.91
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.00	1.100	5.500	2.200	2.200	11.00	22.00
Low	18.00	.9000	4.500	1.800	1.800	9.000	18.00

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.993	5.429	20.36	1.038	4.983	H38.35	30.11
SDev	.007	.046	.06	.002	.021	.46	1.37
%RSD	.1434	.8478	.2750	.1785	.4232	1.188	4.553
#1	4.988	5.461	20.40	1.040	4.998	H38.67	31.08
#2	4.999	5.396	20.32	1.037	4.968	H38.03	29.14
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	5.500	5.500	22.00	1.100	5.500	33.00	33.00
Low	4.500	4.500	18.00	.9000	4.500	27.00	27.00

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.018	4.786	5.067	5.099	.9756	1.072	1.026
SDev	.093	.032	.011	.067	.0004	.031	.018
%RSD	1.861	.6587	.2133	1.307	.0415	2.900	1.798
#1	5.084	4.808	5.074	5.146	.9754	1.094	1.040
#2	4.952	4.763	5.059	5.052	.9759	1.051	1.013
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	5.500	5.500			1.100	1.100	1.100
Low	4.500	4.500			.9000	.9000	.9000

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	97.67	5.426	5.421	5.086	5.083	5.417	5.134
SDev	.58	.003	.059	.026	.048	.040	.021
%RSD	.5980	.0529	1.089	.5027	.9437	.7431	.4057
#1	97.26	5.428	5.463	5.104	5.117	5.446	5.119
#2	98.09	5.424	5.379	5.067	5.049	5.389	5.149
Errors	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass
High				5.500	5.500	5.500	5.500
Low				4.500	4.500	4.500	4.500

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.989	1.034	4.935	5.293	5.099	5.202	H1.102
SDev	.007	.003	.005	.035	.085	.001	.005
%RSD	.1470	.2663	.1065	.6704	1.675	.0191	.4900
#1	4.983	1.032	4.931	5.268	5.159	5.202	H1.106
#2	4.994	1.036	4.939	5.319	5.039	5.203	1.098
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High
High	5.500	1.100	5.500	5.500	5.500	5.500	1.100
Low	4.500	.9000	4.500	4.500	4.500	4.500	.9000

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	5.076	1.075	5.070
SDev	.001	.006	.006
%RSD	.0280	.5657	.1187
#1	5.075	1.071	5.074
#2	5.077	1.079	5.066
Errors	LC Pass	LC Pass	LC Pass
High	5.500	1.100	5.500
Low	4.500	.9000	4.500

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	781996	10000	--	--	--	--	--
SDev	4677.511	.0000000	--	--	--	--	--
%RSD	.5981499	.0000000	--	--	--	--	--
#1	778689	10000	--	--	--	--	--
#2	785304	10000	--	--	--	--	--

Method: DAILY1 Sample Name: CCB Operator:
Run Time: 02/05/16 21:53:07
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0008	-.0102	L-.0137	.0110	.0008	.0002	L-.0103
SDev	.0037	.0184	.0055	.0062	.0001	.0002	.0201
%RSD	455.9	179.6	40.38	56.54	8.175	105.5	194.8
#1	.0018	.0028	L-.0098	.0154	.0009	.0003	.0039
#2	-.0034	-.0232	L-.0176	.0066	.0008	.0000	L-.0245
Errors	LC Pass	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Low
High	.0050	.0500	.0050	.0500	.0050	.0050	.0100
Low	-.0050	-.0500	-.0050	-.0500	-.0050	-.0050	-.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0018	-.0001	-.0012	.0020	-.0013	H.0555	H.1008
SDev	.0016	.0004	.0000	.0001	.0003	.0001	.1402
%RSD	90.16	412.0	3.889	7.077	22.62	.1559	139.1
#1	.0029	.0002	-.0013	.0021	-.0016	H.0554	H.2000
#2	.0006	-.0003	-.0012	.0019	-.0011	H.0555	.0017
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC High
High	.0500	.0050	.0050	.0050	.0050	.0500	.1000
Low	-.0500	-.0050	-.0050	-.0050	-.0050	-.0500	-.1000

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0002	.0013	-.0002	.0004	.0032	.0217	H1.036
SDev	.0023	.0004	.0082	.0001	.0007	.0236	1.236
%RSD	1075.	35.81	3898.	11.58	22.26	108.7	119.3
#1	.0019	.0016	.0056	.0005	.0027	.0384	H1.909
#2	-.0014	.0009	-.0060	.0004	.0038	.0050	H.1618
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High
High	.0050	.0050	.0500	.0050	.0050	.0500	.0500
Low	-.0050	-.0050	-.0500	-.0050	-.0050	-.0500	-.0500

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0008	-.0060	-.0176	.0094	L-.0071	H.0284	.0007
SDev	.0005	.0091	.0017	.0019	.0016	.0170	.0099
%RSD	58.86	151.8	9.822	20.15	22.19	59.79	1332.
#1	.0012	.0004	-.0163	.0107	L-.0060	H.0404	.0078
#2	.0005	-.0124	-.0188	.0080	L-.0082	.0164	-.0063
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Low	LC High	LC Pass
High	.0050	.0200			.0050	.0200	.0100
Low	-.0050	-.0200			-.0050	-.0200	-.0100

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

010392

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	99.95	-.0233	.0257	.0052	.0004	H.0094	.0055
SDev	.52	.0044	.0024	.0096	.0018	.0001	.0078
%RSD	.5225	18.96	9.298	185.2	457.4	1.099	140.8
#1	99.58	-.0202	.0240	H.0120	.0017	H.0093	H.0111
#2	100.3	-.0264	.0274	-.0016	-.0009	H.0095	.0000
Errors	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC High	LC Pass
High				.0100	.0050	.0050	.0100
Low				-.0100	-.0050	-.0050	-.0100

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0000	.0078	-.0004	L-.0197	.0383	.0029	.0073
SDev	.0002	.0061	.0008	.0114	.0563	.0003	.0032
%RSD	738.4	78.44	209.7	57.83	147.0	10.31	44.18
#1	.0001	.0035	.0002	L-.0117	.0782	.0031	.0096
#2	-.0002	H.0121	-.0009	L-.0278	-.0015	.0027	.0050
Errors	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass	LC Pass
High	.0050	.0100	.0050	.0100	.1000	.0050	.0100
Low	-.0050	-.0100	-.0050	-.0100	-.1000	-.0050	-.0100

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0007	.0002	.0037
SDev	.0001	.0001	.0002
%RSD	10.15	62.58	6.250
#1	.0007	.0001	.0039
#2	.0006	.0003	.0036
Errors	LC Pass	LC Pass	LC Pass
High	.0050	.0050	.0050
Low	-.0050	-.0050	-.0050

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	800216	10000	--	--	--	--	--
SDev	4100.512	.0000000	--	--	--	--	--
%RSD	.5124254	.0000000	--	--	--	--	--
#1	797317	10000	--	--	--	--	--
#2	803116	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 591000TF Operator:
Run Time: 02/05/16 21:58:25
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0054	416.9	.1156	.2100	14.95	.0179	.0002
SDev	.0019	2.6	.0002	.0021	.33	.0001	.0152
%RSD	35.53	.6163	.1671	1.000	2.217	.3614	8622.
#1	-.0068	418.7	.1157	.2115	15.18	.0180	-.0106
#2	-.0041	415.1	.1155	.2085	14.72	.0179	.0109

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	145.3	.0075	1.266	.5237	1.521	284.9	145.9
SDev	.2	.0003	.007	.0023	.004	2.8	1.2
%RSD	.1699	3.935	.5382	.4357	.2947	.9998	.8247
#1	145.5	.0078	1.271	.5253	1.524	286.9	146.8
#2	145.1	.0073	1.261	.5221	1.518	282.8	145.1

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1626	.2900	67.12	10.54	.5649	80.91	56.53
SDev	.0010	.0026	.43	.08	.0129	.92	.40
%RSD	.6440	.9109	.6344	.7213	2.289	1.139	.7098
#1	.1619	.2919	67.42	10.59	.5740	81.57	56.25
#2	.1634	.2882	66.82	10.48	.5557	80.26	56.82

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.889	6.303	27.08	26.97	.0112	89.43	.0184
SDev	.024	.030	.48	.29	.0004	.56	.0111
%RSD	1.245	.4726	1.767	1.061	3.987	.6252	60.26
#1	1.906	6.324	27.42	27.18	.0116	89.83	.0106
#2	1.872	6.282	26.74	26.77	.0109	89.04	.0262

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	93.01	.2285	.2683	.3743	26.98	.2548	.1031
SDev	.82	.0052	.0039	.0024	.35	.0009	.0019
%RSD	.8823	2.262	1.456	.6482	1.300	.3454	1.878
#1	92.43	.2248	.2710	.3760	27.23	.2554	.1018
#2	93.60	.2321	.2655	.3725	26.74	.2541	.1045

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.173	.0735	29.27	.6206	2.020	1.241	.0357
SDev	.036	.0032	.01	.0508	.024	.007	.0090
%RSD	.6866	4.291	.0196	8.179	1.189	.5859	25.17
#1	5.198	.0758	29.26	.5847	2.003	1.246	.0294
#2	5.147	.0713	29.27	.6565	2.037	1.236	.0421

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.1120	1.324	1.024
SDev	.0002	.008	.000
%RSD	.1522	.5829	.0454
#1	.1119	1.329	1.023
#2	.1121	1.318	1.024

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	744738	10000	--	--	--	--	--
SDev	6542.859	.0000000	--	--	--	--	--
%RSD	.8785445	.0000000	--	--	--	--	--
#1	740112	10000	--	--	--	--	--
#2	749365	10000	--	--	--	--	--

Method: DAILY1 Sample Name: CRI Operator:
Run Time: 02/05/16 22:03:43
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0065	.0996	L.0021	H.0961	H.0114	.0062	.0143
SDev	.0004	.0010	.0043	.0019	.0039	.0000	.0069
%RSD	6.763	.9948	202.0	1.960	34.73	.4746	48.15
#1	.0068	.0989	L-.0009	H.0947	H.0141	.0062	L.0094
#2	.0061	.1003	.0052	H.0974	H.0086	.0063	.0192
Errors	LC Pass	LC Pass	LC Low	LC High	LC High	LC Pass	LC Pass
High	.0150	.1500	.0150	.0600	.0075	.0075	.0300
Low	.0050	.0500	.0050	.0200	.0025	.0025	.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0992	.0047	.0041	.0067	L.0025	.1406	.2749
SDev	.0008	.0002	.0005	.0004	.0003	.0024	.0299
%RSD	.8376	4.683	11.65	6.160	13.00	1.732	10.86
#1	.0987	.0046	.0038	.0069	L.0022	.1389	.2538
#2	.0998	.0049	.0045	.0064	.0027	.1423	.2960
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	.1500	.0075	.0075	.0075	.0075	.1500	.7500
Low	.0500	.0025	.0025	.0025	.0025	.0500	.2500

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0072	.0108	.0412	.0054	H.0079	.2913	L-.0156
SDev	.0003	.0000	.0012	.0000	.0001	.0046	.2223
%RSD	3.598	.1481	2.977	.1178	1.268	1.576	1422.
#1	.0071	.0108	.0404	.0054	H.0080	.2881	L-.1728
#2	.0074	.0108	.0421	.0054	H.0078	.2946	.1416
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Low
High	.0150	.0150	.1000	.0075	.0075	.5000	.5000
Low	.0050	.0050	.0250	.0025	.0025	.1250	.1250

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0050	.0455	-.0117	.0150	.0111	H.0905	.0171
SDev	.0004	.0083	.0015	.0021	.0020	.0188	.0044
%RSD	9.000	18.16	12.98	13.74	18.01	20.78	25.87
#1	.0053	.0396	-.0128	.0165	L.0097	H.1039	.0140
#2	.0046	.0513	-.0106	.0136	.0125	H.0772	.0203
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC High	LC Pass
High	.0075	.0750			.0300	.0750	.0300
Low	.0025	.0250			.0100	.0250	.0100

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

010397

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	100.3	-.0159	.0282	H.6375	.0061	.0135	.0107
SDev	.1	.0043	.0051	.0005	.0009	.0048	.0008
%RSD	.0648	27.11	18.11	.0798	14.22	35.87	7.413
#1	100.2	-.0190	.0246	H.6379	.0067	.0101	.0101
#2	100.3	-.0129	.0318	H.6372	.0055	H.0169	.0112
Errors	NOCHECK	NOCHECK	NOCHECK	LC High	LC Pass	LC Pass	LC Pass
High				.1500	.0075	.0150	.0150
Low				.0500	.0025	.0050	.0050

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0050	.0283	.0035	L-.0003	.1672	.0073	.0211
SDev	.0000	.0029	.0001	.0071	.0235	.0001	.0057
%RSD	.7468	10.11	2.836	2105.	14.08	1.377	26.98
#1	.0050	H.0303	.0034	L-.0053	.1506	.0074	.0171
#2	.0051	.0263	.0035	L.0047	.1839	.0073	.0251
Errors	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass	LC Pass
High	.0075	.0300	.0075	.0300	.3000	.0075	.0300
Low	.0025	.0100	.0025	.0100	.1000	.0025	.0100

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0057	.0045	H.0080
SDev	.0001	.0003	.0006
%RSD	.9105	5.591	7.037
#1	.0057	.0047	H.0084
#2	.0056	.0044	H.0076
Errors	LC Pass	LC Pass	LC High
High	.0075	.0075	.0075
Low	.0025	.0025	.0025

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	802666	10000	--	--	--	--	--
SDev	452.5483	.0000000	--	--	--	--	--
%RSD	.0563807	.0000000	--	--	--	--	--
#1	802346	10000	--	--	--	--	--
#2	802986	10000	--	--	--	--	--

Method: DAILY1 Sample Name: CRI-N Operator:
Run Time: 02/05/16 22:09:00
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0179	.2173	.0172	H.1639	.0105	.0125	.0329
SDev	.0004	.0021	.0061	.0005	.0001	.0001	.0092
%RSD	2.135	.9426	35.22	.2844	.8872	.4171	27.99
#1	.0176	.2158	.0215	H.1643	.0106	.0125	.0394
#2	.0182	.2187	L.0129	H.1636	.0105	.0125	L.0264
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass
High	.0260	.2600	.0260	.1040	.0130	.0130	.0520
Low	.0140	.1400	.0140	.0560	.0070	.0070	.0280

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2012	.0104	.0091	.0115	.0091	.2404	L.6014
SDev	.0010	.0002	.0001	.0001	.0004	.0098	.0428
%RSD	.4978	1.935	1.535	.5121	4.281	4.063	7.110
#1	.2005	.0106	.0090	.0114	.0088	.2335	L.5712
#2	.2019	.0103	.0092	.0115	.0094	.2473	L.6317
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low
High	.2600	.0130	.0130	.0130	.0130	.2600	1.300
Low	.1400	.0070	.0070	.0070	.0070	.1400	.7000

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0199	.0221	.0986	.0105	.0119	.5637	H.6549
SDev	.0003	.0003	.0011	.0000	.0013	.0037	.1624
%RSD	1.571	1.481	1.145	.0615	11.30	.6534	24.79
#1	.0197	.0219	.0978	.0105	.0109	.5611	.5401
#2	.0201	.0224	.0994	.0105	.0128	.5663	H.7697
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High
High	.0260	.0260	.1300	.0130	.0130	.6500	.6500
Low	.0140	.0140	.0700	.0070	.0070	.3500	.3500

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0093	.0937	-.0058	.0191	.0340	.1253	.0391
SDev	.0004	.0094	.0022	.0012	.0026	.0065	.0054
%RSD	4.131	10.02	38.81	6.332	7.650	5.192	13.84
#1	.0096	.1004	-.0042	.0183	.0322	.1207	.0429
#2	.0090	.0871	-.0073	.0200	.0359	.1299	.0352
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	.0130	.1300			.0520	.1300	.0520
Low	.0070	.0700			.0280	.0700	.0280

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	99.16	-.0016	.0432	H.9245	.0108	H.0282	.0255
SDev	.84	.0031	.0079	.0018	.0001	.0063	.0021
%RSD	.8422	191.0	18.24	.1941	.5787	22.26	8.113
#1	99.75	-.0038	.0376	H.9258	.0108	.0238	H.0269
#2	98.57	.0006	.0487	H.9232	.0109	H.0326	.0240
Errors	NOCHECK	NOCHECK	NOCHECK	LC High	LC Pass	LC High	LC Pass
High				.2600	.0130	.0260	.0260
Low				.1400	.0070	.0140	.0140

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0103	H.0544	.0086	L.0245	.3909	.0123	.0479
SDev	.0000	.0079	.0001	.0091	.0186	.0000	.0086
%RSD	.4034	14.59	1.449	37.14	4.758	.1251	18.00
#1	.0103	.0488	.0086	L.0181	.4040	.0123	H.0540
#2	.0103	H.0600	.0087	.0309	.3777	.0123	.0418
Errors	LC Pass	LC High	LC Pass	LC Low	LC Pass	LC Pass	LC Pass
High	.0130	.0520	.0130	.0520	.5200	.0130	.0520
Low	.0070	.0280	.0070	.0280	.2800	.0070	.0280

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0108	.0099	H.0134
SDev	.0000	.0003	.0001
%RSD	.2897	2.639	1.050
#1	.0108	.0101	H.0135
#2	.0108	.0097	H.0133
Errors	LC Pass	LC Pass	LC High
High	.0130	.0130	.0130
Low	.0070	.0070	.0070

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	793866	10000	--	--	--	--	--
SDev	6714.686	.0000000	--	--	--	--	--
%RSD	.8458211	.0000000	--	--	--	--	--
#1	798614	10000	--	--	--	--	--
#2	789118	10000	--	--	--	--	--

Method: DAILY1 Sample Name: ICSA Operator:
Run Time: 02/05/16 22:14:18
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0054	490.5	-.0075	.1010	.0030	.0001	-.0225
SDev	.0002	1.4	.0099	.0010	.0001	.0000	.0009
%RSD	3.624	.2912	131.8	1.006	2.876	19.24	4.108
#1	-.0056	489.5	-.0146	.1003	.0030	.0001	-.0231
#2	-.0053	491.5	-.0005	.1017	.0029	.0001	-.0218
Errors	NOCHECK	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High		600.0					
Low		400.0					

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	449.4	-.0005	-.0036	.0011	.0000	197.2	-.0063
SDev	1.2	.0001	.0000	.0009	.0003	.6	.0269
%RSD	.2591	23.05	.0710	78.82	1915.	.3292	428.2
#1	450.3	-.0005	-.0036	.0017	-.0002	196.7	-.0253
#2	448.6	-.0004	-.0036	.0005	.0003	197.6	.0127
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	NOCHECK
High	600.0					240.0	
Low	400.0					160.0	

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0037	.0022	520.2	.0196	.0004	.1170	-.3327
SDev	.0012	.0000	.1	.0000	.0019	.0075	.2960
%RSD	33.93	.3772	.0262	.2187	520.2	6.436	88.97
#1	-.0045	.0021	520.3	.0196	-.0010	.1117	-.5420
#2	-.0028	.0022	520.1	.0196	.0017	.1224	-.1234
Errors	NOCHECK	NOCHECK	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High			600.0				
Low			400.0				

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0039	.0144	-.0814	.0292	-.0121	.0003	.0000
SDev	.0005	.0085	.0035	.0026	.0032	.0011	.0015
%RSD	13.31	59.29	4.313	8.988	26.91	379.9	3373.
#1	.0043	.0204	-.0789	.0274	-.0144	.0011	.0011
#2	.0035	.0084	-.0838	.0311	-.0098	-.0005	-.0010
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	87.67	-.0323	.0230	.8203	-.0076	.0046	-.0001
SDev	.09	.0142	.0055	.0053	.0006	.0084	.0039
%RSD	.1071	43.91	23.82	.6399	7.611	181.8	4352.
#1	87.61	-.0423	.0191	.8166	-.0080	-.0013	.0027
#2	87.74	-.0222	.0269	.8240	-.0072	.0105	-.0029
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0073	-.0396	.0034	.4513	.0357	.0069	-.0037
SDev	.0000	.0042	.0004	.0163	.0166	.0006	.0050
%RSD	.2842	10.70	11.65	3.614	46.54	9.347	134.3
#1	.0074	-.0366	.0036	.4398	.0475	.0073	-.0002
#2	.0073	-.0425	.0031	.4628	.0240	.0064	-.0073
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0039	-.0038	.0048
SDev	.0002	.0001	.0009
%RSD	4.490	3.618	19.33
#1	.0041	-.0037	.0055
#2	.0038	-.0039	.0042
Errors	NOCHECK	NOCHECK	NOCHECK
High			
Low			

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	702002	10000	--	--	--	--	--
SDev	739.6337	.0000000	--	--	--	--	--
%RSD	.1053606	.0000000	--	--	--	--	--
#1	701479	10000	--	--	--	--	--
#2	702525	10000	--	--	--	--	--

Analysis Report 02/05/16 10:24:32 PM

Method: DAILY1 Sample Name: ICSAB Operator:
Run Time: 02/05/16 22:19:34
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.120	484.3	1.090	1.144	.5286	H.6155	-.0230
SDev	.006	1.4	.009	.008	.0038	.0251	.0005
%RSD	.5084	.2926	.8683	.6694	.7108	4.072	2.327
#1	1.124	485.3	1.083	1.149	.5313	H.6332	-.0234
#2	1.116	483.3	1.097	1.138	.5259	.5977	-.0227
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	NOCHECK
High	1.200	600.0	1.200	1.200	.6000	.6000	
Low	.8000	400.0	.8000	.8000	.4000	.4000	

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	447.2	1.045	.5064	.5052	.5337	196.2	-.0146
SDev	.8	.009	.0037	.0017	.0014	1.2	.0347
%RSD	.1816	.8775	.7258	.3332	.2601	.5929	237.3
#1	447.8	1.051	.5090	.5064	.5347	197.0	-.0391
#2	446.6	1.038	.5038	.5040	.5327	195.4	.0099
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK
High	600.0	1.200	.6000	.6000	.6000	240.0	
Low	400.0	.8000	.4000	.4000	.4000	160.0	

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0042	1.189	518.7	.5399	1.067	.0654	-.5041
SDev	.0005	.005	2.6	.0031	.010	.0080	.3924
%RSD	12.80	.4056	.4953	.5672	.9174	12.30	77.84
#1	-.0045	1.192	520.6	.5420	1.074	.0597	-.7816
#2	-.0038	1.186	516.9	.5377	1.060	.0710	-.2267
Errors	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK	NOCHECK
High		1.200	600.0	.6000	1.200		
Low		.8000	400.0	.4000	.8000		

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9949	.9630	.9319	1.038	-.0039	.0163	1.115
SDev	.0035	.0053	.0057	.009	.0018	.0069	.006
%RSD	.3477	.5457	.6080	.8829	46.90	42.49	.5377
#1	.9925	.9667	.9359	1.031	-.0026	.0114	1.111
#2	.9974	.9593	.9279	1.044	-.0052	.0212	1.120
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass
High	1.200	1.200					1.200
Low	.8000	.8000					.8000

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	89.12	1.086	1.115	1.438	1.001	1.104	1.045
SDev	.14	.003	.036	.009	.004	.025	.003
%RSD	.1602	.2935	3.217	.6439	.4209	2.259	.2776
#1	89.02	1.084	1.090	1.445	.9984	1.087	1.047
#2	89.23	1.088	1.140	1.432	1.004	1.122	1.043
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					1.200	1.200	1.200
Low					.8000	.8000	.8000

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.059	-.0394	1.018	H1.436	1.091	.5313	.0033
SDev	.002	.0054	.001	.012	.022	.0016	.0078
%RSD	.1432	13.68	.0973	.8503	2.010	.2948	233.0
#1	1.060	-.0356	1.017	H1.427	1.075	.5324	-.0022
#2	1.057	-.0433	1.018	H1.444	1.107	.5302	.0088
Errors	LC Pass	NOCHECK	LC Pass	LC High	NOCHECK	LC Pass	NOCHECK
High	1.200		1.200	1.200		.6000	
Low	.8000		.8000	.8000		.4000	

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0039	1.053	.9392
SDev	.0003	.007	.0065
%RSD	6.613	.7062	.6950
#1	.0037	1.058	.9345
#2	.0041	1.048	.9438
Errors	NOCHECK	LC Pass	NOCHECK
High		1.200	
Low		.8000	

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	713646	10000	--	--	--	--	--
SDev	1173.090	.0000000	--	--	--	--	--
%RSD	.1643799	.0000000	--	--	--	--	--
#1	712816	10000	--	--	--	--	--
#2	714475	10000	--	--	--	--	--

Method: DAILY1 Sample Name: CCV Operator:
Run Time: 02/05/16 22:24:51
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.036	10.05	5.309	5.246	9.989	1.089	5.065
SDev	.009	.02	.020	.025	.122	.049	.019
%RSD	.8215	.1655	.3688	.4845	1.224	4.518	.3765
#1	1.030	10.04	5.295	5.228	10.08	H1.124	5.078
#2	1.042	10.06	5.323	5.264	9.903	1.054	5.051
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.100	11.00	5.500	5.500	11.00	1.100	5.500
Low	.9000	9.000	4.500	4.500	9.000	.9000	4.500

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.01	1.069	5.194	2.021	2.008	9.992	19.00
SDev	.11	.004	.012	.005	.002	.025	.11
%RSD	.5583	.3643	.2404	.2375	.1139	.2481	.5592
#1	19.93	1.066	5.185	2.024	2.010	9.974	19.08
#2	20.09	1.072	5.203	2.017	2.007	10.01	18.93
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.00	1.100	5.500	2.200	2.200	11.00	22.00
Low	18.00	.9000	4.500	1.800	1.800	9.000	18.00

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.004	5.420	20.05	1.042	4.985	H38.24	29.01
SDev	.022	.071	.14	.001	.001	.30	.30
%RSD	.4317	1.308	.6774	.0973	.0246	.7913	1.041
#1	5.020	5.470	19.95	1.043	4.984	H38.46	28.79
#2	4.989	5.370	20.14	1.041	4.986	H38.03	29.22
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	5.500	5.500	22.00	1.100	5.500	33.00	33.00
Low	4.500	4.500	18.00	.9000	4.500	27.00	27.00

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.977	4.735	5.039	5.049	.9741	1.016	1.012
SDev	.040	.001	.054	.032	.0001	.005	.001
%RSD	.8050	.0173	1.064	.6343	.0131	.4804	.1208
#1	5.005	4.736	5.001	5.071	.9740	1.013	1.011
#2	4.949	4.734	5.076	5.026	.9742	1.020	1.013
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	5.500	5.500			1.100	1.100	1.100
Low	4.500	4.500			.9000	.9000	.9000

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

010409

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	96.56	5.404	5.338	4.935	5.040	5.354	5.122
SDev	1.05	.055	.043	.040	.003	.011	.026
%RSD	1.092	1.010	.8131	.8169	.0688	.2004	.5157
#1	95.81	5.365	5.368	4.907	5.043	5.362	5.103
#2	97.30	5.442	5.307	4.964	5.038	5.347	5.140
Errors	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass
High				5.500	5.500	5.500	5.500
Low				4.500	4.500	4.500	4.500

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.031	1.038	4.953	5.219	5.004	5.200	1.100
SDev	.039	.009	.004	.005	.017	.005	.018
%RSD	.7771	.8414	.0902	.1002	.3309	.0975	1.634
#1	5.059	1.044	4.950	5.215	5.016	5.196	1.087
#2	5.004	1.031	4.957	5.223	4.992	5.203	H1.112
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.500	1.100	5.500	5.500	5.500	5.500	1.100
Low	4.500	.9000	4.500	4.500	4.500	4.500	.9000

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	5.077	1.072	5.076
SDev	.009	.003	.008
%RSD	.1769	.2665	.1548
#1	5.084	1.070	5.082
#2	5.071	1.074	5.071
Errors	LC Pass	LC Pass	LC Pass
High	5.500	1.100	5.500
Low	4.500	.9000	4.500

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	773024	10000	--	--	--	--	--
SDev	8463.361	.0000000	--	--	--	--	--
%RSD	1.094837	.0000000	--	--	--	--	--
#1	767040	10000	--	--	--	--	--
#2	779009	10000	--	--	--	--	--

Method: DAILY1 Sample Name: CCB Operator:
Run Time: 02/05/16 22:30:06
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0025	-.0124	L-.0084	.0147	.0007	.0000	-.0084
SDev	.0026	.0041	.0066	.0053	.0001	.0001	.0030
%RSD	102.7	32.70	78.84	35.66	12.55	153.1	35.93
#1	-.0007	-.0096	-.0037	.0184	.0006	.0001	L-.0106
#2	-.0043	-.0153	L-.0131	.0110	.0008	-.0000	-.0063
Errors	LC Pass	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass
High	.0050	.0500	.0050	.0500	.0050	.0050	.0100
Low	-.0050	-.0500	-.0050	-.0500	-.0050	-.0050	-.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0012	-.0003	.0001	.0020	-.0008	H.0507	-.0062
SDev	.0009	.0000	.0001	.0001	.0005	.0053	.0090
%RSD	77.73	13.46	42.04	3.885	65.39	10.53	145.5
#1	.0019	-.0004	.0002	.0020	-.0012	.0469	-.0125
#2	.0005	-.0003	.0001	.0019	-.0004	H.0544	.0002
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	.0500	.0050	.0050	.0050	.0050	.0500	.1000
Low	-.0500	-.0050	-.0050	-.0050	-.0050	-.0500	-.1000

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0016	.0005	-.0047	.0003	.0042	-.0068	L-.3075
SDev	.0008	.0000	.0004	.0001	.0007	.0040	.3027
%RSD	50.82	2.498	9.466	26.71	16.78	58.57	98.42
#1	-.0010	.0005	-.0044	.0002	.0047	-.0096	L-.5215
#2	-.0021	.0005	-.0050	.0004	.0037	-.0040	L-.0935
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low
High	.0050	.0050	.0500	.0050	.0050	.0500	.0500
Low	-.0050	-.0050	-.0500	-.0050	-.0050	-.0500	-.0500

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0000	.0015	-.0157	.0102	-.0038	.0006	-.0023
SDev	.0015	.0047	.0056	.0001	.0002	.0022	.0009
%RSD	6026.	321.0	35.55	1.299	4.661	348.4	37.07
#1	-.0010	-.0018	-.0118	.0101	-.0039	.0022	-.0017
#2	.0011	.0048	-.0197	.0103	-.0036	-.0009	-.0029
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	.0050	.0200			.0050	.0200	.0100
Low	-.0050	-.0200			-.0050	-.0200	-.0100

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	98.37	-.0134	.0160	-.0099	.0016	H.0062	.0059
SDev	.22	.0181	.0124	.0042	.0018	.0022	.0058
%RSD	.2281	135.0	77.32	42.82	112.0	35.84	98.56
#1	98.21	-.0006	.0073	-.0069	.0028	.0046	H.0100
#2	98.52	-.0262	.0248	L-.0128	.0003	H.0078	.0018
Errors	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC High	LC Pass
High				.0100	.0050	.0050	.0100
Low				-.0100	-.0050	-.0050	-.0100

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0001	H.0108	-.0015	L-.0296	-.0214	.0025	.0043
SDev	.0000	.0069	.0005	.0221	.0123	.0005	.0018
%RSD	13.06	63.78	31.92	74.74	57.31	20.06	42.39
#1	-.0001	.0059	-.0012	L-.0140	-.0301	.0021	.0056
#2	-.0002	H.0157	-.0018	L-.0453	-.0127	.0028	.0030
Errors	LC Pass	LC High	LC Pass	LC Low	LC Pass	LC Pass	LC Pass
High	.0050	.0100	.0050	.0100	.1000	.0050	.0100
Low	-.0050	-.0100	-.0050	-.0100	-.1000	-.0050	-.0100

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0006	-.0005	.0030
SDev	.0001	.0001	.0003
%RSD	20.63	15.07	10.07
#1	.0005	-.0005	.0028
#2	.0007	-.0006	.0032
Errors	LC Pass	LC Pass	LC Pass
High	.0050	.0050	.0050
Low	-.0050	-.0050	-.0050

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	787555	10000	--	--	--	--	--
SDev	1825.750	.0000000	--	--	--	--	--
%RSD	.2318250	.0000000	--	--	--	--	--
#1	786264	10000	--	--	--	--	--
#2	788846	10000	--	--	--	--	--

Analysis Report 02/05/16 10:40:24 PM

Method: DAILY1 Sample Name: PB16A27KE1 DF100 Operator:
Run Time: 02/05/16 22:35:25
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0037	-.0206	-.0037	-.0158	.0006	.0000	-.0060
SDev	.0014	.0018	.0014	.0027	.0001	.0000	.0016
%RSD	37.48	8.813	36.29	17.05	12.36	86.34	26.18
#1	-.0028	-.0193	-.0047	-.0139	.0006	.0000	-.0049
#2	-.0047	-.0219	-.0028	-.0177	.0005	.0000	-.0071

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0119	-.0004	-.0005	.0013	-.0024	.0341	-.0354
SDev	.0006	.0001	.0009	.0001	.0010	.0039	.0275
%RSD	4.633	35.08	169.0	8.172	41.71	11.29	77.68
#1	.0123	-.0003	.0001	.0012	-.0017	.0368	-.0548
#2	.0116	-.0004	-.0012	.0013	-.0031	.0314	-.0160

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0021	.0003	-.0077	.0003	.0027	-.0191	-.4088
SDev	.0005	.0005	.0002	.0000	.0001	.0038	.2344
%RSD	21.63	180.4	2.911	7.981	3.718	19.93	57.35
#1	-.0018	.0007	-.0079	.0002	.0026	-.0218	-.5746
#2	-.0025	-.0001	-.0075	.0003	.0027	-.0164	-.2430

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0003	-.0000	-.0175	.0093	-.0077	.0046	-.0057
SDev	.0004	.0037	.0006	.0045	.0021	.0053	.0028
%RSD	137.7	15730.	3.653	48.90	27.60	114.8	49.34
#1	-.0006	.0026	-.0170	.0061	-.0062	.0009	-.0077
#2	-.0000	-.0026	-.0179	.0125	-.0092	.0083	-.0037

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	99.53	-.0208	.0226	-.1359	.0004	.0082	.0003
SDev	.03	.0011	.0082	.0016	.0028	.0058	.0003
%RSD	.0345	5.138	36.39	1.150	792.5	71.64	120.4
#1	99.55	-.0216	.0168	-.1348	-.0016	.0040	.0000
#2	99.50	-.0201	.0285	-.1371	.0023	.0123	.0005

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0001	.0087	-.0017	-.0185	-.0378	.0020	.0044
SDev	.0000	.0008	.0002	.0019	.0104	.0002	.0101
%RSD	25.74	9.542	9.819	10.47	27.48	10.32	233.2
#1	-.0001	.0081	-.0019	-.0171	-.0305	.0021	.0115
#2	-.0002	.0093	-.0016	-.0199	-.0452	.0018	-.0028

010415

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0004	.0007	.0022
SDev	.0000	.0000	.0006
%RSD	6.526	.4269	26.64
#1	.0004	.0007	.0026
#2	.0004	.0007	.0018

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	796814	10000	--	--	--	--	--
SDev	224.1529	.0000000	--	--	--	--	--
%RSD	.0281311	.0000000	--	--	--	--	--
#1	796973	10000	--	--	--	--	--
#2	796656	10000	--	--	--	--	--

Method: DAILY1 Sample Name: LCS16A27KE1 DF100 Operator:
Run Time: 02/05/16 22:40:42
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0030	.6843	-.0099	-.0187	.0094	.0001	-.0138
SDev	.0012	.0034	.0105	.0001	.0002	.0001	.0047
%RSD	40.48	.4948	106.3	.4445	1.719	82.06	33.96
#1	-.0021	.6819	-.0025	-.0188	.0093	.0000	-.0171
#2	-.0038	.6867	-.0173	-.0187	.0095	.0002	-.0105

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0746	-.0004	-.0001	.0021	-.0013	.1869	.1704
SDev	.0006	.0002	.0002	.0005	.0001	.0003	.0271
%RSD	.7341	40.48	258.9	23.13	6.734	.1830	15.92
#1	.0750	-.0003	.0001	.0017	-.0013	.1872	.1512
#2	.0742	-.0006	-.0002	.0024	-.0014	.1867	.1896

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0019	.0012	.0092	.0043	.0031	.3254	.1834
SDev	.0010	.0001	.0027	.0000	.0009	.0046	.2290
%RSD	55.55	4.699	29.24	.2692	28.42	1.402	124.9
#1	-.0011	.0012	.0111	.0043	.0025	.3221	.0214
#2	-.0026	.0012	.0073	.0043	.0037	.3286	.3453

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0000	.0040	-.0143	.0099	-.0061	.0258	-.0048
SDev	.0008	.0113	.0001	.0002	.0006	.0001	.0018
%RSD	2416.	282.1	.4695	1.650	9.251	.4883	38.70
#1	-.0006	-.0040	-.0143	.0100	-.0057	.0259	-.0061
#2	.0005	.0120	-.0142	.0097	-.0065	.0257	-.0035

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	99.70	-.0206	.0186	2.800	.0018	.0055	-.0008
SDev	.41	.0004	.0051	.035	.0001	.0036	.0019
%RSD	.4112	1.772	27.72	1.239	4.754	64.26	235.4
#1	99.99	-.0203	.0222	2.775	.0019	.0080	.0005
#2	99.41	-.0208	.0149	2.824	.0017	.0030	-.0021

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0005	.0081	.0117	-.0103	-.0259	.0028	-.0015
SDev	.0000	.0091	.0003	.0076	.0242	.0000	.0033
%RSD	3.388	111.1	2.729	74.21	93.30	.8730	215.0
#1	.0005	.0145	.0119	-.0157	-.0430	.0028	-.0038
#2	.0005	.0017	.0114	-.0049	-.0088	.0028	.0008

010417

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0009	.0006	.0050
SDev	.0000	.0002	.0000
%RSD	4.765	27.00	.2002
#1	.0009	.0007	.0050
#2	.0008	.0005	.0050

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	798166	10000	--	--	--	--	--
SDev	3337.544	.0000000	--	--	--	--	--
%RSD	.4181516	.0000000	--	--	--	--	--
#1	800526	10000	--	--	--	--	--
#2	795806	10000	--	--	--	--	--

Analysis Report 02/05/16 10:50:57 PM page 1

Method: DAILY1 Sample Name: LCS16A27KE2 DF100 Operator:
Run Time: 02/05/16 22:45:58
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0037	.4364	-.0090	-.0156	.0007	.0001	-.0201
SDev	.0015	.0017	.0004	.0002	.0001	.0000	.0020
%RSD	41.23	.3863	4.439	1.016	9.867	11.69	10.13
#1	-.0047	.4352	-.0087	-.0155	.0008	.0001	-.0215
#2	-.0026	.4375	-.0093	-.0157	.0007	.0001	-.0187

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2953	-.0003	-.0000	.0048	-.0010	.7040	.0024
SDev	.0011	.0001	.0006	.0006	.0008	.0083	.0281
%RSD	.3647	43.92	5185.	11.52	79.86	1.181	1169.
#1	.2945	-.0002	.0004	.0051	-.0004	.7099	-.0174
#2	.2960	-.0004	-.0005	.0044	-.0015	.6981	.0222

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0016	.0026	.2179	.0133	.0041	.0548	-.0677
SDev	.0001	.0001	.0024	.0001	.0026	.0070	.2677
%RSD	4.230	2.706	1.100	.5187	63.21	12.85	395.6
#1	-.0015	.0025	.2196	.0134	.0059	.0498	-.2570
#2	-.0016	.0026	.2162	.0133	.0022	.0598	.1216

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0017	-.0005	-.0168	.0083	-.0073	.0231	-.0016
SDev	.0013	.0143	.0030	.0014	.0014	.0152	.0004
%RSD	75.62	2618.	17.67	16.99	18.98	66.04	27.38
#1	.0027	.0095	-.0147	.0073	-.0063	.0338	-.0019
#2	.0008	-.0106	-.0189	.0093	-.0083	.0123	-.0013

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	100.9	-.0178	.0161	1.868	-.0001	.0048	.0005
SDev	.1	.0015	.0021	.020	.0000	.0019	.0008
%RSD	.0818	8.263	12.71	1.052	75.31	38.65	167.5
#1	100.8	-.0168	.0176	1.854	-.0000	.0061	.0010
#2	101.0	-.0189	.0147	1.882	-.0001	.0035	-.0001

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0005	.0080	.0669	-.0217	-.0216	.0046	.0061
SDev	.0000	.0009	.0001	.0115	.0026	.0000	.0020
%RSD	2.143	11.03	.1097	53.31	12.19	.8067	32.41
#1	.0005	.0087	.0670	-.0298	-.0234	.0047	.0047
#2	.0005	.0074	.0669	-.0135	-.0197	.0046	.0075

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0005	.0003	.0028
SDev	.0002	.0004	.0003
%RSD	42.27	137.4	12.14
#1	.0007	.0000	.0031
#2	.0004	.0006	.0026

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	807784	10000	--	--	--	--	--
SDev	663.2662	.0000000	--	--	--	--	--
%RSD	.0821093	.0000000	--	--	--	--	--
#1	807315	10000	--	--	--	--	--
#2	808253	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 588049RK DF100 Operator:
Run Time: 02/05/16 22:51:15
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0016	-.0045	-.0067	-.0192	.3267	.0001	-.0118
SDev	.0016	.0034	.0041	.0006	.0026	.0001	.0021
%RSD	95.90	75.75	62.23	3.134	.7990	88.39	18.16
#1	-.0028	-.0069	-.0096	-.0196	.3286	.0000	-.0103
#2	-.0005	-.0021	-.0037	-.0187	.3249	.0001	-.0133

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0096	-.0002	.0044	.0021	.0017	.1787	.0205
SDev	.0018	.0001	.0003	.0003	.0003	.0067	.0578
%RSD	18.60	38.01	7.132	16.93	16.18	3.753	282.4
#1	.0083	-.0002	.0046	.0023	.0015	.1834	-.0204
#2	.0108	-.0003	.0041	.0018	.0019	.1739	.0613

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0011	.0006	.0349	.0043	.0048	.0217	.0029
SDev	.0018	.0001	.0060	.0002	.0015	.0098	.5040
%RSD	155.1	25.27	17.28	4.386	31.24	45.04	17230.
#1	-.0024	.0005	.0306	.0045	.0059	.0148	-.3535
#2	.0001	.0007	.0391	.0042	.0037	.0286	.3593

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0071	.0054	.0493	.0824	-.0071	.6203	.0038
SDev	.0003	.0063	.0032	.0038	.0014	.0300	.0000
%RSD	4.057	115.5	6.409	4.583	19.44	4.834	.3216
#1	.0069	.0010	.0515	.0798	-.0080	.5991	.0038
#2	.0073	.0098	.0470	.0851	-.0061	.6415	.0038

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	99.98	-.0261	.0301	1.124	.0713	.0114	.0007
SDev	.11	.0001	.0042	.004	.0015	.0028	.0019
%RSD	.1062	.5729	13.91	.3742	2.054	24.92	286.6
#1	100.1	-.0262	.0272	1.121	.0703	.0094	-.0007
#2	99.91	-.0260	.0331	1.127	.0723	.0134	.0020

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0053	.0113	.0102	-.0138	-.0121	.0039	-.0013
SDev	.0001	.0055	.0006	.0026	.0186	.0005	.0021
%RSD	2.010	48.33	5.406	18.53	153.6	13.67	154.7
#1	.0052	.0075	.0098	-.0156	-.0253	.0043	-.0028
#2	.0054	.0152	.0106	-.0120	.0010	.0035	.0001

010421

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0006	.0005	.0032
SDev	.0003	.0003	.0004
%RSD	41.72	46.45	13.26
#1	.0008	.0004	.0035
#2	.0004	.0007	.0029

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	800454	10000	--	--	--	--	--
SDev	930.5525	.0000000	--	--	--	--	--
%RSD	.1162531	.0000000	--	--	--	--	--
#1	801112	10000	--	--	--	--	--
#2	799796	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 588556RK DF100 Operator:
Run Time: 02/05/16 22:56:31
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0031	-.0129	-.0055	-.0187	.0642	.0000	-.0100
SDev	.0015	.0055	.0035	.0000	.0005	.0000	.0035
%RSD	48.24	42.30	64.19	.2251	.8070	96.20	35.13
#1	-.0041	-.0168	-.0080	-.0187	.0639	.0000	-.0125
#2	-.0020	-.0090	-.0030	-.0187	.0646	.0001	-.0075

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1774	-.0003	.0116	.0024	.0052	.2353	.0143
SDev	.0001	.0000	.0000	.0002	.0012	.0065	.0603
%RSD	.0322	2.095	.0071	7.903	22.70	2.760	420.6
#1	.1775	-.0003	.0116	.0022	.0044	.2307	-.0283
#2	.1774	-.0003	.0116	.0025	.0061	.2399	.0570

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0017	.0006	.0510	.0085	.0043	.0020	-.1864
SDev	.0007	.0001	.0016	.0001	.0005	.0097	.6118
%RSD	41.28	23.71	3.224	1.203	11.82	484.3	328.3
#1	-.0022	.0005	.0499	.0086	.0040	-.0049	-.6190
#2	-.0012	.0007	.0522	.0084	.0047	.0089	.2463

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0145	-.0035	.0354	.0598	-.0074	.5162	-.0070
SDev	.0015	.0013	.0043	.0037	.0008	.0149	.0023
%RSD	10.18	36.60	12.12	6.127	11.07	2.889	33.43
#1	.0135	-.0043	.0324	.0623	-.0068	.5057	-.0053
#2	.0156	-.0026	.0384	.0572	-.0080	.5268	-.0086

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	98.73	-.0281	.0176	1.264	.0516	.0023	-.0001
SDev	.25	.0084	.0038	.010	.0010	.0053	.0028
%RSD	.2532	29.96	21.38	.7714	1.956	226.1	2273.
#1	98.56	-.0341	.0149	1.257	.0523	-.0014	-.0021
#2	98.91	-.0222	.0202	1.271	.0509	.0061	.0018

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0065	.0049	.0116	.0003	-.0307	.0046	.0017
SDev	.0001	.0017	.0003	.0078	.0229	.0000	.0027
%RSD	1.494	34.21	2.119	2985.	74.43	.1277	158.2
#1	.0064	.0061	.0114	-.0053	-.0469	.0046	-.0002
#2	.0066	.0037	.0118	.0058	-.0146	.0046	.0037

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0007	.0020	.0029
SDev	.0001	.0003	.0001
%RSD	11.17	12.67	4.137
#1	.0007	.0018	.0028
#2	.0006	.0022	.0030

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	790440	10000	--	--	--	--	--
SDev	1925.452	.0000000	--	--	--	--	--
%RSD	.2435923	.0000000	--	--	--	--	--
#1	789079	10000	--	--	--	--	--
#2	791802	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 588556RKD DF100 Operator:
Run Time: 02/05/16 23:01:46
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0029	-.0108	-.0066	-.0184	.1712	.0002	-.0125
SDev	.0004	.0050	.0023	.0007	.0006	.0002	.0033
%RSD	13.83	46.29	34.81	4.025	.3682	98.24	26.09
#1	-.0026	-.0143	-.0049	-.0189	.1717	.0001	-.0102
#2	-.0032	-.0072	-.0082	-.0179	.1708	.0003	-.0148

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1890	-.0004	.0091	.0021	.0050	.2034	.1070
SDev	.0019	.0000	.0004	.0004	.0003	.0004	.1603
%RSD	1.011	7.203	4.383	19.82	6.931	.2034	149.8
#1	.1877	-.0003	.0088	.0024	.0048	.2031	-.0063
#2	.1904	-.0004	.0094	.0018	.0053	.2037	.2204

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0008	.0009	.0480	.0074	.0035	.0229	.8101
SDev	.0006	.0004	.0003	.0001	.0001	.0255	1.603
%RSD	76.87	46.17	.5341	1.877	2.299	111.3	197.9
#1	-.0012	.0006	.0482	.0073	.0036	.0049	-.3235
#2	-.0003	.0012	.0478	.0075	.0035	.0410	1.944

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0126	.0016	.0301	.0536	-.0066	.4777	-.0040
SDev	.0002	.0100	.0002	.0030	.0014	.0048	.0008
%RSD	1.855	607.3	.6950	5.658	21.17	1.010	21.11
#1	.0125	-.0054	.0302	.0514	-.0076	.4811	-.0046
#2	.0128	.0087	.0299	.0557	-.0057	.4743	-.0034

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	96.79	-.0176	.0252	1.180	.0457	.0109	.0013
SDev	.52	.0180	.0120	.024	.0019	.0140	.0058
%RSD	.5403	102.2	47.75	2.058	4.265	128.2	442.4
#1	96.42	-.0304	.0167	1.163	.0443	.0010	-.0028
#2	97.16	-.0049	.0337	1.197	.0471	.0208	.0054

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0075	.0119	.0099	-.0146	-.0445	.0044	.0003
SDev	.0001	.0025	.0000	.0155	.0246	.0006	.0015
%RSD	.7184	20.67	.0924	106.0	55.32	14.22	446.0
#1	.0076	.0137	.0099	-.0255	-.0619	.0049	-.0007
#2	.0075	.0102	.0099	-.0037	-.0271	.0040	.0014

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0008	.0017	.0026
SDev	.0000	.0001	.0002
%RSD	2.114	6.227	6.576
#1	.0008	.0018	.0025
#2	.0008	.0016	.0027

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	774938	10000	--	--	--	--	--
SDev	4140.110	.0000000	--	--	--	--	--
%RSD	.5342501	.0000000	--	--	--	--	--
#1	772011	10000	--	--	--	--	--
#2	777866	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 588556RKL DF500 Operator:
Run Time: 02/05/16 23:07:03
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0028	-.0195	-.0029	-.0217	.0129	.0000	-.0140
SDev	.0007	.0009	.0060	.0002	.0000	.0000	.0015
%RSD	25.05	4.757	205.7	1.127	.0998	60.62	10.58
#1	-.0023	-.0202	.0013	-.0216	.0129	.0000	-.0130
#2	-.0033	-.0189	-.0072	-.0219	.0129	.0001	-.0151

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0455	-.0003	.0011	.0023	-.0008	.0842	-.0109
SDev	.0001	.0001	.0004	.0003	.0005	.0052	.0380
%RSD	.2346	44.24	36.10	13.30	62.78	6.157	349.2
#1	.0456	-.0004	.0014	.0025	-.0005	.0878	-.0377
#2	.0454	-.0002	.0008	.0021	-.0012	.0805	.0160

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0015	.0005	.0040	.0019	.0030	-.0160	-.1918
SDev	.0004	.0001	.0008	.0001	.0002	.0033	.1979
%RSD	28.62	10.12	19.13	3.528	5.896	20.47	103.2
#1	-.0012	.0005	.0045	.0020	.0029	-.0184	-.3318
#2	-.0019	.0006	.0034	.0019	.0031	-.0137	-.0519

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0030	-.0010	-.0101	.0234	-.0083	.1005	-.0079
SDev	.0008	.0067	.0018	.0015	.0009	.0008	.0013
%RSD	25.76	641.1	18.05	6.420	10.51	.7495	16.83
#1	.0036	-.0058	-.0088	.0245	-.0090	.1010	-.0089
#2	.0025	.0037	-.0114	.0224	-.0077	.0999	-.0070

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	99.38	-.0246	.0263	.0946	.0122	.0093	.0045
SDev	.50	.0037	.0121	.0019	.0016	.0093	.0027
%RSD	.5030	15.14	46.12	1.963	13.12	99.83	60.93
#1	99.74	-.0220	.0349	.0933	.0134	.0159	.0064
#2	99.03	-.0273	.0177	.0960	.0111	.0027	.0025

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0012	.0142	.0009	-.0278	-.0117	.0030	.0011
SDev	.0000	.0038	.0000	.0134	.0219	.0004	.0010
%RSD	.6370	26.92	1.859	48.00	187.8	13.50	92.94
#1	.0012	.0169	.0009	-.0373	.0038	.0032	.0004
#2	.0012	.0115	.0009	-.0184	-.0272	.0027	.0018

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0006	.0007	.0027
SDev	.0001	.0002	.0004
%RSD	10.53	24.28	13.92
#1	.0006	.0006	.0029
#2	.0005	.0008	.0024

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	795627	10000	--	--	--	--	--
SDev	4026.266	.0000000	--	--	--	--	--
%RSD	.5060495	.0000000	--	--	--	--	--
#1	798474	10000	--	--	--	--	--
#2	792780	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 588556RKAS DF100 Operator:
Run Time: 02/05/16 23:12:19
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0548	2.260	2.392	3.512	2.338	.0719	-.0089
SDev	.0001	.001	.021	.020	.003	.0000	.0052
%RSD	.1078	.0467	.8730	.5759	.1441	.0088	58.46
#1	.0549	2.260	2.406	3.497	2.336	.0719	-.0126
#2	.0548	2.259	2.377	3.526	2.340	.0719	-.0052

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.85	.0584	.5994	.2276	.2900	1.387	17.01
SDev	.04	.0004	.0004	.0019	.0015	.003	.03
%RSD	.1747	.7416	.0640	.8337	.5347	.2168	.1855
#1	20.82	.0581	.5991	.2263	.2890	1.385	16.99
#2	20.87	.0587	.5997	.2290	.2911	1.389	17.03

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0029	.0009	20.71	.6042	.0038	24.33	18.85
SDev	.0001	.0002	.02	.0008	.0013	.07	.51
%RSD	2.772	16.49	.1043	.1327	33.98	.2903	2.682
#1	-.0028	.0008	20.70	.6037	.0047	24.28	18.49
#2	-.0029	.0011	20.73	.6048	.0029	24.38	19.21

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.5721	-.0039	.6116	.6367	-.0067	.5670	.5921
SDev	.0028	.0168	.0039	.0021	.0008	.0270	.0003
%RSD	.4966	434.8	.6407	.3332	11.93	4.762	.0529
#1	.5742	-.0158	.6144	.6382	-.0073	.5861	.5919
#2	.5701	.0080	.6088	.6352	-.0062	.5479	.5923

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	94.60	2.416	2.447	5.151	.6277	2.434	-.0003
SDev	.68	.016	.005	.034	.0027	.009	.0021
%RSD	.7179	.6424	.2079	.6528	.4312	.3518	803.5
#1	95.08	2.405	2.443	5.128	.6296	2.428	.0012
#2	94.12	2.427	2.450	5.175	.6258	2.440	-.0018

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0070	.0071	.0127	2.342	-.0276	.5922	.0061
SDev	.0000	.0008	.0002	.071	.0327	.0021	.0029
%RSD	.0390	10.81	1.355	3.026	118.4	.3579	47.16
#1	.0070	.0066	.0126	2.392	-.0045	.5907	.0041
#2	.0070	.0077	.0128	2.292	-.0507	.5937	.0081

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0008	.6093	.0035
SDev	.0001	.0037	.0003
%RSD	12.59	.6086	7.188
#1	.0008	.6067	.0033
#2	.0009	.6119	.0037

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	757428	10000	--	--	--	--	--
SDev	5492.806	.0000000	--	--	--	--	--
%RSD	.7251918	.0000000	--	--	--	--	--
#1	761312	10000	--	--	--	--	--
#2	753544	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 590212RK DF100 Operator:
Run Time: 02/05/16 23:17:36
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0042	.0020	-.0026	-.0144	.4327	.0000	-.0126
SDev	.0003	.0049	.0026	.0019	.0019	.0000	.0064
%RSD	6.551	243.1	99.33	13.37	.4285	148.8	50.48
#1	-.0040	-.0014	-.0044	-.0130	.4314	-.0000	-.0171
#2	-.0044	.0055	-.0008	-.0158	.4340	.0000	-.0081

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0080	-.0004	.0049	.0020	.0048	.1912	.0123
SDev	.0002	.0001	.0008	.0001	.0008	.0093	.0031
%RSD	2.856	18.26	15.66	2.671	15.83	4.862	25.43
#1	.0079	-.0004	.0055	.0019	.0054	.1978	.0145
#2	.0082	-.0005	.0044	.0020	.0043	.1846	.0101

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0032	.0005	-.0030	.0028	.0053	.0075	-.0944
SDev	.0003	.0000	.0027	.0001	.0011	.0018	.1528
%RSD	9.088	.7893	91.76	3.352	21.12	24.21	161.8
#1	-.0030	.0005	-.0049	.0029	.0061	.0062	-.2025
#2	-.0034	.0005	-.0011	.0027	.0045	.0087	.0136

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0074	.0069	.0562	.0829	-.0086	.6309	-.0073
SDev	.0004	.0018	.0019	.0005	.0033	.0092	.0042
%RSD	5.388	25.50	3.327	.6500	38.59	1.462	57.97
#1	.0077	.0056	.0575	.0833	-.0062	.6244	-.0043
#2	.0071	.0081	.0548	.0825	-.0109	.6374	-.0103

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	98.05	-.0241	.0228	.7995	.0739	.0072	-.0007
SDev	.22	.0083	.0005	.0012	.0010	.0031	.0005
%RSD	.2193	34.64	2.237	.1479	1.327	43.34	67.59
#1	98.21	-.0182	.0232	.8004	.0746	.0094	-.0011
#2	97.90	-.0300	.0225	.7987	.0732	.0050	-.0004

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0061	.0121	.0078	-.0136	-.0215	.0030	.0062
SDev	.0000	.0000	.0001	.0119	.0054	.0008	.0031
%RSD	.2251	.2663	1.251	87.13	25.10	28.11	50.08
#1	.0061	.0120	.0079	-.0052	-.0177	.0036	.0084
#2	.0062	.0121	.0077	-.0220	-.0253	.0024	.0040

010431

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0006	.0004	.0027
SDev	.0002	.0001	.0008
%RSD	34.42	17.50	29.72
#1	.0008	.0005	.0033
#2	.0005	.0004	.0021

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	785055	10000	--	--	--	--	--
SDev	1699.885	.0000000	--	--	--	--	--
%RSD	.2165306	.0000000	--	--	--	--	--
#1	786257	10000	--	--	--	--	--
#2	783853	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 590213RK DF100 Operator:
Run Time: 02/05/16 23:22:53
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0015	.0284	-.0072	-.0163	.0090	.0001	-.0074
SDev	.0013	.0082	.0105	.0007	.0002	.0001	.0051
%RSD	84.25	28.93	147.2	4.400	1.798	115.0	68.83
#1	-.0024	.0226	-.0146	-.0168	.0089	.0000	-.0110
#2	-.0006	.0342	.0003	-.0158	.0092	.0001	-.0038

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2234	-.0002	.0017	.0030	.0082	.2004	.0727
SDev	.0004	.0005	.0001	.0002	.0008	.0027	.0312
%RSD	.1721	195.7	5.218	6.582	9.990	1.326	42.95
#1	.2231	-.0006	.0017	.0028	.0088	.1986	.0506
#2	.2237	.0001	.0018	.0031	.0076	.2023	.0948

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0000	.0006	.0460	.0066	.0052	.0256	.2117
SDev	.0006	.0001	.0054	.0001	.0007	.0063	.5441
%RSD	55260.	18.49	11.87	1.628	13.52	24.44	257.0
#1	-.0004	.0005	.0421	.0066	.0047	.0211	-.1730
#2	.0004	.0007	.0498	.0067	.0057	.0300	.5965

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0039	.0125	.0075	.0423	-.0070	.3413	-.0008
SDev	.0001	.0073	.0033	.0014	.0024	.0083	.0061
%RSD	2.280	58.07	44.22	3.317	35.02	2.436	762.1
#1	.0040	.0177	.0099	.0413	-.0052	.3354	-.0051
#2	.0038	.0074	.0052	.0433	-.0087	.3472	.0035

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	98.50	-.0293	.0211	1.766	.0307	.0043	.0005
SDev	.24	.0030	.0050	.008	.0002	.0043	.0001
%RSD	.2403	10.18	23.67	.4382	.5706	100.3	27.58
#1	98.66	-.0314	.0176	1.760	.0308	.0013	.0006
#2	98.33	-.0272	.0246	1.771	.0305	.0074	.0004

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0041	.0172	.0161	-.0227	-.0185	.0033	.0025
SDev	.0001	.0006	.0004	.0001	.0519	.0008	.0007
%RSD	2.560	3.794	2.210	.3817	281.3	25.45	29.11
#1	.0040	.0176	.0159	-.0226	-.0552	.0027	.0020
#2	.0042	.0167	.0164	-.0228	.0182	.0038	.0030

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0007	.0015	.0036
SDev	.0002	.0002	.0008
%RSD	22.96	10.96	20.66
#1	.0006	.0016	.0031
#2	.0009	.0014	.0042

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	788599	10000	--	--	--	--	--
SDev	1927.573	.0000000	--	--	--	--	--
%RSD	.2444301	.0000000	--	--	--	--	--
#1	789962	10000	--	--	--	--	--
#2	787236	10000	--	--	--	--	--

Method: DAILY1 Sample Name: CCV Operator:
Run Time: 02/05/16 23:28:08
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.030	10.10	5.274	5.231	9.979	H1.126	5.055
SDev	.008	.06	.023	.041	.046	.050	.037
%RSD	.8164	.6318	.4291	.7887	.4561	4.471	.7380
#1	1.024	10.05	5.290	5.201	9.946	H1.162	5.028
#2	1.036	10.14	5.258	5.260	10.01	1.091	5.081
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	1.100	11.00	5.500	5.500	11.00	1.100	5.500
Low	.9000	9.000	4.500	4.500	9.000	.9000	4.500

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.08	1.063	5.145	2.004	2.005	9.891	19.12
SDev	.05	.004	.025	.005	.003	.019	.10
%RSD	.2320	.3395	.4871	.2705	.1695	.1886	.5346
#1	20.05	1.060	5.127	2.000	2.007	9.904	19.05
#2	20.12	1.065	5.162	2.008	2.002	9.878	19.19
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.00	1.100	5.500	2.200	2.200	11.00	22.00
Low	18.00	.9000	4.500	1.800	1.800	9.000	18.00

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.010	5.461	20.07	1.039	4.955	H38.56	28.94
SDev	.002	.009	.09	.004	.000	.09	.74
%RSD	.0420	.1689	.4252	.3407	.0014	.2256	2.557
#1	5.011	5.455	20.01	1.036	4.955	H38.50	28.41
#2	5.008	5.468	20.13	1.041	4.955	H38.62	29.46
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	5.500	5.500	22.00	1.100	5.500	33.00	33.00
Low	4.500	4.500	18.00	.9000	4.500	27.00	27.00

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.016	4.714	5.061	5.064	.9667	1.043	1.009
SDev	.051	.051	.077	.001	.0143	.010	.000
%RSD	1.016	1.088	1.517	.0253	1.475	.9680	.0416
#1	4.980	4.750	5.007	5.065	.9768	1.050	1.009
#2	5.052	4.677	5.116	5.063	.9566	1.036	1.009
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	5.500	5.500			1.100	1.100	1.100
Low	4.500	4.500			.9000	.9000	.9000

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	95.78	5.427	5.407	5.019	5.058	5.409	5.099
SDev	.28	.101	.003	.028	.025	.036	.001
%RSD	.2900	1.852	.0631	.5552	.4885	.6610	.0205
#1	95.98	5.356	5.405	4.999	5.040	5.383	5.099
#2	95.58	5.498	5.410	5.039	5.075	5.434	5.100
Errors	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass
High				5.500	5.500	5.500	5.500
Low				4.500	4.500	4.500	4.500

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.056	1.011	4.954	5.223	5.035	5.173	1.094
SDev	.007	.023	.001	.047	.032	.017	.011
%RSD	.1428	2.233	.0145	.9055	.6381	.3371	.9715
#1	5.061	1.027	4.954	5.257	5.057	5.160	1.086
#2	5.051	.9954	4.953	5.190	5.012	5.185	H1.101
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.500	1.100	5.500	5.500	5.500	5.500	1.100
Low	4.500	.9000	4.500	4.500	4.500	4.500	.9000

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	5.095	1.060	5.082
SDev	.012	.004	.009
%RSD	.2425	.3585	.1801
#1	5.104	1.057	5.088
#2	5.086	1.063	5.075
Errors	LC Pass	LC Pass	LC Pass
High	5.500	1.100	5.500
Low	4.500	.9000	4.500

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	766800	10000	--	--	--	--	--
SDev	2219.608	.0000000	--	--	--	--	--
%RSD	.2894640	.0000000	--	--	--	--	--
#1	768369	10000	--	--	--	--	--
#2	765230	10000	--	--	--	--	--

Method: DAILY1 Sample Name: CCB Operator:
Run Time: 02/05/16 23:33:25
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0015	.0107	.0041	.0126	.0004	.0001	-.0020
SDev	.0064	.0356	.0077	.0011	.0001	.0001	.0176
%RSD	438.2	331.9	187.9	8.538	15.19	94.16	888.7
#1	-.0031	-.0144	-.0013	.0119	.0005	.0000	L-.0144
#2	H.0060	.0359	H.0095	.0134	.0004	.0002	H.0105
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0050	.0500	.0050	.0500	.0050	.0050	.0100
Low	-.0050	-.0500	-.0050	-.0500	-.0050	-.0050	-.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0034	.0003	.0018	.0009	.0013	.0308	.0493
SDev	.0041	.0008	.0045	.0008	.0044	.0071	.1419
%RSD	118.1	250.5	247.9	92.19	345.2	23.02	288.2
#1	.0006	-.0003	-.0014	.0014	-.0019	.0358	-.0511
#2	.0063	.0009	.0050	.0003	.0044	.0258	H.1496
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0500	.0050	.0050	.0050	.0050	.0500	.1000
Low	-.0500	-.0050	-.0050	-.0050	-.0050	-.0500	-.1000

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0029	.0006	.0106	.0002	.0015	.0111	H.6135
SDev	.0069	.0004	.0197	.0000	.0003	.0195	1.389
%RSD	233.0	61.60	186.1	6.815	21.21	176.0	226.5
#1	-.0019	.0003	-.0033	.0002	.0013	-.0027	L-.3690
#2	H.0078	.0009	.0245	.0002	.0017	.0249	H1.596
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High
High	.0050	.0050	.0500	.0050	.0050	.0500	.0500
Low	-.0050	-.0050	-.0500	-.0050	-.0050	-.0500	-.0500

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0006	-.0139	.0021	-.0017	H.0087	H.0340	.0091
SDev	.0001	.0057	.0237	.0125	.0198	.0104	.0217
%RSD	11.86	40.67	1109.	718.1	228.1	30.73	239.6
#1	-.0005	-.0179	-.0146	.0071	L-.0053	H.0266	-.0063
#2	-.0006	-.0099	.0189	-.0106	H.0227	H.0414	H.0244
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC High	LC High	LC Pass
High	.0050	.0200			.0050	.0200	.0100
Low	-.0050	-.0200			-.0050	-.0200	-.0100

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	98.66	.0063	-.0014	.0094	-.0004	.0012	.0067
SDev	.20	.0244	.0185	.0146	.0004	.0042	.0114
%RSD	.1993	388.3	1354.	155.7	98.92	351.0	170.6
#1	98.52	-.0110	.0117	-.0009	-.0001	.0042	-.0014
#2	98.79	.0235	-.0144	H.0197	-.0008	-.0018	H.0147
Errors	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass
High				.0100	.0050	.0050	.0100
Low				-.0100	-.0050	-.0050	-.0100

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0001	.0011	.0007	-.0087	.0599	.0022	H.0128
SDev	.0003	.0003	.0022	.0177	.1240	.0006	.0033
%RSD	446.5	27.95	307.3	203.7	206.9	27.44	25.68
#1	-.0002	.0009	-.0009	L-.0212	-.0278	.0027	H.0151
#2	.0003	.0013	.0023	.0038	H.1476	.0018	H.0105
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High
High	.0050	.0100	.0050	.0100	.1000	.0050	.0100
Low	-.0050	-.0100	-.0050	-.0100	-.1000	-.0050	-.0100

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0004	.0008	.0018
SDev	.0001	.0013	.0003
%RSD	25.83	165.2	16.05
#1	.0004	-.0001	.0021
#2	.0003	.0017	.0016
Errors	LC Pass	LC Pass	LC Pass
High	.0050	.0050	.0050
Low	-.0050	-.0050	-.0050

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	789845	10000	--	--	--	--	--
SDev	1554.221	.0000000	--	--	--	--	--
%RSD	.1967754	.0000000	--	--	--	--	--
#1	788746	10000	--	--	--	--	--
#2	790944	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 590214RK DF100 Operator:
Run Time: 02/05/16 23:38:42
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0034	.3327	-.0043	-.0166	.0038	.0001	-.0065
SDev	.0008	.0072	.0016	.0012	.0001	.0000	.0013
%RSD	24.91	2.165	36.50	7.485	2.081	49.52	20.15
#1	-.0040	.3276	-.0032	-.0157	.0038	.0000	-.0074
#2	-.0028	.3378	-.0054	-.0175	.0037	.0001	-.0056

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1731	-.0004	.0121	.0024	.0061	.3010	.0768
SDev	.0010	.0003	.0003	.0009	.0004	.0110	.0299
%RSD	.5773	64.94	2.816	36.58	5.882	3.663	38.92
#1	.1724	-.0006	.0124	.0030	.0063	.3088	.0556
#2	.1738	-.0002	.0119	.0018	.0058	.2932	.0979

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0020	.0008	.0566	.0127	.0038	.0462	-.1374
SDev	.0014	.0001	.0040	.0000	.0006	.0039	.5264
%RSD	67.70	7.736	7.032	.3143	16.38	8.444	383.0
#1	-.0030	.0008	.0538	.0128	.0042	.0434	-.5096
#2	-.0010	.0008	.0594	.0127	.0034	.0490	.2348

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0174	.0087	-.0169	.0122	-.0062	.0234	-.0003
SDev	.0002	.0002	.0026	.0012	.0009	.0065	.0007
%RSD	1.306	1.974	15.25	9.858	14.44	28.01	204.3
#1	.0173	.0086	-.0151	.0113	-.0068	.0187	.0001
#2	.0176	.0088	-.0188	.0130	-.0055	.0280	-.0008

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	97.98	-.0210	.0268	2.588	.0025	.0109	.0023
SDev	.31	.0006	.0056	.035	.0001	.0039	.0035
%RSD	.3194	2.680	20.77	1.334	2.384	35.88	154.5
#1	98.20	-.0214	.0229	2.564	.0025	.0081	.0048
#2	97.75	-.0206	.0307	2.613	.0024	.0136	-.0002

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0011	.0177	.0226	.0023	-.0080	.0065	.0019
SDev	.0000	.0007	.0003	.0033	.0077	.0001	.0006
%RSD	3.746	3.943	1.158	146.0	95.71	1.574	30.00
#1	.0010	.0172	.0224	.0046	-.0135	.0066	.0023
#2	.0011	.0182	.0227	-.0001	-.0026	.0064	.0015

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0006	.0013	.0055
SDev	.0001	.0004	.0008
%RSD	23.06	32.84	14.19
#1	.0007	.0016	.0060
#2	.0005	.0010	.0049

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	784428	10000	--	--	--	--	--
SDev	2527.907	.0000000	--	--	--	--	--
%RSD	.3222614	.0000000	--	--	--	--	--
#1	786215	10000	--	--	--	--	--
#2	782640	10000	--	--	--	--	--

Analysis Report 02/05/16 11:48:57 PM

Method: DAILY1 Sample Name: 591000RK DF100 Operator:
Run Time: 02/05/16 23:44:00
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0038	.4350	-.0117	-.0179	.0241	.0001	-.0121
SDev	.0010	.0009	.0075	.0002	.0000	.0000	.0073
%RSD	26.07	.1984	64.19	.8641	.1128	26.72	60.07
#1	-.0044	.4356	-.0169	-.0180	.0241	.0001	-.0172
#2	-.0031	.4344	-.0064	-.0178	.0241	.0000	-.0070

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0203	-.0004	.0007	.0025	-.0002	.3631	.0762
SDev	.0021	.0001	.0003	.0010	.0004	.0082	.0089
%RSD	10.44	27.84	47.37	38.66	186.7	2.249	11.71
#1	.0188	-.0005	.0005	.0018	-.0005	.3574	.0698
#2	.0218	-.0003	.0010	.0032	.0001	.3689	.0825

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0023	-.0002	.0633	.0122	.0024	.0214	-.3033
SDev	.0017	.0013	.0021	.0001	.0006	.0026	.1343
%RSD	72.51	773.9	3.345	.4428	22.54	12.13	44.29
#1	-.0035	.0007	.0618	.0122	.0020	.0196	-.3983
#2	-.0011	-.0011	.0648	.0123	.0028	.0232	-.2083

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0023	.0087	.0116	.0353	-.0068	.2370	-.0071
SDev	.0001	.0006	.0022	.0002	.0013	.0178	.0035
%RSD	6.010	6.728	18.67	.6215	18.91	7.525	49.59
#1	.0024	.0092	.0131	.0352	-.0059	.2496	-.0096
#2	.0022	.0083	.0101	.0355	-.0077	.2244	-.0046

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	97.70	-.0202	.0168	2.125	.0274	.0045	-.0006
SDev	.68	.0008	.0052	.020	.0006	.0032	.0020
%RSD	.6911	4.188	31.08	.9195	2.098	71.16	309.3
#1	97.22	-.0208	.0205	2.111	.0278	.0068	.0008
#2	98.18	-.0196	.0131	2.138	.0270	.0022	-.0021

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0017	.0112	.0231	-.0320	-.0267	.0037	.0078
SDev	.0000	.0025	.0003	.0082	.0240	.0006	.0002
%RSD	2.109	22.07	1.375	25.72	90.09	16.90	2.696
#1	.0016	.0095	.0229	-.0379	-.0436	.0032	.0080
#2	.0017	.0130	.0234	-.0262	-.0097	.0041	.0077

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0007	.0012	.0033
SDev	.0003	.0003	.0011
%RSD	38.70	21.88	32.27
#1	.0005	.0010	.0026
#2	.0008	.0014	.0041

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	782163	10000	--	--	--	--	--
SDev	5409.367	.0000000	--	--	--	--	--
%RSD	.6915907	.0000000	--	--	--	--	--
#1	778338	10000	--	--	--	--	--
#2	785988	10000	--	--	--	--	--

Method: DAILY1 Sample Name: CRI Operator:
Run Time: 02/05/16 23:49:15
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0078	.1093	L.0038	H.0973	.0056	.0062	L.0070
SDev	.0002	.0026	.0029	.0004	.0000	.0001	.0033
%RSD	2.015	2.383	76.82	.4305	.0116	.8750	47.02
#1	.0077	.1075	L.0017	H.0970	.0056	.0062	L.0047
#2	.0079	.1112	.0059	H.0976	.0056	.0062	L.0093
Errors	LC Pass	LC Pass	LC Low	LC High	LC Pass	LC Pass	LC Low
High	.0150	.1500	.0150	.0600	.0075	.0075	.0300
Low	.0050	.0500	.0050	.0200	.0025	.0025	.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1008	.0049	.0044	.0066	.0031	.1455	.2889
SDev	.0000	.0001	.0006	.0003	.0007	.0066	.0240
%RSD	.0412	1.322	14.40	5.192	22.38	4.546	8.293
#1	.1008	.0049	.0039	.0063	.0026	H.1502	.2719
#2	.1009	.0048	.0048	.0068	.0036	.1408	.3058
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.1500	.0075	.0075	.0075	.0075	.1500	.7500
Low	.0500	.0025	.0025	.0025	.0025	.0500	.2500

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0087	.0105	.0452	.0054	H.0080	.2863	L.0298
SDev	.0007	.0001	.0022	.0001	.0010	.0039	.3198
%RSD	7.710	1.109	4.872	1.557	12.63	1.361	1072.
#1	.0082	.0104	.0436	.0055	.0073	.2835	L-.1963
#2	.0092	.0106	.0467	.0054	H.0087	.2890	.2559
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Low
High	.0150	.0150	.1000	.0075	.0075	.5000	.5000
Low	.0050	.0050	.0250	.0025	.0025	.1250	.1250

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0050	.0432	-.0119	.0133	.0126	.0690	.0238
SDev	.0002	.0010	.0019	.0016	.0010	.0011	.0001
%RSD	4.805	2.413	16.10	12.29	7.670	1.628	.2157
#1	.0048	.0439	-.0133	.0145	.0119	.0698	.0238
#2	.0052	.0425	-.0105	.0122	.0133	.0682	.0238
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	.0075	.0750			.0300	.0750	.0300
Low	.0025	.0250			.0100	.0250	.0100

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	99.03	-.0132	.0290	H.6370	.0049	.0149	.0067
SDev	.31	.0082	.0019	.0067	.0004	.0015	.0014
%RSD	.3149	62.02	6.497	1.060	9.213	9.880	21.56
#1	99.25	-.0074	.0277	H.6322	.0052	H.0160	.0057
#2	98.81	-.0190	.0303	H.6417	.0046	.0139	.0077
Errors	NOCHECK	NOCHECK	NOCHECK	LC High	LC Pass	LC Pass	LC Pass
High				.1500	.0075	.0150	.0150
Low				.0500	.0025	.0050	.0050

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0052	H.0339	.0037	L.0017	.1661	.0073	.0229
SDev	.0001	.0022	.0001	.0221	.0283	.0004	.0006
%RSD	1.110	6.357	3.080	1267.	17.05	5.239	2.575
#1	.0052	H.0324	.0037	L-.0139	.1461	H.0076	.0225
#2	.0052	H.0354	.0036	.0173	.1861	.0070	.0233
Errors	LC Pass	LC High	LC Pass	LC Low	LC Pass	LC Pass	LC Pass
High	.0075	.0300	.0075	.0300	.3000	.0075	.0300
Low	.0025	.0100	.0025	.0100	.1000	.0025	.0100

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0057	.0049	H.0079
SDev	.0001	.0002	.0002
%RSD	1.614	3.952	2.131
#1	.0057	.0048	H.0081
#2	.0056	.0050	H.0078
Errors	LC Pass	LC Pass	LC High
High	.0075	.0075	.0075
Low	.0025	.0025	.0025

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	792900	10000	--	--	--	--	--
SDev	2486.188	.0000000	--	--	--	--	--
%RSD	.3135562	.0000000	--	--	--	--	--
#1	794658	10000	--	--	--	--	--
#2	791142	10000	--	--	--	--	--

Method: DAILY1 Sample Name: CRI-N Operator:
Run Time: 02/05/16 23:54:31
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0178	.2184	L.0104	H.1623	.0096	.0123	.0355
SDev	.0013	.0089	.0003	.0036	.0015	.0001	.0155
%RSD	7.071	4.068	3.164	2.234	16.10	1.080	43.60
#1	.0169	.2121	L.0102	H.1597	.0085	.0122	L.0246
#2	.0187	.2247	L.0106	H.1649	.0107	.0124	.0465
Errors	LC Pass	LC Pass	LC Low	LC High	LC Pass	LC Pass	LC Pass
High	.0260	.2600	.0260	.1040	.0130	.0130	.0520
Low	.0140	.1400	.0140	.0560	.0070	.0070	.0280

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1995	.0102	.0091	.0089	.0083	.1831	L.5902
SDev	.0032	.0001	.0002	.0053	.0006	.0927	.0517
%RSD	1.612	.9939	2.311	58.86	6.600	50.63	8.758
#1	.1973	.0102	.0093	L.0052	.0079	L.1176	L.5536
#2	.2018	.0103	.0090	.0126	.0087	.2487	L.6267
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low
High	.2600	.0130	.0130	.0130	.0130	.2600	1.300
Low	.1400	.0070	.0070	.0070	.0070	.1400	.7000

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0181	.0215	.0988	.0101	.0118	.5642	.4711
SDev	.0018	.0001	.0027	.0008	.0052	.0003	.5485
%RSD	10.09	.2811	2.752	8.357	44.31	.0540	116.4
#1	.0168	.0215	.0969	.0095	.0081	.5644	L.0833
#2	.0194	.0216	.1007	.0107	H.0155	.5640	H.8590
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0260	.0260	.1300	.0130	.0130	.6500	.6500
Low	.0140	.0140	.0700	.0070	.0070	.3500	.3500

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0076	.0934	-.0018	.0183	.0327	.0954	.0374
SDev	.0047	.0203	.0089	.0055	.0014	.0161	.0024
%RSD	62.32	21.70	495.7	30.30	4.214	16.87	6.566
#1	L.0042	.0791	.0045	.0144	.0317	.1067	.0356
#2	.0109	.1078	-.0081	.0222	.0337	.0840	.0391
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	.0130	.1300			.0520	.1300	.0520
Low	.0070	.0700			.0280	.0700	.0280

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	98.84	.0078	.0393	H.9290	.0116	H.0288	.0229
SDev	.20	.0186	.0183	.0172	.0007	.0060	.0050
%RSD	.2063	238.5	46.53	1.850	6.149	20.86	21.61
#1	98.70	.0209	.0264	H.9169	.0111	.0245	.0194
#2	98.99	-.0053	.0522	H.9412	.0121	H.0330	H.0264
Errors	NOCHECK	NOCHECK	NOCHECK	LC High	LC Pass	LC High	LC Pass
High				.2600	.0130	.0260	.0260
Low				.1400	.0070	.0140	.0140

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0105	.0447	.0083	L.0154	.3703	.0090	.0495
SDev	.0000	.0093	.0002	.0093	.0480	.0055	.0028
%RSD	.0605	20.90	2.923	60.55	12.97	60.61	5.735
#1	.0105	.0381	.0085	L.0220	.3363	L.0051	.0475
#2	.0105	.0513	.0082	L.0088	.4042	.0129	.0516
Errors	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass	LC Pass
High	.0130	.0520	.0130	.0520	.5200	.0130	.0520
Low	.0070	.0280	.0070	.0280	.2800	.0070	.0280

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0099	.0100	.0088
SDev	.0016	.0004	.0076
%RSD	16.39	3.589	87.15
#1	.0088	.0097	L.0034
#2	.0111	.0102	H.0142
Errors	LC Pass	LC Pass	LC Pass
High	.0130	.0130	.0130
Low	.0070	.0070	.0070

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	791388	10000	--	--	--	--	--
SDev	1631.295	.0000000	--	--	--	--	--
%RSD	.2061308	.0000000	--	--	--	--	--
#1	790235	10000	--	--	--	--	--
#2	792542	10000	--	--	--	--	--

Method: DAILY1 Sample Name: ICSA Operator:
Run Time: 02/05/16 23:59:46
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0053	491.9	-.0089	.1049	.0028	.0001	-.0188
SDev	.0011	.2	.0002	.0012	.0001	.0000	.0030
%RSD	20.42	.0376	1.757	1.139	4.469	23.86	15.76
#1	-.0045	491.8	-.0090	.1058	.0029	.0000	-.0209
#2	-.0060	492.1	-.0088	.1041	.0027	.0001	-.0167
Errors	NOCHECK	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High		600.0					
Low		400.0					

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	453.3	-.0005	-.0031	.0005	.0003	198.6	-.0287
SDev	.7	.0000	.0002	.0003	.0014	.1	.0205
%RSD	.1627	6.088	7.583	65.57	546.0	.0645	71.43
#1	453.9	-.0005	-.0030	.0007	.0013	198.5	-.0432
#2	452.8	-.0006	-.0033	.0003	-.0007	198.7	-.0142
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	NOCHECK
High	600.0					240.0	
Low	400.0					160.0	

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0043	.0019	524.5	.0195	-.0002	.1047	-.4048
SDev	.0009	.0000	1.0	.0001	.0016	.0056	.3219
%RSD	21.70	1.483	.1821	.3242	943.3	5.354	79.52
#1	-.0037	.0018	525.2	.0194	-.0013	.1007	-.6323
#2	-.0050	.0019	523.8	.0195	.0009	.1087	-.1772
Errors	NOCHECK	NOCHECK	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High			600.0				
Low			400.0				

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0035	.0033	-.0825	.0304	-.0031	.0042	.0018
SDev	.0001	.0021	.0012	.0040	.0023	.0193	.0039
%RSD	2.818	63.30	1.398	13.32	74.96	461.5	213.8
#1	.0035	.0018	-.0817	.0275	-.0047	.0179	-.0009
#2	.0036	.0048	-.0834	.0332	-.0015	-.0095	.0046
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	89.72	-.0341	.0144	.8220	-.0073	-.0018	-.0015
SDev	.03	.0070	.0062	.0030	.0023	.0065	.0001
%RSD	.0292	20.51	43.22	.3671	31.72	369.0	4.500
#1	89.74	-.0390	.0100	.8241	-.0089	-.0063	-.0014
#2	89.71	-.0291	.0188	.8198	-.0056	.0028	-.0015
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0073	-.0437	.0029	.4665	.0263	.0070	.0018
SDev	.0000	.0041	.0006	.0289	.0314	.0003	.0045
%RSD	.2295	9.484	20.27	6.186	119.4	4.558	255.9
#1	.0074	-.0467	.0033	.4869	.0485	.0072	.0050
#2	.0073	-.0408	.0025	.4461	.0041	.0068	-.0014
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0037	-.0035	.0036
SDev	.0001	.0005	.0006
%RSD	3.201	15.29	17.76
#1	.0038	-.0031	.0041
#2	.0037	-.0039	.0032
Errors	NOCHECK	NOCHECK	NOCHECK
High			
Low			

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	718466	10000	--	--	--	--	--
SDev	180.3122	.0000000	--	--	--	--	--
%RSD	.0250968	.0000000	--	--	--	--	--
#1	718594	10000	--	--	--	--	--
#2	718339	10000	--	--	--	--	--

Method: DAILY1 Sample Name: ICSAB Operator:
Run Time: 02/06/16 00:05:03
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.131	490.7	1.096	1.147	.5371	H.6241	-.0204
SDev	.000	1.3	.003	.005	.0021	.0175	.0024
%RSD	.0163	.2609	.2596	.4786	.3984	2.801	11.68
#1	1.131	489.8	1.098	1.143	.5355	H.6365	-.0221
#2	1.131	491.6	1.094	1.151	.5386	H.6117	-.0187
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	NOCHECK
High	1.200	600.0	1.200	1.200	.6000	.6000	
Low	.8000	400.0	.8000	.8000	.4000	.4000	

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	447.1	1.045	.5089	.5056	.5391	197.3	-.0322
SDev	.3	.001	.0013	.0010	.0010	.2	.0036
%RSD	.0725	.1087	.2557	.2048	.1923	.1073	11.26
#1	446.8	1.044	.5080	.5049	.5384	197.5	-.0347
#2	447.3	1.046	.5098	.5063	.5398	197.2	-.0296
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK
High	600.0	1.200	.6000	.6000	.6000	240.0	
Low	400.0	.8000	.4000	.4000	.4000	160.0	

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0037	H1.205	515.8	.5437	1.069	.0663	-.4615
SDev	.0003	.004	.8	.0004	.003	.0031	.1372
%RSD	6.961	.3313	.1495	.0656	.2615	4.614	29.72
#1	-.0039	H1.208	516.4	.5440	1.067	.0641	-.5585
#2	-.0036	H1.202	515.3	.5435	1.071	.0685	-.3646
Errors	NOCHECK	LC High	LC Pass	LC Pass	LC Pass	NOCHECK	NOCHECK
High		1.200	600.0	.6000	1.200		
Low		.8000	400.0	.4000	.8000		

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9903	.9763	.9200	1.036	-.0089	.0107	1.120
SDev	.0089	.0031	.0232	.013	.0014	.0144	.005
%RSD	.9039	.3157	2.526	1.288	15.73	134.6	.4667
#1	.9966	.9741	.9364	1.026	-.0099	.0209	1.117
#2	.9840	.9785	.9035	1.045	-.0079	.0005	1.124
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass
High	1.200	1.200					1.200
Low	.8000	.8000					.8000

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	88.51	1.089	1.112	1.451	.9963	1.104	1.046
SDev	.42	.043	.012	.003	.0011	.006	.007
%RSD	.4746	3.917	1.123	.2044	.1155	.5335	.6757
#1	88.21	1.119	1.104	1.453	.9955	1.108	1.041
#2	88.80	1.059	1.121	1.449	.9971	1.099	1.051
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					1.200	1.200	1.200
Low					.8000	.8000	.8000

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.067	-.0355	1.023	H1.425	1.031	.5322	.0116
SDev	.007	.0092	.002	.018	.001	.0008	.0102
%RSD	.6899	25.76	.2216	1.250	.1203	.1442	87.55
#1	1.062	-.0420	1.021	H1.438	1.032	.5328	.0188
#2	1.072	-.0291	1.025	H1.412	1.030	.5317	.0044
Errors	LC Pass	NOCHECK	LC Pass	LC High	NOCHECK	LC Pass	NOCHECK
High	1.200		1.200	1.200		.6000	
Low	.8000		.8000	.8000		.4000	

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0037	1.055	.9393
SDev	.0001	.009	.0060
%RSD	2.452	.8357	.6415
#1	.0036	1.049	.9350
#2	.0037	1.062	.9435
Errors	NOCHECK	LC Pass	NOCHECK
High		1.200	
Low		.8000	

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	708677	10000	--	--	--	--	--
SDev	3317.745	.0000000	--	--	--	--	--
%RSD	.4681604	.0000000	--	--	--	--	--
#1	706331	10000	--	--	--	--	--
#2	711023	10000	--	--	--	--	--

Method: DAILY1 Sample Name: CCV Operator:
Run Time: 02/06/16 00:10:19
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.034	10.11	5.331	5.287	10.14	H1.103	5.114
SDev	.000	.01	.034	.033	.13	.051	.081
%RSD	.0164	.1140	.6388	.6314	1.284	4.637	1.581
#1	1.034	10.12	5.355	5.311	10.23	H1.140	5.171
#2	1.034	10.10	5.307	5.263	10.04	1.067	5.057
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	1.100	11.00	5.500	5.500	11.00	1.100	5.500
Low	.9000	9.000	4.500	4.500	9.000	.9000	4.500

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.01	1.078	5.190	2.022	2.023	10.03	19.19
SDev	.01	.016	.026	.009	.003	.02	.08
%RSD	.0468	1.479	.5063	.4644	.1667	.2473	.4389
#1	20.01	1.089	5.208	2.028	2.026	10.05	19.25
#2	20.00	1.066	5.171	2.015	2.021	10.01	19.14
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.00	1.100	5.500	2.200	2.200	11.00	22.00
Low	18.00	.9000	4.500	1.800	1.800	9.000	18.00

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.050	5.479	20.00	1.047	5.050	H38.67	28.99
SDev	.001	.061	.09	.006	.065	.31	.53
%RSD	.0224	1.105	.4364	.5437	1.296	.8144	1.838
#1	5.049	H5.522	20.06	1.051	5.096	H38.89	28.62
#2	5.051	5.436	19.94	1.043	5.003	H38.44	29.37
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	5.500	5.500	22.00	1.100	5.500	33.00	33.00
Low	4.500	4.500	18.00	.9000	4.500	27.00	27.00

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.999	4.689	5.062	5.070	.9804	1.034	1.013
SDev	.031	.021	.044	.021	.0006	.023	.002
%RSD	.6273	.4475	.8635	.4200	.0647	2.209	.1485
#1	5.021	4.704	5.092	5.055	.9809	1.017	1.014
#2	4.977	4.674	5.031	5.085	.9800	1.050	1.012
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	5.500	5.500			1.100	1.100	1.100
Low	4.500	4.500			.9000	.9000	.9000

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	95.86	5.414	5.393	4.937	5.062	5.395	5.123
SDev	.78	.042	.009	.033	.000	.008	.026
%RSD	.8164	.7829	.1583	.6677	.0073	.1562	.5097
#1	95.31	5.444	5.387	4.960	5.062	5.401	5.142
#2	96.42	5.384	5.399	4.914	5.062	5.389	5.105
Errors	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass
High				5.500	5.500	5.500	5.500
Low				4.500	4.500	4.500	4.500

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.101	1.048	4.962	5.288	5.062	5.204	H1.109
SDev	.018	.003	.002	.028	.014	.022	.009
%RSD	.3444	.2835	.0324	.5360	.2711	.4169	.8098
#1	5.113	1.046	4.963	5.268	5.071	5.220	H1.116
#2	5.088	1.050	4.961	5.308	5.052	5.189	H1.103
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High
High	5.500	1.100	5.500	5.500	5.500	5.500	1.100
Low	4.500	.9000	4.500	4.500	4.500	4.500	.9000

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	5.094	1.069	5.092
SDev	.001	.009	.008
%RSD	.0150	.8093	.1527
#1	5.093	1.075	5.098
#2	5.094	1.063	5.087
Errors	LC Pass	LC Pass	LC Pass
High	5.500	1.100	5.500
Low	4.500	.9000	4.500

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	767491	10000	--	--	--	--	--
SDev	6246.582	.0000000	--	--	--	--	--
%RSD	.8138964	.0000000	--	--	--	--	--
#1	763074	10000	--	--	--	--	--
#2	771908	10000	--	--	--	--	--

Analysis Report 02/06/16 00:20:36 AM

Method: DAILY1 Sample Name: CCB Operator:
Run Time: 02/06/16 00:15:35
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0027	-.0093	L-.0054	.0119	.0005	.0000	L-.0157
SDev	.0010	.0058	.0029	.0052	.0000	.0000	.0063
%RSD	36.29	62.49	52.69	43.42	8.118	.8811	40.33
#1	-.0033	-.0134	-.0034	.0156	.0005	.0000	L-.0202
#2	-.0020	-.0052	L-.0074	.0082	.0006	.0000	L-.0112
Errors	LC Pass	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Low
High	.0050	.0500	.0050	.0500	.0050	.0050	.0100
Low	-.0050	-.0500	-.0050	-.0500	-.0050	-.0050	-.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0004	-.0002	-.0006	.0019	-.0014	.0453	-.0323
SDev	.0008	.0001	.0001	.0004	.0003	.0018	.0326
%RSD	192.0	43.42	22.44	20.64	21.08	4.016	100.9
#1	-.0001	-.0003	-.0005	.0022	-.0016	.0440	-.0553
#2	.0009	-.0002	-.0006	.0016	-.0012	.0466	-.0093
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0500	.0050	.0050	.0050	.0050	.0500	.1000
Low	-.0500	-.0050	-.0050	-.0050	-.0050	-.0500	-.1000

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0020	.0003	-.0082	.0002	.0039	-.0049	L-.1891
SDev	.0015	.0001	.0025	.0000	.0002	.0084	.3844
%RSD	77.42	24.18	30.74	.5957	5.294	170.0	203.3
#1	-.0031	.0003	-.0100	.0002	.0037	-.0109	L-.4608
#2	-.0009	.0004	-.0064	.0002	.0040	.0010	H.0827
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low
High	.0050	.0050	.0500	.0050	.0050	.0500	.0500
Low	-.0050	-.0050	-.0500	-.0050	-.0050	-.0500	-.0500

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0000	-.0000	-.0152	.0086	L-.0061	.0036	-.0024
SDev	.0003	.0025	.0014	.0001	.0006	.0039	.0065
%RSD	1651.	5775.	9.050	.7794	10.62	107.7	270.1
#1	-.0002	.0018	-.0142	.0085	L-.0065	.0064	-.0070
#2	.0002	-.0018	-.0161	.0086	L-.0056	.0009	.0022
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Low	LC Pass	LC Pass
High	.0050	.0200			.0050	.0200	.0100
Low	-.0050	-.0200			-.0050	-.0200	-.0100

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	99.42	-.0177	.0277	-.0084	.0006	H.0126	.0018
SDev	.11	.0119	.0007	.0033	.0004	.0035	.0019
%RSD	.1058	66.95	2.528	38.83	63.92	27.73	106.6
#1	99.35	-.0093	.0272	L-.0107	.0009	H.0150	.0004
#2	99.50	-.0261	.0282	-.0061	.0004	H.0101	.0031
Errors	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC High	LC Pass
High				.0100	.0050	.0050	.0100
Low				-.0100	-.0050	-.0050	-.0100

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0002	.0090	-.0016	L-.0163	-.0362	.0024	.0025
SDev	.0000	.0053	.0001	.0064	.0012	.0006	.0003
%RSD	26.54	59.41	5.991	39.59	3.234	25.53	11.74
#1	-.0002	.0052	-.0016	L-.0117	-.0370	.0028	.0023
#2	-.0001	H.0127	-.0015	L-.0208	-.0353	.0020	.0027
Errors	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass	LC Pass
High	.0050	.0100	.0050	.0100	.1000	.0050	.0100
Low	-.0050	-.0100	-.0050	-.0100	-.1000	-.0050	-.0100

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0005	-.0005	.0026
SDev	.0000	.0002	.0005
%RSD	1.429	35.85	17.45
#1	.0005	-.0006	.0030
#2	.0005	-.0004	.0023
Errors	LC Pass	LC Pass	LC Pass
High	.0050	.0050	.0050
Low	-.0050	-.0050	-.0050

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	795956	10000	--	--	--	--	--
SDev	826.6078	.0000000	--	--	--	--	--
%RSD	.1038510	.0000000	--	--	--	--	--
#1	795371	10000	--	--	--	--	--
#2	796540	10000	--	--	--	--	--

Method: DAILY1 Sample Name: PB16A27KE1 DF10 Operator:
Run Time: 02/06/16 00:20:56
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0026	-.0146	-.0022	-.0092	-.0003	.0000	-.0121
SDev	.0011	.0037	.0025	.0001	.0012	.0000	.0009
%RSD	44.29	25.15	115.9	.5778	425.4	105.4	7.263
#1	-.0034	-.0172	-.0040	-.0092	-.0011	.0000	-.0127
#2	-.0018	-.0120	-.0004	-.0093	.0006	.0001	-.0115

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0154	-.0002	-.0005	-.0016	-.0012	-.0067	-.0191
SDev	.0016	.0001	.0008	.0047	.0012	.0731	.0497
%RSD	10.52	22.45	147.6	283.2	92.69	1085.	259.7
#1	.0142	-.0003	-.0011	-.0049	-.0004	-.0584	-.0542
#2	.0165	-.0002	.0000	.0016	-.0021	.0450	.0160

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0021	.0006	.0130	-.0002	.0002	.0042	-.0808
SDev	.0011	.0002	.0001	.0007	.0046	.0032	.4671
%RSD	52.04	28.84	1.007	368.6	1983.	76.11	578.1
#1	-.0029	.0004	.0129	-.0007	-.0030	.0019	-.4111
#2	-.0014	.0007	.0131	.0003	.0035	.0064	.2495

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0033	.0122	-.0043	.0019	-.0066	.0156	-.0049
SDev	.0031	.0007	.0204	.0130	.0018	.0210	.0053
%RSD	96.46	5.466	476.5	681.4	27.55	134.5	107.6
#1	-.0055	.0126	.0102	-.0073	-.0079	.0008	-.0087
#2	-.0010	.0117	-.0187	.0111	-.0053	.0305	-.0012

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	100.3	-.0076	.0044	.2027	-.0002	.0004	-.0016
SDev	.4	.0083	.0228	.0788	.0018	.0124	.0012
%RSD	.4120	108.9	518.2	38.89	1163.	3147.	73.52
#1	100.0	-.0018	-.0117	.1470	-.0015	-.0084	-.0008
#2	100.6	-.0135	.0205	.2585	.0011	.0092	-.0025

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0001	.0006	-.0013	-.0082	-.0396	-.0012	.0055
SDev	.0000	.0229	.0002	.0070	.0004	.0057	.0037
%RSD	32.93	3915.	18.48	85.92	.9702	472.8	66.19
#1	-.0002	-.0156	-.0014	-.0131	-.0398	-.0052	.0029
#2	-.0001	.0168	-.0011	-.0032	-.0393	.0028	.0081

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	-.0004	.0011	-.0014
SDev	.0013	.0002	.0057
%RSD	300.6	16.72	411.6
#1	-.0014	.0009	-.0054
#2	.0005	.0012	.0027

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	802940	10000	--	--	--	--	--
SDev	3254.812	.0000000	--	--	--	--	--
%RSD	.4053621	.0000000	--	--	--	--	--
#1	800638	10000	--	--	--	--	--
#2	805241	10000	--	--	--	--	--

Method: DAILY1 Sample Name: LCS16A27KE1 DF10 Operator:
Run Time: 02/06/16 00:26:10
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0030	6.985	-.0020	-.0083	.0869	.0004	-.0037
SDev	.0010	.006	.0012	.0004	.0004	.0000	.0008
%RSD	33.92	.0852	58.79	4.613	.4759	10.65	22.92
#1	-.0037	6.981	-.0028	-.0086	.0866	.0004	-.0031
#2	-.0023	6.989	-.0012	-.0081	.0872	.0004	-.0043

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.6890	-.0003	-.0005	.0021	-.0012	1.395	2.197
SDev	.0002	.0001	.0002	.0006	.0004	.002	.046
%RSD	.0323	33.65	47.17	27.08	28.88	.1579	2.101
#1	.6892	-.0002	-.0007	.0025	-.0015	1.393	2.164
#2	.6889	-.0003	-.0003	.0017	-.0010	1.396	2.230

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0008	.0055	.1524	.0397	.0037	3.702	2.963
SDev	.0001	.0002	.0008	.0002	.0012	.006	.493
%RSD	17.91	2.860	.5365	.4317	32.83	.1543	16.65
#1	-.0009	.0054	.1518	.0396	.0046	3.698	2.614
#2	-.0007	.0056	.1530	.0399	.0029	3.706	3.312

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0010	.0165	-.0101	.0106	-.0031	.0202	-.0031
SDev	.0000	.0149	.0004	.0020	.0003	.0034	.0063
%RSD	3.859	90.38	4.128	19.26	10.49	17.01	204.8
#1	.0009	.0271	-.0104	.0092	-.0033	.0226	-.0075
#2	.0010	.0060	-.0098	.0120	-.0028	.0177	.0014

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	100.3	-.0215	.0146	30.69	.0037	.0026	.0024
SDev	1.0	.0043	.0003	.25	.0015	.0013	.0023
%RSD	.9743	20.22	1.759	.8222	40.70	49.00	97.96
#1	101.0	-.0184	.0145	30.51	.0026	.0035	.0040
#2	99.62	-.0246	.0148	30.87	.0047	.0017	.0007

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0063	.0104	.1338	-.0030	-.0496	.0024	.0120
SDev	.0000	.0041	.0005	.0146	.0139	.0007	.0005
%RSD	.5239	39.82	.3432	491.6	28.01	30.47	3.796
#1	.0063	.0075	.1341	-.0133	-.0595	.0029	.0123
#2	.0063	.0133	.1335	.0073	-.0398	.0019	.0117

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0025	.0057	.0284
SDev	.0001	.0002	.0002
%RSD	4.757	4.057	.6447
#1	.0024	.0055	.0283
#2	.0026	.0058	.0286

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	803128	10000	--	--	--	--	--
SDev	7838.986	.0000000	--	--	--	--	--
%RSD	.9760568	.0000000	--	--	--	--	--
#1	808671	10000	--	--	--	--	--
#2	797585	10000	--	--	--	--	--

Method: DAILY1 Sample Name: LCS16A27KE2 DF10 Operator:
Run Time: 02/06/16 00:31:29
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0020	4.527	-.0075	.0239	.0022	.0001	-.0117
SDev	.0007	.007	.0049	.0008	.0001	.0001	.0028
%RSD	34.34	.1446	65.04	3.304	5.549	40.22	24.09
#1	-.0025	4.523	-.0040	.0244	.0023	.0001	-.0137
#2	-.0015	4.532	-.0109	.0233	.0021	.0002	-.0097

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.883	-.0002	.0035	.0318	.0070	6.553	.0724
SDev	.006	.0001	.0004	.0002	.0008	.052	.0502
%RSD	.2090	64.56	10.34	.6710	11.52	.7948	69.39
#1	2.878	-.0003	.0037	.0319	.0075	6.516	.0369
#2	2.887	-.0001	.0032	.0316	.0064	6.590	.1079

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0007	.0200	2.220	.1294	.0032	.7013	.5732
SDev	.0011	.0002	.011	.0006	.0016	.0055	.4808
%RSD	155.5	1.006	.5120	.4740	50.25	.7823	83.89
#1	-.0015	.0198	2.212	.1289	.0020	.6974	.2332
#2	.0001	.0201	2.228	.1298	.0043	.7051	.9132

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0154	.0598	-.0222	.0124	-.0069	.0389	-.0037
SDev	.0007	.0040	.0007	.0001	.0019	.0103	.0073
%RSD	4.438	6.652	3.092	.6006	27.95	26.39	195.8
#1	.0159	.0569	-.0217	.0124	-.0055	.0462	-.0089
#2	.0149	.0626	-.0227	.0123	-.0082	.0317	.0014

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	99.44	-.0229	.0217	20.65	.0008	.0068	.0025
SDev	.38	.0050	.0001	.16	.0003	.0018	.0006
%RSD	.3813	21.81	.6946	.7709	33.57	25.80	24.11
#1	99.71	-.0264	.0216	20.54	.0010	.0056	.0029
#2	99.17	-.0194	.0218	20.77	.0006	.0081	.0020

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0061	.0083	.6816	-.0195	-.0010	.0283	.0053
SDev	.0000	.0012	.0005	.0101	.0395	.0001	.0059
%RSD	.0684	14.04	.0756	51.97	3961.	.4170	110.2
#1	.0061	.0075	.6812	-.0266	-.0289	.0282	.0095
#2	.0061	.0091	.6819	-.0123	.0269	.0284	.0012

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0007	.0096	.0075
SDev	.0000	.0004	.0000
%RSD	3.040	3.991	.5463
#1	.0007	.0099	.0075
#2	.0007	.0094	.0076

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	796144	10000	--	--	--	--	--
SDev	2980.455	.0000000	--	--	--	--	--
%RSD	.3743611	.0000000	--	--	--	--	--
#1	798252	10000	--	--	--	--	--
#2	794037	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 588049RK DF10 Operator:
Run Time: 02/06/16 00:36:45
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0027	.1282	.0016	-.0069	3.255	.0002	-.0137
SDev	.0000	.0014	.0048	.0001	.005	.0001	.0138
%RSD	1.804	1.103	299.0	1.787	.1518	29.43	100.6
#1	-.0028	.1292	-.0018	-.0068	3.259	.0001	-.0040
#2	-.0027	.1272	.0050	-.0070	3.252	.0002	-.0235

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0619	-.0002	.0549	.0029	.0316	1.353	.4292
SDev	.0013	.0002	.0005	.0031	.0006	.057	.0298
%RSD	2.076	105.0	.9004	109.7	1.778	4.201	6.947
#1	.0610	-.0003	.0545	.0006	.0312	1.313	.4081
#2	.0628	-.0000	.0552	.0051	.0320	1.393	.4502

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0018	.0016	.3913	.0404	.0146	.3975	.2711
SDev	.0008	.0001	.0025	.0006	.0030	.0029	.4066
%RSD	41.86	8.685	.6391	1.381	20.66	.7416	150.0
#1	-.0024	.0015	.3896	.0400	.0125	.3996	-.0164
#2	-.0013	.0017	.3931	.0408	.0167	.3954	.5587

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0734	.0478	.7073	.6938	-.0083	6.139	-.0080
SDev	.0006	.0041	.0377	.0250	.0020	.125	.0000
%RSD	.8228	8.576	5.324	3.611	23.96	2.039	.3310
#1	.0730	.0506	.7339	.6761	-.0097	6.050	-.0080
#2	.0738	.0449	.6807	.7115	-.0069	6.227	-.0080

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	97.89	-.0062	.0174	12.68	.6976	.0095	.0011
SDev	.55	.0394	.0226	.03	.0042	.0019	.0031
%RSD	.5665	633.6	130.4	.2715	.5947	20.53	280.6
#1	97.50	.0216	.0014	12.66	.6947	.0081	-.0011
#2	98.28	-.0341	.0334	12.71	.7005	.0109	.0033

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0544	-.0061	.1131	-.0141	.0133	.0172	.0053
SDev	.0003	.0264	.0000	.0066	.0046	.0032	.0000
%RSD	.4679	432.2	.0163	46.84	34.81	18.72	.2272
#1	.0545	-.0248	.1131	-.0187	.0166	.0149	.0053
#2	.0542	.0126	.1131	-.0094	.0100	.0195	.0053

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	-.0002	.0103	.0048
SDev	.0009	.0000	.0043
%RSD	511.8	.1995	90.02
#1	-.0008	.0103	.0017
#2	.0005	.0103	.0079

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	783760	10000	--	--	--	--	--
SDev	4439.923	.0000000	--	--	--	--	--
%RSD	.5664898	.0000000	--	--	--	--	--
#1	780621	10000	--	--	--	--	--
#2	786900	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 588556RK DF10 Operator:
Run Time: 02/06/16 00:42:00
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0021	.0190	-.0070	-.0054	.6890	.0002	-.0139
SDev	.0007	.0067	.0019	.0004	.0009	.0001	.0030
%RSD	35.64	35.59	27.65	6.671	.1275	66.31	21.52
#1	-.0026	.0142	-.0056	-.0057	.6896	.0001	-.0118
#2	-.0016	.0237	-.0084	-.0052	.6884	.0003	-.0161

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.860	-.0001	.1226	.0067	.0747	2.061	.5127
SDev	.001	.0004	.0003	.0006	.0008	.013	.0536
%RSD	.0412	353.8	.2151	9.703	1.120	.6449	10.45
#1	1.861	-.0004	.1224	.0071	.0753	2.070	.4748
#2	1.859	.0002	.1228	.0062	.0741	2.051	.5506

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0016	.0031	.6070	.0875	.0170	.3045	.1816
SDev	.0009	.0001	.0053	.0001	.0008	.0073	.5195
%RSD	57.14	4.835	.8742	.1670	4.449	2.385	286.1
#1	-.0023	.0030	.6033	.0874	.0165	.2994	-.1858
#2	-.0010	.0032	.6108	.0876	.0175	.3097	.5489

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1582	.0541	.5190	.5372	-.0052	5.326	-.0041
SDev	.0015	.0009	.0066	.0089	.0023	.006	.0065
%RSD	.9625	1.685	1.282	1.649	43.32	.1107	157.3
#1	.1571	.0535	.5143	.5310	-.0036	5.330	-.0088
#2	.1592	.0547	.5237	.5435	-.0068	5.322	.0005

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	99.19	-.0187	.0218	15.33	.5306	.0083	.0041
SDev	.58	.0042	.0028	.03	.0081	.0032	.0036
%RSD	.5849	22.37	12.69	.1740	1.530	38.87	87.08
#1	99.61	-.0217	.0199	15.31	.5249	.0060	.0016
#2	98.78	-.0157	.0238	15.35	.5364	.0106	.0067

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0710	.0127	.1410	-.0063	.0180	.0264	.0000
SDev	.0001	.0030	.0003	.0025	.0415	.0009	.0001
%RSD	.0662	23.30	.2219	40.04	231.1	3.287	384.5
#1	.0710	.0148	.1412	-.0081	-.0114	.0270	-.0001
#2	.0711	.0106	.1408	-.0045	.0473	.0258	.0001

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0006	.0222	.0070
SDev	.0002	.0000	.0007
%RSD	26.63	.1803	9.436
#1	.0007	.0222	.0075
#2	.0005	.0222	.0066

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	794142	10000	--	--	--	--	--
SDev	4598.315	.0000000	--	--	--	--	--
%RSD	.5790290	.0000000	--	--	--	--	--
#1	797394	10000	--	--	--	--	--
#2	790891	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 588556RKD DF10 Operator:
Run Time: 02/06/16 00:47:15
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0026	-.0095	-.0025	-.0042	1.691	.0002	-.0153
SDev	.0015	.0110	.0011	.0020	.014	.0001	.0087
%RSD	57.54	115.7	42.73	48.88	.8019	76.47	56.99
#1	-.0036	-.0173	-.0017	-.0056	1.681	.0001	-.0214
#2	-.0015	-.0017	-.0032	-.0027	1.700	.0003	-.0091

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.853	-.0003	.0977	.0057	.0590	1.598	.4145
SDev	.001	.0000	.0001	.0005	.0009	.008	.0690
%RSD	.0569	10.08	.1545	9.191	1.564	.5226	16.64
#1	1.854	-.0003	.0975	.0053	.0583	1.604	.3657
#2	1.852	-.0002	.0978	.0060	.0596	1.592	.4633

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0024	.0026	.5090	.0708	.0150	.3114	.1330
SDev	.0024	.0002	.0038	.0002	.0019	.0126	.8942
%RSD	97.96	9.212	.7505	.3434	12.38	4.031	672.3
#1	-.0041	.0024	.5063	.0710	.0137	.3025	-.4993
#2	-.0007	.0028	.5117	.0706	.0163	.3202	.7653

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1255	.0355	.4429	.4646	-.0063	4.760	-.0095
SDev	.0005	.0133	.0031	.0024	.0063	.096	.0013
%RSD	.4309	37.50	.7026	.5240	101.2	2.014	13.85
#1	.1251	.0261	.4407	.4629	-.0107	4.692	-.0086
#2	.1259	.0450	.4451	.4663	-.0018	4.828	-.0104

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	98.38	-.0197	.0262	13.19	.4569	.0109	.0010
SDev	.47	.0104	.0115	.06	.0027	.0111	.0022
%RSD	.4740	52.83	43.81	.4302	.5810	102.0	212.2
#1	98.71	-.0271	.0181	13.23	.4550	.0030	.0026
#2	98.05	-.0124	.0344	13.15	.4588	.0188	-.0005

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0761	.0092	.1152	-.0062	.0083	.0213	-.0002
SDev	.0006	.0003	.0005	.0111	.0702	.0002	.0063
%RSD	.7231	3.490	.4417	179.9	848.2	.9176	2734.
#1	.0757	.0094	.1148	-.0140	-.0414	.0214	-.0047
#2	.0765	.0090	.1155	.0017	.0579	.0211	.0042

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0006	.0190	.0054
SDev	.0001	.0002	.0007
%RSD	20.41	.8333	13.56
#1	.0005	.0191	.0049
#2	.0006	.0189	.0060

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	787610	10000	--	--	--	--	--
SDev	3781.607	.0000000	--	--	--	--	--
%RSD	.4801370	.0000000	--	--	--	--	--
#1	790284	10000	--	--	--	--	--
#2	784936	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 588556RKL DF50 Operator:
Run Time: 02/06/16 00:52:30
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0031	-.0168	-.0021	-.0201	.1366	.0000	-.0133
SDev	.0007	.0071	.0010	.0003	.0008	.0000	.0096
%RSD	23.66	42.48	48.69	1.521	.5490	60.56	72.65
#1	-.0037	-.0218	-.0028	-.0203	.1361	.0000	-.0201
#2	-.0026	-.0117	-.0014	-.0199	.1372	.0001	-.0064

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.3760	-.0003	.0241	.0033	.0140	.4585	.0743
SDev	.0006	.0000	.0005	.0001	.0009	.0047	.0316
%RSD	.1548	8.593	2.054	2.898	6.717	1.023	42.44
#1	.3756	-.0003	.0245	.0032	.0146	.4618	.0520
#2	.3765	-.0003	.0238	.0034	.0133	.4552	.0967

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0024	.0009	.1147	.0176	.0070	.0365	-.1614
SDev	.0010	.0001	.0025	.0001	.0010	.0039	.3487
%RSD	43.48	12.30	2.169	.5407	14.33	10.66	216.0
#1	-.0031	.0008	.1130	.0177	.0063	.0337	-.4080
#2	-.0016	.0009	.1165	.0175	.0077	.0392	.0851

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0319	.0027	.0915	.1128	-.0050	1.075	-.0051
SDev	.0012	.0110	.0023	.0027	.0001	.005	.0020
%RSD	3.723	409.5	2.502	2.421	2.578	.4745	40.41
#1	.0327	-.0051	.0931	.1109	-.0051	1.078	-.0065
#2	.0311	.0105	.0899	.1148	-.0049	1.071	-.0036

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	99.01	-.0164	.0233	2.983	.1056	.0101	.0005
SDev	.81	.0024	.0029	.010	.0011	.0027	.0001
%RSD	.8180	14.42	12.20	.3192	1.000	26.65	26.23
#1	99.58	-.0181	.0213	2.990	.1049	.0082	.0006
#2	98.43	-.0148	.0254	2.976	.1064	.0120	.0004

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0142	.0139	.0266	-.0088	.0073	.0076	-.0019
SDev	.0001	.0004	.0001	.0119	.0124	.0004	.0039
%RSD	1.077	2.779	.5578	135.4	169.4	4.703	210.7
#1	.0141	.0136	.0265	-.0004	-.0015	.0079	-.0046
#2	.0143	.0142	.0267	-.0172	.0161	.0074	.0009

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0007	.0045	.0042
SDev	.0000	.0006	.0003
%RSD	.1516	12.39	8.390
#1	.0007	.0049	.0040
#2	.0007	.0041	.0045

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	792616	10000	--	--	--	--	--
SDev	6479.219	.0000000	--	--	--	--	--
%RSD	.8174480	.0000000	--	--	--	--	--
#1	797197	10000	--	--	--	--	--
#2	788034	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 588556RKAS DF10 Operator:
Run Time: 02/06/16 00:57:47
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0553	2.332	2.405	3.488	2.946	.0714	-.0165
SDev	.0005	.001	.004	.029	.019	.0005	.0010
%RSD	.9186	.0623	.1501	.8420	.6375	.6412	5.947
#1	.0557	2.333	2.408	3.509	2.959	.0717	-.0172
#2	.0550	2.331	2.403	3.468	2.933	.0711	-.0158

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	22.36	.0592	.7141	.2314	.3604	3.157	17.70
SDev	.04	.0009	.0023	.0008	.0034	.004	.14
%RSD	.1639	1.461	.3186	.3324	.9576	.1144	.7941
#1	22.39	.0598	.7157	.2320	.3628	3.154	17.80
#2	22.34	.0586	.7125	.2309	.3579	3.159	17.60

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0020	.0035	21.25	.6843	.0156	24.76	18.87
SDev	.0005	.0001	.14	.0050	.0006	.35	.44
%RSD	27.28	3.219	.6375	.7265	3.581	1.397	2.355
#1	-.0024	.0034	21.35	.6879	.0160	25.00	18.56
#2	-.0016	.0036	21.15	.6808	.0152	24.51	19.18

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.7242	.0572	1.091	1.108	-.0055	5.377	.5976
SDev	.0046	.0046	.012	.003	.0009	.024	.0020
%RSD	.6365	8.064	1.141	.2982	17.22	.4544	.3282
#1	.7275	.0604	1.100	1.110	-.0048	5.359	.5990
#2	.7209	.0539	1.083	1.105	-.0062	5.394	.5962

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	95.09	2.430	2.459	19.16	1.101	2.447	.0054
SDev	.42	.026	.019	.03	.006	.021	.0046
%RSD	.4369	1.059	.7884	.1511	.5762	.8777	85.25
#1	94.79	2.448	2.473	19.14	1.106	2.462	.0087
#2	95.38	2.412	2.446	19.18	1.097	2.432	.0021

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0697	.0030	.1410	2.342	.0239	.6138	-.0010
SDev	.0003	.0000	.0005	.010	.0121	.0017	.0042
%RSD	.4822	.8688	.3846	.4326	50.40	.2793	437.4
#1	.0699	.0030	.1414	2.335	.0154	.6150	.0020
#2	.0694	.0030	.1406	2.349	.0325	.6126	-.0039

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0007	.6329	.0075
SDev	.0000	.0029	.0002
%RSD	3.467	.4644	2.361
#1	.0007	.6350	.0074
#2	.0008	.6309	.0077

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	761343	10000	--	--	--	--	--
SDev	3319.159	.0000000	--	--	--	--	--
%RSD	.4359611	.0000000	--	--	--	--	--
#1	758996	10000	--	--	--	--	--
#2	763690	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 590212RK DF10 Operator:
Run Time: 02/06/16 01:03:02
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0019	.2053	-.0032	.0001	4.237	.0001	-.0123
SDev	.0007	.0030	.0033	.0008	.047	.0001	.0044
%RSD	39.00	1.471	102.7	514.6	1.115	44.03	35.61
#1	-.0014	.2074	-.0009	.0007	4.203	.0001	-.0154
#2	-.0024	.2032	-.0055	-.0004	4.270	.0001	-.0092

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0605	-.0000	.0556	.0044	.0644	1.470	.3385
SDev	.0002	.0003	.0000	.0004	.0000	.005	.0338
%RSD	.2721	563.9	.0397	9.832	.0683	.3459	9.970
#1	.0603	.0001	.0556	.0047	.0644	1.473	.3146
#2	.0606	-.0002	.0556	.0041	.0645	1.466	.3623

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0017	.0013	.0520	.0254	.0193	.3195	.1858
SDev	.0003	.0001	.0020	.0001	.0015	.0050	.3934
%RSD	18.40	4.441	3.776	.2376	7.594	1.582	211.8
#1	-.0020	.0013	.0506	.0254	.0183	.3159	-.0924
#2	-.0015	.0014	.0534	.0255	.0203	.3230	.4640

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0779	.0388	.7235	.7368	-.0054	6.226	.0004
SDev	.0007	.0038	.0005	.0036	.0019	.048	.0003
%RSD	.8758	9.776	.0702	.4896	35.98	.7752	75.48
#1	.0775	.0361	.7239	.7393	-.0040	6.192	.0006
#2	.0784	.0414	.7232	.7342	-.0067	6.260	.0002

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	98.34	-.0171	.0278	9.386	.7316	.0128	.0032
SDev	.39	.0016	.0100	.044	.0026	.0062	.0013
%RSD	.3989	9.196	36.06	.4726	.3521	47.95	40.58
#1	98.61	-.0160	.0207	9.355	.7334	.0085	.0023
#2	98.06	-.0182	.0349	9.418	.7298	.0172	.0042

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0627	.0098	.0919	-.0227	.0440	.0119	.0030
SDev	.0002	.0030	.0004	.0195	.0047	.0002	.0050
%RSD	.2605	30.24	.4454	85.92	10.80	1.366	164.9
#1	.0625	.0119	.0916	-.0365	.0406	.0118	.0065
#2	.0628	.0077	.0922	-.0089	.0474	.0121	-.0005

010479

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0007	.0096	.0097
SDev	.0000	.0003	.0007
%RSD	6.401	3.147	6.954
#1	.0007	.0098	.0102
#2	.0006	.0093	.0093

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	787322	10000	--	--	--	--	--
SDev	3178.445	.0000000	--	--	--	--	--
%RSD	.4037031	.0000000	--	--	--	--	--
#1	789570	10000	--	--	--	--	--
#2	785075	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 590213RK DF10 Operator:
Run Time: 02/06/16 01:08:17
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0027	.4158	.0033	.0008	.0823	.0001	-.0167
SDev	.0022	.0111	.0019	.0010	.0006	.0001	.0022
%RSD	82.49	2.675	56.27	125.7	.7286	67.28	13.10
#1	-.0042	.4079	.0020	.0001	.0819	.0001	-.0182
#2	-.0011	.4237	.0046	.0014	.0827	.0002	-.0151

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.183	-.0002	.0203	.0057	.0920	1.387	.6550
SDev	.001	.0002	.0008	.0008	.0009	.014	.0588
%RSD	.0429	92.46	3.962	13.29	1.030	.9746	8.981
#1	2.182	-.0003	.0198	.0052	.0913	1.378	.6134
#2	2.184	-.0001	.0209	.0062	.0926	1.397	.6966

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0016	.0018	.4680	.0628	.0081	.4808	.1064
SDev	.0025	.0002	.0038	.0000	.0030	.0072	.7000
%RSD	154.7	10.15	.8186	.0589	36.76	1.494	658.0
#1	-.0033	.0017	.4653	.0627	.0060	.4758	-.3886
#2	.0001	.0020	.4708	.0628	.0102	.4859	.6013

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0299	.0612	.2773	.3010	-.0060	3.339	-.0057
SDev	.0011	.0086	.0051	.0036	.0032	.020	.0080
%RSD	3.562	14.14	1.833	1.181	52.87	.5846	141.5
#1	.0291	.0550	.2737	.3035	-.0082	3.326	-.0113
#2	.0307	.0673	.2809	.2985	-.0037	3.353	.0000

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	97.60	-.0213	.0208	19.17	.2928	.0068	.0067
SDev	.72	.0034	.0008	.05	.0007	.0006	.0042
%RSD	.7390	16.15	3.677	.2502	.2289	9.437	63.57
#1	98.11	-.0189	.0203	19.21	.2933	.0072	.0037
#2	97.09	-.0238	.0214	19.14	.2923	.0063	.0096

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0414	.0083	.1707	-.0109	.0015	.0095	.0050
SDev	.0002	.0010	.0003	.0136	.0576	.0005	.0040
%RSD	.4891	12.03	.1453	125.0	3860.	5.297	78.54
#1	.0412	.0091	.1705	-.0205	-.0392	.0092	.0022
#2	.0415	.0076	.1708	-.0013	.0422	.0099	.0078

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0008	.0157	.0067
SDev	.0002	.0002	.0015
%RSD	30.94	1.348	22.39
#1	.0006	.0155	.0057
#2	.0009	.0158	.0078

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	781331	10000	--	--	--	--	--
SDev	5781.305	.0000000	--	--	--	--	--
%RSD	.7399303	.0000000	--	--	--	--	--
#1	785419	10000	--	--	--	--	--
#2	777243	10000	--	--	--	--	--

Method: DAILY1 Sample Name: CCV Operator:
Run Time: 02/06/16 01:13:32
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.031	10.11	5.344	5.289	9.992	H1.111	5.093
SDev	.002	.01	.016	.005	.059	.054	.049
%RSD	.2386	.0618	.3023	.0989	.5930	4.865	.9575
#1	1.033	10.11	5.355	5.292	10.03	H1.149	5.128
#2	1.030	10.12	5.333	5.285	9.950	1.073	5.059
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	1.100	11.00	5.500	5.500	11.00	1.100	5.500
Low	.9000	9.000	4.500	4.500	9.000	.9000	4.500

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.27	1.082	5.247	2.031	1.998	10.12	18.84
SDev	.03	.002	.030	.008	.003	.05	.12
%RSD	.1252	.1676	.5659	.4173	.1264	.4636	.6120
#1	20.25	1.083	5.268	2.037	1.996	10.15	18.75
#2	20.29	1.081	5.226	2.025	2.000	10.09	18.92
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.00	1.100	5.500	2.200	2.200	11.00	22.00
Low	18.00	.9000	4.500	1.800	1.800	9.000	18.00

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.003	5.399	20.49	1.049	5.075	H38.09	28.74
SDev	.014	.031	.00	.001	.027	.40	.28
%RSD	.2896	.5806	.0233	.1003	.5310	1.055	.9625
#1	5.013	5.377	20.48	1.050	5.094	H37.81	28.54
#2	4.992	5.421	20.49	1.049	5.056	H38.38	28.93
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	5.500	5.500	22.00	1.100	5.500	33.00	33.00
Low	4.500	4.500	18.00	.9000	4.500	27.00	27.00

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.096	4.733	5.092	5.123	.9752	1.025	1.013
SDev	.055	.047	.030	.017	.0056	.007	.005
%RSD	1.081	1.001	.5927	.3321	.5697	.6853	.4460
#1	5.057	4.700	5.070	5.111	.9713	1.030	1.017
#2	5.135	4.767	5.113	5.135	.9792	1.020	1.010
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	5.500	5.500			1.100	1.100	1.100
Low	4.500	4.500			.9000	.9000	.9000

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

010483

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	96.99	5.463	5.413	5.402	5.107	5.424	5.223
SDev	1.07	.041	.003	.019	.021	.012	.008
%RSD	1.105	.7584	.0576	.3510	.4186	.2161	.1576
#1	97.75	5.434	5.415	5.415	5.092	5.416	5.229
#2	96.23	5.493	5.410	5.388	5.122	5.432	5.217
Errors	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass
High				5.500	5.500	5.500	5.500
Low				4.500	4.500	4.500	4.500

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.059	1.043	4.960	5.266	5.012	5.216	H1.112
SDev	.014	.000	.000	.012	.008	.004	.013
%RSD	.2691	.0086	.0015	.2372	.1628	.0724	1.125
#1	5.069	1.043	4.960	5.275	5.018	5.219	H1.103
#2	5.050	1.043	4.960	5.258	5.007	5.214	H1.121
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High
High	5.500	1.100	5.500	5.500	5.500	5.500	1.100
Low	4.500	.9000	4.500	4.500	4.500	4.500	.9000

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	5.085	1.093	5.089
SDev	.001	.010	.006
%RSD	.0150	.9488	.1119
#1	5.085	H1.100	5.085
#2	5.086	1.085	5.093
Errors	LC Pass	LC Pass	LC Pass
High	5.500	1.100	5.500
Low	4.500	.9000	4.500

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	776480	10000	--	--	--	--	--
SDev	8558.113	.0000000	--	--	--	--	--
%RSD	1.102167	.0000000	--	--	--	--	--
#1	782532	10000	--	--	--	--	--
#2	770429	10000	--	--	--	--	--

Method: DAILY1 Sample Name: CCB Operator:
Run Time: 02/06/16 01:18:48
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0034	-.0159	L-.0064	.0040	.0006	.0001	-.0063
SDev	.0009	.0137	.0063	.0010	.0000	.0000	.0048
%RSD	27.57	86.39	97.40	24.81	4.681	49.90	76.71
#1	-.0041	-.0255	-.0020	.0047	.0006	.0000	-.0097
#2	-.0027	-.0062	L-.0109	.0033	.0006	.0001	-.0029
Errors	LC Pass	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass
High	.0050	.0500	.0050	.0500	.0050	.0050	.0100
Low	-.0050	-.0500	-.0050	-.0500	-.0050	-.0050	-.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0004	-.0004	-.0001	.0017	-.0014	H.0505	-.0296
SDev	.0009	.0003	.0008	.0006	.0013	.0051	.0160
%RSD	200.2	86.62	640.5	34.30	93.26	10.09	54.13
#1	-.0011	-.0006	.0005	.0021	-.0005	.0469	-.0410
#2	.0002	-.0001	-.0007	.0013	-.0024	H.0541	-.0183
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	.0500	.0050	.0050	.0050	.0050	.0500	.1000
Low	-.0500	-.0050	-.0050	-.0050	-.0050	-.0500	-.1000

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0026	.0004	-.0080	.0003	.0041	-.0065	L-.1693
SDev	.0016	.0001	.0047	.0000	.0033	.0039	.2394
%RSD	61.47	15.38	58.69	2.780	80.41	60.37	141.4
#1	-.0037	.0004	-.0113	.0003	H.0064	-.0093	L-.3385
#2	-.0014	.0005	-.0047	.0003	.0018	-.0037	.0000
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low
High	.0050	.0050	.0500	.0050	.0050	.0500	.0500
Low	-.0050	-.0050	-.0500	-.0050	-.0050	-.0500	-.0500

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0006	-.0015	-.0146	.0083	L-.0057	.0116	-.0017
SDev	.0001	.0015	.0020	.0006	.0044	.0209	.0084
%RSD	24.65	100.5	13.85	7.279	77.74	180.3	487.0
#1	-.0005	-.0004	-.0132	.0088	-.0026	-.0032	-.0076
#2	-.0007	-.0026	-.0161	.0079	L-.0088	H.0264	.0042
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Low	LC Pass	LC Pass
High	.0050	.0200			.0050	.0200	.0100
Low	-.0050	-.0200			-.0050	-.0200	-.0100

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

010486

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	99.94	-.0230	.0173	H.0859	.0007	.0039	.0026
SDev	.02	.0008	.0067	.0009	.0011	.0042	.0048
%RSD	.0176	3.662	39.08	1.022	157.8	109.4	185.6
#1	99.93	-.0236	.0221	H.0852	.0014	H.0068	-.0008
#2	99.95	-.0224	.0125	H.0865	-.0001	.0009	.0060
Errors	NOCHECK	NOCHECK	NOCHECK	LC High	LC Pass	LC Pass	LC Pass
High				.0100	.0050	.0050	.0100
Low				-.0100	-.0050	-.0050	-.0100

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0002	H.0125	-.0015	L-.0129	-.0186	.0027	-.0002
SDev	.0001	.0096	.0005	.0019	.0432	.0002	.0016
%RSD	34.62	77.04	33.05	14.95	231.6	6.228	957.4
#1	-.0002	H.0192	-.0018	L-.0143	-.0492	.0026	-.0013
#2	-.0001	.0057	-.0011	L-.0116	.0119	.0028	.0009

Errors	LC Pass	LC High	LC Pass	LC Low	LC Pass	LC Pass	LC Pass
High	.0050	.0100	.0050	.0100	.1000	.0050	.0100
Low	-.0050	-.0100	-.0050	-.0100	-.1000	-.0050	-.0100

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0005	-.0004	.0024
SDev	.0001	.0002	.0001
%RSD	14.86	46.02	3.802
#1	.0005	-.0002	.0025
#2	.0004	-.0005	.0024

Errors	LC Pass	LC Pass	LC Pass
High	.0050	.0050	.0050
Low	-.0050	-.0050	-.0050

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	800091	10000	--	--	--	--	--
SDev	164.0488	.0000000	--	--	--	--	--
%RSD	.0205038	.0000000	--	--	--	--	--
#1	799975	10000	--	--	--	--	--
#2	800207	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 590214RK DF10 Operator:
Run Time: 02/06/16 01:24:04
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0022	3.613	.0073	.0063	.0322	.0004	.0044
SDev	.0061	.022	.0033	.0035	.0002	.0002	.0230
%RSD	270.2	.6110	44.71	55.97	.6806	44.11	521.2
#1	-.0020	3.597	.0050	.0038	.0324	.0003	-.0119
#2	.0065	3.629	.0096	.0088	.0321	.0006	.0207

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.706	.0006	.1254	.0068	.0695	2.533	.9963
SDev	.008	.0009	.0008	.0007	.0008	.010	.1526
%RSD	.4480	145.0	.6748	9.579	1.181	.3786	15.32
#1	1.701	-.0000	.1248	.0073	.0689	2.527	.8884
#2	1.711	.0012	.1260	.0064	.0700	2.540	1.104

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0038	.0030	.6525	.1233	.0114	.7603	1.529
SDev	.0068	.0004	.0237	.0002	.0004	.0215	1.657
%RSD	178.9	14.93	3.635	.1847	3.925	2.832	108.4
#1	-.0010	.0027	.6358	.1235	.0117	.7450	.3569
#2	.0086	.0033	.6693	.1232	.0111	.7755	2.700

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1689	.0862	.0069	.0299	-.0008	.1888	.0132
SDev	.0011	.0188	.0079	.0039	.0070	.0189	.0248
%RSD	.6245	21.86	113.3	13.05	898.2	10.03	188.2
#1	.1697	.0729	.0014	.0326	-.0058	.1754	-.0044
#2	.1682	.0995	.0125	.0271	.0042	.2022	.0307

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	97.67	-.0097	.0266	27.85	.0222	.0145	.0067
SDev	.98	.0097	.0132	.04	.0000	.0056	.0079
%RSD	1.001	100.2	49.86	.1329	.0977	38.57	118.3
#1	96.98	-.0166	.0359	27.87	.0222	.0184	.0011
#2	98.37	-.0028	.0172	27.82	.0222	.0105	.0123

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0118	.0135	.2416	.0019	.2795	.0444	.0202
SDev	.0003	.0065	.0022	.0111	.1398	.0003	.0091
%RSD	2.638	48.09	.9159	586.6	50.02	.6951	45.06
#1	.0116	.0182	.2400	.0098	.1807	.0446	.0138
#2	.0120	.0089	.2432	-.0060	.3784	.0441	.0267

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0009	.0131	.0286
SDev	.0002	.0002	.0006
%RSD	21.29	1.799	2.245
#1	.0008	.0129	.0282
#2	.0010	.0133	.0291

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	781958	10000	--	--	--	--	--
SDev	7787.367	.0000000	--	--	--	--	--
%RSD	.9958811	.0000000	--	--	--	--	--
#1	776451	10000	--	--	--	--	--
#2	787464	10000	--	--	--	--	--

Method: DAILY1 Sample Name: 591000RK DF10 Operator:
Run Time: 02/06/16 01:29:20
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0028	4.305	-.0010	.0018	.2356	.0002	-.0070
SDev	.0008	.017	.0001	.0001	.0017	.0001	.0027
%RSD	30.58	.3927	12.44	8.455	.7239	29.94	39.19
#1	-.0034	4.293	-.0011	.0017	.2343	.0002	-.0050
#2	-.0022	4.317	-.0010	.0019	.2368	.0003	-.0089

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1622	-.0004	.0119	.0072	.0127	3.073	.9710
SDev	.0011	.0002	.0001	.0002	.0008	.029	.0454
%RSD	.6751	44.47	.7277	3.224	5.969	.9345	4.678
#1	.1615	-.0006	.0119	.0070	.0132	3.053	.9389
#2	.1630	-.0003	.0118	.0074	.0122	3.094	1.003

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0017	.0032	.6565	.1150	.0088	.5125	.3891
SDev	.0009	.0001	.0073	.0009	.0025	.0063	.5740
%RSD	50.23	3.715	1.118	.7679	28.89	1.238	147.5
#1	-.0024	.0031	.6513	.1143	.0070	.5080	-.0168
#2	-.0011	.0033	.6617	.1156	.0106	.5170	.7950

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0191	.0686	.2394	.2643	-.0067	2.096	-.0073
SDev	.0002	.0022	.0005	.0013	.0003	.024	.0044
%RSD	1.165	3.246	.2270	.4918	3.934	1.130	60.02
#1	.0193	.0701	.2398	.2633	-.0069	2.112	-.0104
#2	.0190	.0670	.2391	.2652	-.0066	2.079	-.0042

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899
Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	98.78	-.0196	.0309	22.18	.2557	.0141	-.0009
SDev	1.10	.0078	.0086	.17	.0007	.0031	.0024
%RSD	1.113	40.08	27.66	.7501	.2676	21.90	273.0
#1	99.56	-.0140	.0249	22.06	.2552	.0119	.0008
#2	98.00	-.0251	.0370	22.30	.2562	.0163	-.0025

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0169	.0076	.2391	-.0054	-.0199	.0146	.0014
SDev	.0000	.0015	.0001	.0043	.0089	.0010	.0020
%RSD	.0264	19.17	.0537	79.23	44.94	6.692	136.2
#1	.0169	.0066	.2390	-.0085	-.0136	.0140	.0028
#2	.0169	.0086	.2392	-.0024	-.0262	.0153	.0001

010491

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0007	.0131	.0119
SDev	.0001	.0008	.0005
%RSD	22.39	5.785	3.987
#1	.0006	.0125	.0115
#2	.0008	.0136	.0122

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	790876	10000	--	--	--	--	--
SDev	8794.287	.0000000	--	--	--	--	--
%RSD	1.111967	.0000000	--	--	--	--	--
#1	797095	10000	--	--	--	--	--
#2	784658	10000	--	--	--	--	--

Analysis Report 02/06/16 01:39:33 AM page 1

Method: DAILY1 Sample Name: CRI Operator:
Run Time: 02/06/16 01:34:35
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0136	.1398	.0092	H.1017	.0058	.0063	H.0374
SDev	.0075	.0410	.0049	.0061	.0000	.0001	.0183
%RSD	54.85	29.30	52.98	6.014	.0829	1.848	48.84
#1	H.0189	H.1688	.0126	H.1060	.0058	.0064	H.0503
#2	.0083	.1108	.0057	H.0973	.0058	.0062	.0245
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC High
High	.0150	.1500	.0150	.0600	.0075	.0075	.0300
Low	.0050	.0500	.0050	.0200	.0025	.0025	.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1048	.0058	.0059	.0074	.0056	H.1645	.3932
SDev	.0060	.0010	.0021	.0005	.0034	.0082	.1523
%RSD	5.738	16.77	36.23	6.240	59.84	5.001	38.73
#1	.1091	.0065	.0074	H.0077	H.0080	H.1703	.5009
#2	.1006	.0051	.0044	.0071	.0032	H.1586	.2855
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	.1500	.0075	.0075	.0075	.0075	.1500	.7500
Low	.0500	.0025	.0025	.0025	.0025	.0500	.2500

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	H.0153	.0108	.0628	.0056	H.0089	.3002	H1.300
SDev	.0088	.0003	.0254	.0000	.0003	.0277	1.428
%RSD	57.79	2.946	40.40	.1298	3.530	9.240	109.8
#1	H.0216	.0110	.0807	.0056	H.0087	.3198	H2.310
#2	.0090	.0106	.0448	.0055	H.0091	.2806	.2904
Errors	LC High	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC High
High	.0150	.0150	.1000	.0075	.0075	.5000	.5000
Low	.0050	.0050	.0250	.0025	.0025	.1250	.1250

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0052	.0562	-.0028	.0067	.0244	H.0771	H.0406
SDev	.0001	.0149	.0149	.0066	.0133	.0153	.0229
%RSD	2.608	26.49	527.9	98.19	54.46	19.82	56.43
#1	.0053	.0667	.0077	.0020	H.0338	H.0879	H.0568
#2	.0051	.0457	-.0133	.0113	.0150	.0663	.0244
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC High	LC High
High	.0075	.0750			.0300	.0750	.0300
Low	.0025	.0250			.0100	.0250	.0100

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	98.69	.0056	.0178	H.7743	.0035	.0137	H.0187
SDev	.58	.0215	.0072	.0275	.0006	.0024	.0029
%RSD	.5835	384.0	40.40	3.550	16.08	17.24	15.53
#1	99.10	.0208	.0127	H.7938	.0039	H.0154	H.0207
#2	98.28	-.0096	.0229	H.7549	.0031	.0121	H.0166
Errors	NOCHECK	NOCHECK	NOCHECK	LC High	LC Pass	LC Pass	LC High
High				.1500	.0075	.0150	.0150
Low				.0500	.0025	.0050	.0050

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0055	.0275	.0062	L.0057	H.3207	H.0078	H.0335
SDev	.0004	.0002	.0040	.0281	.1677	.0005	.0030
%RSD	8.284	.6887	64.35	494.9	52.31	6.049	8.854
#1	.0058	.0274	H.0090	.0256	H.4393	H.0082	H.0356
#2	.0052	.0276	.0034	L-.0142	.2021	H.0075	H.0314
Errors	LC Pass	LC Pass	LC Pass	LC Low	LC High	LC High	LC High
High	.0075	.0300	.0075	.0300	.3000	.0075	.0300
Low	.0025	.0100	.0025	.0100	.1000	.0025	.0100

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0059	.0057	H.0096
SDev	.0001	.0008	.0007
%RSD	.9276	14.95	7.410
#1	.0060	.0063	H.0101
#2	.0059	.0051	H.0091
Errors	LC Pass	LC Pass	LC High
High	.0075	.0075	.0075
Low	.0025	.0025	.0025

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	790160	10000	--	--	--	--	--
SDev	4601.144	.0000000	--	--	--	--	--
%RSD	.5823057	.0000000	--	--	--	--	--
#1	793413	10000	--	--	--	--	--
#2	786906	10000	--	--	--	--	--

Method: DAILY1 Sample Name: CRI-N Operator:
Run Time: 02/06/16 01:39:51
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0175	.2085	.0176	H.1606	.0105	.0123	.0304
SDev	.0000	.0047	.0027	.0017	.0002	.0000	.0036
%RSD	.1832	2.252	15.22	1.040	1.504	.2527	11.74
#1	.0175	.2118	.0195	H.1594	.0104	.0123	L.0279
#2	.0175	.2052	.0157	H.1617	.0106	.0122	.0329
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass
High	.0260	.2600	.0260	.1040	.0130	.0130	.0520
Low	.0140	.1400	.0140	.0560	.0070	.0070	.0280

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2006	.0100	.0098	.0119	.0084	.2490	L.6301
SDev	.0003	.0001	.0002	.0002	.0008	.0019	.0164
%RSD	.1672	.9245	1.655	1.828	9.332	.7441	2.610
#1	.2008	.0099	.0100	.0117	.0090	.2503	L.6417
#2	.2003	.0101	.0097	.0121	.0079	.2477	L.6185
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low
High	.2600	.0130	.0130	.0130	.0130	.2600	1.300
Low	.1400	.0070	.0070	.0070	.0070	.1400	.7000

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0183	.0215	.0959	.0106	.0114	.5608	H.7158
SDev	.0003	.0000	.0002	.0000	.0018	.0028	.1535
%RSD	1.612	.1208	.1814	.0261	15.97	.4922	21.44
#1	.0185	.0215	.0960	.0106	.0126	.5627	.6072
#2	.0181	.0215	.0958	.0106	.0101	.5588	H.8243
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High
High	.0260	.0260	.1300	.0130	.0130	.6500	.6500
Low	.0140	.0140	.0700	.0070	.0070	.3500	.3500

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0096	.0906	-.0087	.0198	.0324	H.1346	.0331
SDev	.0001	.0066	.0013	.0010	.0023	.0237	.0065
%RSD	.6230	7.304	14.71	5.054	7.151	17.63	19.64
#1	.0096	.0860	-.0078	.0191	.0340	H.1514	.0377
#2	.0096	.0953	-.0096	.0205	.0308	.1178	.0285
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC High	LC Pass
High	.0130	.1300			.0520	.1300	.0520
Low	.0070	.0700			.0280	.0700	.0280

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	99.74	-.0097	.0445	H1.020	.0103	H.0264	.0218
SDev	.43	.0104	.0068	.016	.0002	.0080	.0014
%RSD	.4302	106.5	15.37	1.574	2.336	30.36	6.633
#1	99.43	-.0024	.0493	H1.031	.0101	H.0320	.0207
#2	100.0	-.0171	.0396	H1.009	.0105	.0207	.0228
Errors	NOCHECK	NOCHECK	NOCHECK	LC High	LC Pass	LC High	LC Pass
High				.2600	.0130	.0260	.0260
Low				.1400	.0070	.0140	.0140

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0104	.0512	.0091	L.0166	.4087	.0124	.0439
SDev	.0001	.0045	.0001	.0058	.0136	.0000	.0001
%RSD	.8915	8.768	.7748	35.04	3.326	.2320	.2252
#1	.0104	.0480	.0091	L.0125	.4183	.0124	.0440
#2	.0103	H.0544	.0092	L.0207	.3991	.0124	.0439
Errors	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass	LC Pass
High	.0130	.0520	.0130	.0520	.5200	.0130	.0520
Low	.0070	.0280	.0070	.0280	.2800	.0070	.0280

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0108	.0098	H.0139
SDev	.0001	.0001	.0000
%RSD	.7110	1.286	.1748
#1	.0109	.0099	H.0139
#2	.0108	.0097	H.0139
Errors	LC Pass	LC Pass	LC High
High	.0130	.0130	.0130
Low	.0070	.0070	.0070

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	798489	10000	--	--	--	--	--
SDev	3433.710	.0000000	--	--	--	--	--
%RSD	.4300260	.0000000	--	--	--	--	--
#1	796061	10000	--	--	--	--	--
#2	800917	10000	--	--	--	--	--

Analysis Report 02/06/16 01:50:03 AM

Method: DAILY1 Sample Name: ICSA Operator:
Run Time: 02/06/16 01:45:06
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0058	492.4	-.0101	.1038	.0029	.0001	-.0181
SDev	.0003	.3	.0080	.0012	.0001	.0000	.0017
%RSD	4.989	.0571	79.89	1.172	3.730	41.24	9.426
#1	-.0060	492.6	-.0044	.1046	.0030	.0000	-.0193
#2	-.0056	492.2	-.0158	.1029	.0028	.0001	-.0169
Errors	NOCHECK	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High		600.0					
Low		400.0					

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	453.0	-.0004	-.0028	.0003	.0008	199.0	-.0215
SDev	2.4	.0002	.0002	.0006	.0005	.0	.0268
%RSD	.5332	48.21	7.552	214.1	63.57	.0125	124.6
#1	454.7	-.0003	-.0029	.0007	.0004	199.0	-.0405
#2	451.3	-.0006	-.0026	-.0001	.0012	198.9	-.0026
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	NOCHECK
High	600.0					240.0	
Low	400.0					160.0	

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0052	.0018	524.3	.0195	.0004	.1009	-.3337
SDev	.0006	.0000	1.2	.0001	.0015	.0075	.1890
%RSD	11.90	1.752	.2224	.3290	376.4	7.391	56.65
#1	-.0057	.0018	525.2	.0195	.0015	.0956	-.4673
#2	-.0048	.0019	523.5	.0194	-.0007	.1062	-.2000
Errors	NOCHECK	NOCHECK	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High			600.0				
Low			400.0				

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0029	.0014	-.0822	.0312	.0026	.0044	-.0001
SDev	.0004	.0077	.0022	.0003	.0042	.0081	.0022
%RSD	12.49	552.8	2.707	.9729	157.3	185.1	1786.
#1	.0031	.0068	-.0838	.0310	.0056	-.0013	.0014
#2	.0026	-.0040	-.0806	.0315	-.0003	.0101	-.0016
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	88.98	-.0360	.0174	.8957	-.0066	-.0004	.0004
SDev	.50	.0012	.0111	.0079	.0009	.0078	.0026
%RSD	.5645	3.276	63.94	.8838	14.37	1932.	661.8
#1	88.62	-.0351	.0252	.9013	-.0072	.0051	.0022
#2	89.33	-.0368	.0095	.8901	-.0059	-.0059	-.0014
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0073	-.0428	.0030	.3947	.0573	.0064	.0020
SDev	.0000	.0015	.0001	.0197	.0395	.0000	.0039
%RSD	.5901	3.477	4.305	4.987	68.86	.1832	191.2
#1	.0073	-.0417	.0029	.4086	.0294	.0065	.0047
#2	.0074	-.0438	.0031	.3808	.0852	.0064	-.0007
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0037	-.0039	.0040
SDev	.0001	.0002	.0002
%RSD	2.966	5.887	5.545
#1	.0038	-.0038	.0042
#2	.0036	-.0041	.0038
Errors	NOCHECK	NOCHECK	NOCHECK
High			
Low			

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	712456	10000	--	--	--	--	--
SDev	3987.375	.0000000	--	--	--	--	--
%RSD	.5596657	.0000000	--	--	--	--	--
#1	709637	10000	--	--	--	--	--
#2	715276	10000	--	--	--	--	--

Method: DAILY1 Sample Name: ICSAB Operator:
Run Time: 02/06/16 01:50:23
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.123	489.4	1.101	1.141	.5347	H.6197	-.0146
SDev	.004	1.6	.013	.001	.0022	.0145	.0011
%RSD	.3749	.3254	1.166	.1197	.4075	2.335	7.694
#1	1.120	488.3	1.092	1.142	.5362	H.6300	-.0138
#2	1.126	490.5	1.110	1.140	.5332	H.6095	-.0154
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	NOCHECK
High	1.200	600.0	1.200	1.200	.6000	.6000	
Low	.8000	400.0	.8000	.8000	.4000	.4000	

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	445.5	1.037	.5039	.4983	.5354	196.1	-.0111
SDev	.6	.002	.0044	.0072	.0007	1.1	.0239
%RSD	.1306	.1645	.8796	1.434	.1246	.5741	216.1
#1	445.1	1.038	.5071	.5033	.5350	196.9	-.0280
#2	445.9	1.036	.5008	.4932	.5359	195.3	.0058
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK
High	600.0	1.200	.6000	.6000	.6000	240.0	
Low	400.0	.8000	.4000	.4000	.4000	160.0	

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0053	H1.202	511.6	.5398	1.064	.0690	-.2616
SDev	.0023	.005	2.4	.0037	.010	.0066	.1389
%RSD	42.73	.4372	.4624	.6885	.9577	9.608	53.09
#1	-.0037	H1.206	513.3	.5425	1.071	.0643	-.3597
#2	-.0069	1.199	509.9	.5372	1.057	.0737	-.1634
Errors	NOCHECK	LC High	LC Pass	LC Pass	LC Pass	NOCHECK	NOCHECK
High		1.200	600.0	.6000	1.200		
Low		.8000	400.0	.4000	.8000		

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9891	.9730	.9581	1.015	-.0013	.0057	1.122
SDev	.0072	.0027	.0452	.043	.0068	.0091	.004
%RSD	.7231	.2747	4.719	4.224	522.2	159.4	.3493
#1	.9840	.9749	.9261	1.046	.0035	.0121	1.119
#2	.9941	.9711	.9900	.9849	-.0062	-.0007	1.125
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass
High	1.200	1.200					1.200
Low	.8000	.8000					.8000

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	87.72	1.102	1.097	1.491	.9952	1.097	1.039
SDev	.56	.047	.018	.008	.0135	.003	.002
%RSD	.6350	4.251	1.671	.5111	1.357	.3093	.2000
#1	87.33	1.069	1.110	1.496	1.005	1.095	1.037
#2	88.12	1.135	1.084	1.486	.9856	1.100	1.040
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					1.200	1.200	1.200
Low					.8000	.8000	.8000

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.068	-.0656	1.021	H1.450	1.057	.5270	.0131
SDev	.004	.0411	.005	.014	.012	.0043	.0066
%RSD	.3479	62.74	.4528	.9556	1.117	.8225	50.65
#1	1.071	-.0365	1.018	H1.460	1.066	.5301	.0178
#2	1.065	-.0946	1.024	H1.440	1.049	.5240	.0084
Errors	LC Pass	NOCHECK	LC Pass	LC High	NOCHECK	LC Pass	NOCHECK
High	1.200		1.200	1.200		.6000	
Low	.8000		.8000	.8000		.4000	

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0028	1.041	.9386
SDev	.0014	.007	.0011
%RSD	47.72	.6460	.1146
#1	.0038	1.046	.9379
#2	.0019	1.036	.9394
Errors	NOCHECK	LC Pass	NOCHECK
High		1.200	
Low		.8000	

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	702429	10000	--	--	--	--	--
SDev	4434.974	.0000000	--	--	--	--	--
%RSD	.6313768	.0000000	--	--	--	--	--
#1	699293	10000	--	--	--	--	--
#2	705565	10000	--	--	--	--	--

Method: DAILY1 Sample Name: CCV Operator:
Run Time: 02/06/16 01:55:41
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.036	10.07	5.285	5.226	9.973	H1.103	5.050
SDev	.013	.04	.003	.029	.072	.044	.015
%RSD	1.267	.4249	.0618	.5617	.7202	4.028	.2907
#1	1.026	10.04	5.287	5.206	10.02	H1.134	5.061
#2	1.045	10.10	5.282	5.247	9.922	1.072	5.040
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	1.100	11.00	5.500	5.500	11.00	1.100	5.500
Low	.9000	9.000	4.500	4.500	9.000	.9000	4.500

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.01	1.062	5.189	2.017	1.999	9.988	18.84
SDev	.16	.002	.074	.028	.004	.199	.11
%RSD	.8194	.2266	1.434	1.382	.2169	1.991	.5959
#1	19.90	1.061	5.137	1.998	2.002	9.847	18.92
#2	20.13	1.064	5.242	2.037	1.996	10.13	18.76
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.00	1.100	5.500	2.200	2.200	11.00	22.00
Low	18.00	.9000	4.500	1.800	1.800	9.000	18.00

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.002	5.395	20.08	1.043	4.988	H38.04	28.86
SDev	.030	.041	.29	.011	.027	.31	.29
%RSD	.6007	.7679	1.451	1.069	.5425	.8034	1.014
#1	5.023	5.424	19.87	1.035	5.007	H38.26	28.65
#2	4.980	5.366	20.28	1.051	4.969	H37.83	29.06
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	5.500	5.500	22.00	1.100	5.500	33.00	33.00
Low	4.500	4.500	18.00	.9000	4.500	27.00	27.00

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.036	4.712	5.118	5.032	.9741	1.035	1.013
SDev	.072	.041	.130	.048	.0052	.023	.001
%RSD	1.427	.8607	2.538	.9507	.5295	2.179	.0635
#1	5.087	4.741	5.210	4.998	.9778	1.051	1.013
#2	4.985	4.684	5.026	5.066	.9705	1.019	1.014
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	5.500	5.500			1.100	1.100	1.100
Low	4.500	4.500			.9000	.9000	.9000

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	96.71	5.460	5.358	5.021	5.056	5.387	5.122
SDev	.45	.126	.043	.065	.011	.014	.113
%RSD	.4666	2.315	.7998	1.298	.2255	.2517	2.214
#1	96.39	5.550	5.327	4.975	5.064	5.396	5.042
#2	97.03	5.371	5.388	5.067	5.048	5.377	5.202
Errors	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass
High				5.500	5.500	5.500	5.500
Low				4.500	4.500	4.500	4.500

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.048	1.027	4.961	5.236	5.036	5.198	1.098
SDev	.034	.027	.009	.013	.046	.049	.007
%RSD	.6676	2.670	.1725	.2403	.9052	.9434	.6073
#1	5.072	1.008	4.955	5.245	5.069	5.163	1.094
#2	5.024	1.046	4.967	5.227	5.004	5.233	H1.103
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.500	1.100	5.500	5.500	5.500	5.500	1.100
Low	4.500	.9000	4.500	4.500	4.500	4.500	.9000

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	5.087	1.073	5.075
SDev	.017	.022	.006
%RSD	.3332	2.005	.1103
#1	5.099	1.057	5.071
#2	5.075	1.088	5.079
Errors	LC Pass	LC Pass	LC Pass
High	5.500	1.100	5.500
Low	4.500	.9000	4.500

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	774364	10000	--	--	--	--	--
SDev	3614.730	.0000000	--	--	--	--	--
%RSD	.4667998	.0000000	--	--	--	--	--
#1	771808	10000	--	--	--	--	--
#2	776920	10000	--	--	--	--	--

Method: DAILY1 Sample Name: CCB Operator:
Run Time: 02/06/16 02:01:00
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0031	-.0201	L-.0093	.0086	.0007	.0001	L-.0120
SDev	.0011	.0080	.0014	.0020	.0000	.0000	.0138
%RSD	36.50	39.68	15.02	23.44	.1150	20.86	114.8
#1	-.0039	-.0258	L-.0083	.0101	.0007	.0000	L-.0217
#2	-.0023	-.0145	L-.0102	.0072	.0007	.0001	-.0023
Errors	LC Pass	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Low
High	.0050	.0500	.0050	.0500	.0050	.0050	.0100
Low	-.0050	-.0500	-.0050	-.0500	-.0050	-.0050	-.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0013	-.0003	-.0008	.0019	-.0012	.0488	-.0165
SDev	.0007	.0001	.0003	.0002	.0007	.0011	.0302
%RSD	50.93	28.24	42.26	10.19	58.99	2.247	183.2
#1	.0008	-.0004	-.0010	.0021	-.0016	.0495	-.0378
#2	.0018	-.0003	-.0006	.0018	-.0007	.0480	.0049
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0500	.0050	.0050	.0050	.0050	.0500	.1000
Low	-.0500	-.0050	-.0050	-.0050	-.0050	-.0500	-.1000

Elem	La4086	Li6707	Mg2790	Mn2576	Mo2020	Na5889	Na3302
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0019	.0003	-.0040	.0004	.0042	.0076	.0249
SDev	.0015	.0001	.0025	.0001	.0013	.0052	.3832
%RSD	81.37	18.26	63.70	37.79	31.56	68.21	1541.
#1	-.0030	.0003	-.0058	.0005	H.0051	.0039	L-.2461
#2	-.0008	.0003	-.0022	.0003	.0032	.0113	H.2958
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0050	.0050	.0500	.0050	.0050	.0500	.0500
Low	-.0050	-.0050	-.0500	-.0050	-.0050	-.0500	-.0500

Elem	Ni2316	P_1782	2203/1	2203/2	Pd3404	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0009	-.0055	-.0163	.0089	-.0028	.0116	.0011
SDev	.0002	.0113	.0014	.0048	.0003	.0092	.0050
%RSD	27.16	204.0	8.877	54.46	11.91	79.65	456.5
#1	.0011	-.0135	-.0152	.0055	-.0026	.0051	-.0024
#2	.0007	.0024	-.0173	.0123	-.0030	.0181	.0046
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	.0050	.0200			.0050	.0200	.0100
Low	-.0050	-.0200			-.0050	-.0200	-.0100

Elem	Sc3613	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899

Units	%R	ppm	ppm	ppm	ppm	ppm	ppm
Avge	98.56	-.0102	.0230	.0057	.0005	H.0119	.0029
SDev	.16	.0081	.0023	.0009	.0027	.0012	.0001
%RSD	.1603	79.27	9.946	15.57	544.8	9.847	4.659
#1	98.67	-.0045	.0213	.0051	-.0014	H.0127	.0029
#2	98.44	-.0159	.0246	.0064	.0024	H.0111	.0028
Errors	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC High	LC Pass
High				.0100	.0050	.0050	.0100
Low				-.0100	-.0050	-.0050	-.0100

Elem	Sr4215	Th2837	Ti3372	Tl1908	U_3859	V_2924	W_2079
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0002	H.0106	-.0014	-.0064	-.0333	.0030	.0084
SDev	.0000	.0015	.0001	.0079	.0169	.0005	.0030
%RSD	30.82	14.59	5.761	121.9	50.92	16.06	35.78
#1	-.0002	.0095	-.0014	-.0009	-.0452	.0027	.0063
#2	-.0001	H.0116	-.0013	L-.0120	-.0213	.0034	H.0106
Errors	LC Pass	LC High	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0050	.0100	.0050	.0100	.1000	.0050	.0100
Low	-.0050	-.0100	-.0050	-.0100	-.1000	-.0050	-.0100

Elem	Y_3710	Zn2062	Zr3496
Units	ppm	ppm	ppm
Avge	.0006	-.0001	.0033
SDev	.0000	.0003	.0001
%RSD	1.104	426.6	3.864
#1	.0007	-.0003	.0033
#2	.0006	.0001	.0034
Errors	LC Pass	LC Pass	LC Pass
High	.0050	.0050	.0050
Low	-.0050	-.0050	-.0050

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	789046	10000	--	--	--	--	--
SDev	1301.784	.0000000	--	--	--	--	--
%RSD	.1649821	.0000000	--	--	--	--	--
#1	789966	10000	--	--	--	--	--
#2	788125	10000	--	--	--	--	--

010510

Southwest Research Institute

QC STD. ID's		ICP CAL. STD.	
CCV	66611	ID's	
CRI	66656	STD0	66862
ICSA	66658	STD1	65782
ICSAB	66659	STD2	65783
		STD3	65784
UCL1	66865	STD4	65056
UCL2	65793	STD5	65785
NIH CRI	66657	STD6	65048
UCL-Al-500ppm	65794		

☐ 200.7 TAP No. 01-0406-028 Rev10/Jun15

☑ 6010B TAP No. 01-0406-130 Rev11/Jun15

☐ 6010C TAP No. 01-0406-130 Rev11/Jun15

☐ SWRI TAP No. 01-0406-148 Rev4/May15

☐ OTHER _____

QC Earliest Expiration Date 3/21/2016

Internal Standard (Sc) @10ppm Added in **Prep lab: YES** (NO)
Internal Standard (Sc) @10ppm Added in **ICP lab**: Inorg# 601567 Exp: 9/22/16

IDL run date: **06/02/15**

IEC run date: 07/15/15

PROJ. NO.	PROJECT	TO#	DATE	MATRIX	LOGBOOK PG
21431.01.001	TETRA TECH	160115-1	2/5/16	Solid, TB.	20160126-P004

INSTRUMENT: TRACE2

FILENAME: B160205

2/8/16
ANALYST/DATE

Analytical Batch # 20160211-A002

File converted to wsl? ☐

2/8/16

010511

#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
1	blk	Y16FEB	DAILY2	02/05/16	17:21		X	IR
2	clp_std4	Y16FEB	DAILY2	02/05/16	17:27		X	IR
3	clp_std1	Y16FEB	DAILY2	02/05/16	17:31		X	IR
4	clp_std3	Y16FEB	DAILY2	02/05/16	17:35		X	IR
5	clp_std5	Y16FEB	DAILY2	02/05/16	17:38		X	IR
6	clp_std2	Y16FEB	DAILY2	02/05/16	17:42		X	IR
7	clp_std6	Y16FEB	DAILY2	02/05/16	17:46		X	IR
8	ICV	Y16FEB	DAILY2	02/05/16	17:50		S	CONC
9	ICB	Y16FEB	DAILY2	02/05/16	17:55		S	CONC
10	CRI	Y16FEB	DAILY2	02/05/16	18:01		S	CONC
11	CRI-N	Y16FEB	DAILY2	02/05/16	18:06		S	CONC
12	ICSA	Y16FEB	DAILY2	02/05/16	18:11		S	CONC
13	ICSAB	Y16FEB	DAILY2	02/05/16	18:16		S	CONC
14	UCL-1	Y16FEB	DAILY2	02/05/16	18:21		S	CONC
15	UCL-Al	Y16FEB	DAILY2	02/05/16	18:26		S	CONC
16	UCL-2	Y16FEB	DAILY2	02/05/16	18:31		S	CONC
17	ZZZZ	Y16FEB	DAILY2	02/05/16	18:36		S	CONC
18	CCV	Y16FEB	DAILY2	02/05/16	18:41		S	CONC
19	CCB	Y16FEB	DAILY2	02/05/16	18:47		S	CONC
20	PB16A26KE3	Y16FEB	DAILY2	02/05/16	18:52		S	CONC
21	LCS16A26KE3	Y16FEB	DAILY2	02/05/16	18:57		S	CONC
22	LCS16A26KE4	Y16FEB	DAILY2	02/05/16	19:02		S	CONC
23	LCS16A26KE7	Y16FEB	DAILY2	02/05/16	19:07		S	CONC
24	LCS16A26KE8	Y16FEB	DAILY2	02/05/16	19:12		S	CONC
25	588049TF DF10	Y16FEB	DAILY2	02/05/16	19:17		S	CONC
26	588556TF DF10	Y16FEB	DAILY2	02/05/16	19:22		S	CONC
27	588556TFD DF10	Y16FEB	DAILY2	02/05/16	19:27		S	CONC
28	588556TFL DF50	Y16FEB	DAILY2	02/05/16	19:33		S	CONC
29	588556TFMS3 DF10	Y16FEB	DAILY2	02/05/16	19:38		S	CONC
30	CCV	Y16FEB	DAILY2	02/05/16	19:43		S	CONC
31	CCB	Y16FEB	DAILY2	02/05/16	19:48		S	CONC
32	588556TFMS4 DF10	Y16FEB	DAILY2	02/05/16	19:53		S	CONC
33	588556TFAS DF10	Y16FEB	DAILY2	02/05/16	19:58		S	CONC
34	590212TF DF10	Y16FEB	DAILY2	02/05/16	20:03		S	CONC
35	590213TF DF10	Y16FEB	DAILY2	02/05/16	20:08		S	CONC
36	590214TF DF10	Y16FEB	DAILY2	02/05/16	20:13		S	CONC
37	591000TF DF10	Y16FEB	DAILY2	02/05/16	20:18		S	CONC
38	CRI	Y16FEB	DAILY2	02/05/16	20:24		S	CONC
39	CRI-N	Y16FEB	DAILY2	02/05/16	20:29		S	CONC
40	ICSA	Y16FEB	DAILY2	02/05/16	20:34		S	CONC
41	ICSAB	Y16FEB	DAILY2	02/05/16	20:39		S	CONC
42	CCV	Y16FEB	DAILY2	02/05/16	20:44		S	CONC
43	CCB	Y16FEB	DAILY2	02/05/16	20:49		S	CONC
44	588049TF	Y16FEB	DAILY2	02/05/16	20:54		S	CONC
45	588556TF	Y16FEB	DAILY2	02/05/16	20:59		S	CONC
46	588556TFD	Y16FEB	DAILY2	02/05/16	21:04		S	CONC
47	588556TFL DF5	Y16FEB	DAILY2	02/05/16	21:10		S	CONC
48	588556TFMS3	Y16FEB	DAILY2	02/05/16	21:15		S	CONC
49	588556TFMS4	Y16FEB	DAILY2	02/05/16	21:20		S	CONC
50	588556TFAS	Y16FEB	DAILY2	02/05/16	21:25		S	CONC
51	590212TF	Y16FEB	DAILY2	02/05/16	21:30		S	CONC
52	590213TF	Y16FEB	DAILY2	02/05/16	21:35		S	CONC
53	590214TF	Y16FEB	DAILY2	02/05/16	21:40		S	CONC

#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
54	CCV	Y16FEB	DAILY2	02/05/16	21:45		S	CONC
55	CCB	Y16FEB	DAILY2	02/05/16	21:50		S	CONC
56	591000TF	Y16FEB	DAILY2	02/05/16	21:55		S	CONC
57	CRI	Y16FEB	DAILY2	02/05/16	22:01		S	CONC
58	CRI-N	Y16FEB	DAILY2	02/05/16	22:06		S	CONC
59	ICSA	Y16FEB	DAILY2	02/05/16	22:11		S	CONC
60	ICSAB	Y16FEB	DAILY2	02/05/16	22:16		S	CONC
61	CCV	Y16FEB	DAILY2	02/05/16	22:21		S	CONC
62	CCB	Y16FEB	DAILY2	02/08/16	11:53		S	CONC

* Spiked 50 ul SpikE I (#60136)
20 ul ICM I (#58932)
IN 5 ml F.V.

2/9/16

010513

Standardization Rpt. 02/05/16 05:26:46 PM page 1

Method: DAILY2 Standard: blk
Run Time: 02/05/16 17:21:54

2/8/16

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Avge	-.0001	.0004	.0000	.0004	.0000	.0003	-.0000
SDev	.0001	.0000	.0000	.0001	.0000	.0000	.0000
%RSD	156.3	8.468	62.92	16.53	134.4	11.28	134.5
#1	-.0001	.0003	.0000	.0003	.0000	.0003	-.0001
#2	.0000	.0004	.0000	.0004	.0000	.0003	-.0000

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Avge	.0000	-.0000	-.0000	-.0001	.0002	-.0000	-.0001
SDev	.0000	.0000	.0000	.0002	.0000	.0001	.0004
%RSD	206.4	66.23	205.6	299.0	10.39	346.3	358.9
#1	-.0000	-.0000	-.0000	-.0002	.0002	-.0001	-.0004
#2	.0000	-.0000	.0000	.0001	.0002	.0001	.0002

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Avge	-.0001	-.0001	-.0000	.0000	.0000	-.0002	-.0365
SDev	.0003	.0001	.0001	.0000	.0000	.0002	.0023
%RSD	263.0	146.4	193.7	188.3	426.6	119.0	6.355
#1	-.0003	-.0002	-.0001	-.0000	.0000	-.0004	-.0381
#2	.0001	.0000	.0000	.0000	-.0000	-.0000	-.0348

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Avge	.0000	-.0000	.0000	.0001	-.0000	-.0010	149.3
SDev	.0000	.0002	.0001	.0003	.0000	.0000	.4
%RSD	246.9	834.9	1435.	281.5	18.25	2.908	.2806
#1	-.0000	-.0002	.0001	-.0001	-.0001	-.0011	149.6
#2	.0000	.0001	-.0001	.0003	-.0000	-.0010	149.0

Elem	1960/1	1960/2	Si2881	Sn1899	Sr4215	Th2837	Ti3349
Avge	-.0000	.0000	.0046	-.0000	-.0000	.0000	.0000
SDev	.0000	.0000	.0002	.0000	.0000	.0000	.0000
%RSD	25.53	75.63	4.321	111.0	149.1	93.78	68.23
#1	-.0000	.0001	.0045	-.0000	-.0001	.0000	.0000
#2	-.0000	.0000	.0047	-.0000	.0000	.0000	.0001

Elem	Tl1908	U_4090	V_2924	W_2079	Y_3710	Zn2062	Zr3496
Avge	-.0001	-.0008	-.0000	.0001	.0000	-.0000	.0001
SDev	.0000	.0013	.0000	.0001	.0000	.0000	.0007
%RSD	62.72	154.3	27.52	53.64	68.31	426.6	1156.
#1	-.0001	-.0017	-.0000	.0001	.0000	-.0000	-.0004
#2	-.0000	.0001	-.0000	.0002	.0000	.0000	.0005

2/9/16

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1492770	10000	--	--	--	--	--
SDev	4296.381	.0000000	--	--	--	--	--
%RSD	.2878127	.0000000	--	--	--	--	--
#1	1495808	10000	--	--	--	--	--
#2	1489732	10000	--	--	--	--	--

Method: DAILY2 Standard: clp_std4
Run Time: 02/05/16 17:27:01

Elem	Ag3280	2203/1	2203/2	Sb2068	1960/1	1960/2	Tl1908
Avge	.0732	.2405	.2392	.0713	.0986	.0958	.0907
SDev	.0001	.0010	.0006	.0001	.0008	.0010	.0001
%RSD	.1828	.4113	.2307	.0823	.8512	1.052	.0825
#1	.0731	.2398	.2388	.0712	.0980	.0951	.0908
#2	.0732	.2412	.2396	.0713	.0991	.0965	.0907

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1569515	10000	--	--	--	--	--
SDev	646.2956	.0000000	--	--	--	--	--
%RSD	.0411780	.0000000	--	--	--	--	--
#1	1569972	10000	--	--	--	--	--
#2	1569058	10000	--	--	--	--	--

Method: DAILY2 Standard: clp_std1
Run Time: 02/05/16 17:31:02

Elem	Al3082	Ca3179	Fe2714	K_7664	Li6707	Mg2790	Na3302
Avge	.0882	.2666	.0947	.2259	4.793	.1207	.0104
SDev	.0000	.0014	.0005	.0002	.017	.0001	.0000
%RSD	.0055	.5072	.5331	.0689	.3615	.0810	.3320
#1	.0882	.2675	.0951	.2260	4.805	.1207	.0104
#2	.0882	.2656	.0944	.2258	4.781	.1206	.0104

Elem	Na5889
Avge	5.443
SDev	.024
%RSD	.4358
#1	5.460
#2	5.426

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1518214	10000	--	--	--	--	--
SDev	1358.352	.0000000	--	--	--	--	--
%RSD	.0894704	.0000000	--	--	--	--	--
#1	1517253	10000	--	--	--	--	--
#2	1519174	10000	--	--	--	--	--

Method: DAILY2 Standard: clp_std3
Run Time: 02/05/16 17:35:04

Elem	As1890	Cd2265	Co2286	Mn2576	V_2924	Zn2062
Avge	.0472	.8926	.1552	.7245	.1730	.2558
SDev	.0000	.0006	.0002	.0004	.0002	.0001
%RSD	.0944	.0684	.1477	.0503	.0974	.0259
#1	.0471	.8922	.1553	.7247	.1731	.2557
#2	.0472	.8931	.1550	.7242	.1729	.2558

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1575366	10000	--	--	--	--	--
SDev	791.2525	.0000000	--	--	--	--	--
%RSD	.0502266	.0000000	--	--	--	--	--
#1	1574807	10000	--	--	--	--	--
#2	1575926	10000	--	--	--	--	--

Method: DAILY2 Standard: clp_std5
Run Time: 02/05/16 17:38:45

Elem	B_2496	Bi2230	Mo2020	Si2881	Sn1899	Sr4215	Ti3349
Avge	.1269	.0180	.1845	.1784	.0978	2.200	2.747
SDev	.0013	.0000	.0003	.0005	.0002	.000	.002
%RSD	1.014	.1988	.1789	.2690	.1974	.0214	.0783
#1	.1260	.0179	.1843	.1781	.0977	2.200	2.746
#2	.1279	.0180	.1847	.1788	.0979	2.200	2.749

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1553346	10000	--	--	--	--	--
SDev	2031.518	.0000000	--	--	--	--	--
%RSD	.1307834	.0000000	--	--	--	--	--
#1	1551909	10000	--	--	--	--	--
#2	1554782	10000	--	--	--	--	--

Method: DAILY2 Standard: clp_std2
Run Time: 02/05/16 17:42:47

Elem	Ba4934	Be3130	Cr2677	Cu3247	Ni2316
Avge	1.068	.3586	.4110	.2450	.2750
SDev	.002	.0004	.0000	.0001	.0003
%RSD	.1772	.1169	.0006	.0363	.1137
#1	1.067	.3583	.4110	.2449	.2748
#2	1.070	.3589	.4110	.2450	.2752

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1556408	10000	--	--	--	--	--
SDev	777.8174	.0000000	--	--	--	--	--
%RSD	.0499752	.0000000	--	--	--	--	--
#1	1555858	10000	--	--	--	--	--
#2	1556958	10000	--	--	--	--	--

Method: DAILY2 Standard: clp_std6
Run Time: 02/05/16 17:46:28

Elem	La3988	Pd3404	S_1820	Th2837	U_4090	W_2079	Y_3710
Avge	.4101	.2009	.0061	.0932	.0625	.0784	.6298
SDev	.0002	.0007	.0001	.0001	.0006	.0003	.0020
%RSD	.0595	.3324	.8192	.0573	.9714	.4412	.3136
#1	.4099	.2014	.0061	.0932	.0620	.0787	.6312
#2	.4102	.2004	.0061	.0933	.0629	.0782	.6284

Elem	Zr3496
Avge	2.031
SDev	.008
%RSD	.3706
#1	2.037
#2	2.026

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1608424	10000	--	--	--	--	--
SDev	10161.83	.0000000	--	--	--	--	--
%RSD	.6317883	.0000000	--	--	--	--	--
#1	1601238	10000	--	--	--	--	--
#2	1615609	10000	--	--	--	--	--

Method: DAILY2 Slope = Conc(SIR)/IR

Element	Wavelen	High std	Low std	Slope	Y-intercept	Date Standardized
Ag3280	328.068	clp_std4	blk	27.3170	.001744	02/05/16 05:46:28
Al3082	308.215	clp_std1	blk	569.474	-.207746	02/05/16 05:46:28
As1890	189.042	clp_std3	blk	212.155	-.006899	02/05/16 05:46:28
B_2496	249.678	clp_std5	blk	78.9916	-.028343	02/05/16 05:46:28
Ba4934	493.409	clp_std2	blk	9.35968	-.000126	02/05/16 05:46:28
Be3130	313.042	clp_std2	blk	2.79142	-.000890	02/05/16 05:46:28
Bi2230	223.061	clp_std5	blk	275.814	.007561	02/05/16 05:46:28
Ca3179	317.933	clp_std1	blk	187.574	-.001638	02/05/16 05:46:28
Cd2265	226.502	clp_std3	blk	11.1990	.000311	02/05/16 05:46:28
Co2286	228.616	clp_std3	blk	64.4449	.000667	02/05/16 05:46:28
Cr2677	267.716	clp_std2	blk	24.3266	.001290	02/05/16 05:46:28
Cu3247	324.753	clp_std2	blk	40.8516	-.007281	02/05/16 05:46:28
Fe2714	271.441	clp_std1	blk	527.729	.020051	02/05/16 05:46:28
K_7664	766.491	clp_std1	blk	221.250	.022118	02/05/16 05:46:28
La3988	398.853	clp_std6	blk	24.3949	.002629	02/05/16 05:46:28
Li6707	670.784	clp_std1	blk	2.08633	.000160	02/05/16 05:46:28
Mg2790	279.078	clp_std1	blk	207.064	.006017	02/05/16 05:46:28
Mn2576	257.610	clp_std3	blk	13.8024	-.000056	02/05/16 05:46:28
Mo2020	202.030	clp_std5	blk	54.1997	-.000054	02/05/16 05:46:28
Na3302	330.232	clp_std1	blk	4720.20	.918581	02/05/16 05:46:28
Na5889	588.991	clp_std1	blk	9.12403	.332797	02/05/16 05:46:28
Ni2316	231.604	clp_std2	blk	36.3613	-.000196	02/05/16 05:46:28
2203/1	220.353	clp_std4	blk	41.5715	.000922	02/05/16 05:46:28
2203/2	220.354	clp_std4	blk	41.7752	-.000233	02/05/16 05:46:28
Pd3404	340.458	clp_std6	blk	50.9538	-.004850	02/05/16 05:46:28
S_1820	182.040	clp_std6	blk	1627.40	.079018	02/05/16 05:46:28
Sb2068	206.838	clp_std4	blk	138.262	.143465	02/05/16 05:46:28
Sc3613	361.384	blk	dark	.670418	-.084908	02/05/16 05:46:28
1960/1	196.026	clp_std4	blk	101.450	.001904	02/05/16 05:46:28
1960/2	196.027	clp_std4	blk	104.414	-.004821	02/05/16 05:46:28
Si2881	288.158	clp_std5	blk	57.3882	-.264204	02/05/16 05:46:28
Pb220	220.355	NONE	NONE	1.00000	.000000	*NOT STANDARDIZED
Se196	196.028	STD7	STD1-Blank	1.00000	.000000	*NOT STANDARDIZED
Sn1899	189.989	clp_std5	blk	102.466	.001919	02/05/16 05:46:28
Sr4215	421.552	clp_std5	blk	4.54555	.000112	02/05/16 05:46:28
Th2837	283.730	clp_std6	blk	112.026	-.002668	02/05/16 05:46:28
Ti3349	334.941	clp_std5	blk	3.64025	-.000160	02/05/16 05:46:28
Tl1908	190.864	clp_std4	blk	110.155	.005714	02/05/16 05:46:28
U_4090	409.014	clp_std6	blk	173.124	.140771	02/05/16 05:46:28
V_2924	292.402	clp_std3	blk	57.7811	.002263	02/05/16 05:46:28
W_2079	207.914	clp_std6	blk	63.8451	-.009352	02/05/16 05:46:28
Y_3710	371.030	clp_std6	blk	15.8771	-.000144	02/05/16 05:46:28
Zn2062	206.200	clp_std3	blk	39.0984	.000130	02/05/16 05:46:28
Zr3496	349.621	clp_std6	blk	5.24775	-.000306	02/05/16 05:46:28

Method: DAILY2

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Ag3280	328.068	blk	.000000	-.000000	.000000
		clp_std4	2.00000	2.00000	.000000
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Al3082	308.215	blk	.000000	-.000000	.000000
		clp_std1	50.0000	50.0000	.000000
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
As1890	189.042	blk	.000000	-.000000	.000000
		clp_std3	10.0000	10.0002	-.000164
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
B_2496	249.678	blk	.000000	.000000	-.000000
		clp_std5	10.0000	9.99887	.001130
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Ba4934	493.409	blk	.000000	.000000	-.000000
		clp_std2	10.0000	10.0000	.000000
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Be3130	313.042	blk	.000000	-.000000	.000000
		clp_std2	1.00000	1.00000	.000000
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Bi2230	223.061	blk	.000000	.000000	-.000000
		clp_std5	5.00000	4.95974	.040256
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Ca3179	317.933	blk	.000000	-.000000	.000000
		clp_std1	50.0000	50.0000	.000000
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Cd2265	226.502	blk	.000000	.000000	-.000000
		clp_std3	10.0000	9.99710	.002900
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Co2286	228.616	blk	.000000	.000000	-.000000
		clp_std3	10.0000	10.0003	-.000299
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Cr2677	267.716	blk	.000000	-.000000	.000000
		clp_std2	10.0000	10.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Cu3247	324.753	blk	.000000	.000000	-.000000
		clp_std2	10.0000	10.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Fe2714	271.441	blk	.000000	-.000000	.000000
		clp_std1	50.0000	50.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
K_7664	766.491	blk	.000000	.000000	-.000000
		clp_std1	50.0000	50.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
La3988	398.853	blk	.000000	-.000000	.000000
		clp_std6	10.0000	10.0059	-.005869

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Li6707	670.784	blk	.000000	-.000000	.000000
		clp_std1	10.0000	10.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Mg2790	279.078	blk	.000000	-.000000	.000000
		clp_std1	25.0000	24.9893	.010700

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Mn2576	257.610	blk	.000000	-.000000	.000000
		clp_std3	10.0000	9.99911	.000890

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Mo2020	202.030	blk	.000000	.000000	-.000000
		clp_std5	10.0000	10.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Na3302	330.232	blk	.000000	.000000	-.000000
		clp_std1	50.0000	49.9482	.051804

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Na5889	588.991	blk	.000000	.000000	-.000000
		clp_std1	50.0000	49.9955	.004456

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Ni2316	231.604	blk	.000000	.000000	-.000000
		clp_std2	10.0000	10.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
2203/1	220.353	blk	.000000	.000000	-.000000
		clp_std4	10.0000	10.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
2203/2	220.354	blk	.000000	.000000	-.000000
		clp_std4	10.0000	9.99190	.008100

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Pd3404	340.458	blk	.000000	-.000000	.000000
		clp_std6	10.0000	10.2320	-.231961

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
S_1820	182.040	blk	.000000	-.000000	.000000
		clp_std6	10.0000	10.0070	-.007010

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Sb2068	206.838	blk	.000000	.000000	-.000000
		clp_std4	10.0000	10.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Sc3613	361.384	dark	.000000	-.000000	.000000
		blk	100.000	100.000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
1960/1	196.026	blk	.000000	.000000	-.000000
		clp_std4	10.0000	10.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
1960/2	196.027	blk	.000000	-.000000	.000000
		clp_std4	10.0000	10.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Si2881	288.158	blk	.000000	.000000	-.000000
		clp_std5	10.0000	9.97467	.025331

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Pb220	220.355	NONE	.000000	.000000	.000000
		NONE	.000000	.000000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Se196	196.028	STD1-Blank	.000000	.000000	.000000
		STD7	10.0000	.000000	10.0000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Sn1899	189.989	blk	.000000	.000000	-.000000
		clp_std5	10.0000	10.0221	-.022082

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Sr4215	421.552	blk	.000000	.000000	-.000000
		clp_std5	10.0000	10.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Th2837	283.730	blk	.000000	.000000	-.000000
		clp_std6	10.0000	10.4397	-.439739

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Ti3349	334.941	blk	.000000	.000000	-.000000
		clp_std5	10.0000	10.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Tl1908	190.864	blk	.000000	.000000	-.000000
		clp_std4	10.0000	9.99862	.001380

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
U_4090	409.014	blk	.000000	.000000	-.000000
		clp_std6	10.0000	10.9555	-.955465

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
V_2924	292.402	blk	.000000	-.000000	.000000
		clp_std3	10.0000	9.99981	.000190

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
W_2079	207.914	blk	.000000	-.000000	.000000
		clp_std6	5.00000	4.99842	.001580

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Y_3710	371.030	blk	.000000	.000000	-.000000
		clp_std6	10.0000	9.99947	.000530

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Zn2062	206.200	blk	.000000	-.000000	.000000
		clp_std3	10.0000	10.0005	-.000463

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Zr3496	349.621	blk	.000000	.000000	-.000000
		clp_std6	10.0000	10.6595	-.659513

Method: DAILY2 Sample Name: ICV Operator:
Run Time: 02/05/16 17:50:51
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.047	10.25	5.280	5.123	10.16	1.014	4.943
SDev	.000	.01	.011	.033	.00	.001	.007
%RSD	.0341	.0893	.2130	.6437	.0360	.0525	.1406
#1	1.046	10.26	5.288	5.100	10.17	1.014	4.948
#2	1.047	10.24	5.272	5.146	10.16	1.013	4.938
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.100	11.00	5.500	5.500	11.00	1.100	5.500
Low	.9000	9.000	4.500	4.500	9.000	.9000	4.500

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.81	1.031	5.059	1.989	2.032	10.12	19.69
SDev	.15	.001	.001	.000	.005	.07	.04
%RSD	.6990	.1170	.0257	.0212	.2521	.6451	.1841
#1	20.71	1.032	5.060	1.989	2.028	10.08	19.67
#2	20.91	1.030	5.058	1.989	2.035	10.17	19.72
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.00	1.100	5.500	2.200	2.200	11.00	22.00
Low	18.00	.9000	4.500	1.800	1.800	9.000	18.00

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.033	5.282	20.59	1.013	4.891	29.47	29.94
SDev	.000	.004	.00	.000	.006	.19	.06
%RSD	.0043	.0825	.0202	.0272	.1247	.6437	.2099
#1	5.033	5.285	20.59	1.013	4.887	29.33	29.98
#2	5.034	5.278	20.59	1.013	4.895	29.60	29.89
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.500	5.500	22.00	1.100	5.500	33.00	33.00
Low	4.500	4.500	18.00	.9000	4.500	27.00	27.00

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	4.983	4.995	4.969	.9728	1.039	1.001	101.7
SDev	.003	.012	.012	.0058	.005	.004	.0
%RSD	.0596	.2325	.2498	.5952	.4718	.4241	.0399
#1	4.981	4.987	4.978	.9687	1.036	.9982	101.7
#2	4.985	5.003	4.960	.9769	1.043	1.004	101.7
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	5.500			1.100	1.100	1.100	
Low	4.500			.9000	.9000	.9000	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.212	5.234	4.746	4.973	5.221	4.976	4.998
SDev	.009	.001	.012	.004	.002	.010	.001
%RSD	.1651	.0221	.2540	.0884	.0401	.1916	.0212
#1	5.206	5.234	4.738	4.976	5.220	4.982	4.999
#2	5.218	5.233	4.755	4.970	5.223	4.969	4.997
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			5.500	5.500	5.500	5.500	5.500
Low			4.500	4.500	4.500	4.500	4.500

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.005	4.795	5.183	4.847	5.081	H1.132	5.071
SDev	.000	.000	.001	.066	.004	.003	.006
%RSD	.0060	.0042	.0111	1.363	.0834	.2435	.1145
#1	1.005	4.795	5.183	4.800	5.078	H1.130	5.066
#2	1.005	4.795	5.183	4.893	5.084	H1.134	5.075
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	1.100	5.500	5.500	5.500	5.500	1.100	5.500
Low	.9000	4.500	4.500	4.500	4.500	.9000	4.500

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	1.037	4.885
SDev	.000	.057
%RSD	.0028	1.171
#1	1.037	4.844
#2	1.037	4.925
Errors	LC Pass	LC Pass
High	1.100	5.500
Low	.9000	4.500

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1517896	10000	--	--	--	--	--
SDev	574.8778	.0000000	--	--	--	--	--
%RSD	.0378734	.0000000	--	--	--	--	--
#1	1517489	10000	--	--	--	--	--
#2	1518302	10000	--	--	--	--	--

Method: DAILY2 Sample Name: ICB Operator:
Run Time: 02/05/16 17:55:58
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0006	-.0048	.0011	.0343	.0003	.0000	.0045
SDev	.0005	.0026	.0036	.0081	.0002	.0001	.0025
%RSD	89.37	54.35	327.5	23.64	81.76	175.5	54.50
#1	.0010	-.0066	-.0014	.0400	.0004	-.0000	.0063
#2	.0002	-.0030	.0036	.0286	.0001	.0001	.0028
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0050	.0500	.0050	.0500	.0050	.0050	.0100
Low	-.0050	-.0500	-.0050	-.0500	-.0050	-.0050	-.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0015	.0003	.0002	.0008	-.0002	-.0023	.0160
SDev	.0015	.0000	.0002	.0024	.0008	.0729	.0484
%RSD	101.4	7.733	122.4	321.9	479.6	3111.	302.4
#1	.0004	.0003	.0003	-.0010	.0004	L-.0539	-.0182
#2	.0026	.0003	.0000	.0025	-.0008	.0492	.0502
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0500	.0050	.0050	.0050	.0050	.0500	.1000
Low	-.0500	-.0050	-.0050	-.0050	-.0050	-.0500	-.1000

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0011	.0003	.0021	.0000	.0010	-.0307	.0129
SDev	.0042	.0001	.0011	.0001	.0007	.5817	.0177
%RSD	391.1	48.06	50.58	523.0	63.58	1897.	137.7
#1	-.0019	.0002	.0014	.0001	.0015	L-.4420	.0003
#2	.0041	.0003	.0029	-.0000	.0006	H.3807	.0254
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0050	.0050	.0500	.0050	.0050	.0500	.0500
Low	-.0050	-.0050	-.0500	-.0050	-.0050	-.0500	-.0500

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0003	-.0006	.0009	-.0033	.0087	.0034	102.4
SDev	.0001	.0050	.0005	.0059	.0170	.0054	.8
%RSD	23.20	847.8	54.20	178.3	196.5	157.3	.7782
#1	-.0002	-.0041	.0012	L-.0075	-.0034	.0072	101.8
#2	-.0003	.0030	.0005	.0009	H.0207	-.0004	103.0
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	.0050			.0050	.0200	.0100	
Low	-.0050			-.0050	-.0200	-.0100	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0002	.0003	.0008	.0004	.0003	.0022	.0002
SDev	.0152	.0019	.0017	.0014	.0038	.0015	.0000
%RSD	9040.	621.7	214.2	352.2	1444.	66.50	13.30
#1	-.0106	.0016	-.0004	-.0006	-.0024	.0012	.0002
#2	.0109	-.0010	.0020	.0013	.0030	.0033	.0002
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			.0100	.0050	.0050	.0100	.0050
Low			-.0100	-.0050	-.0050	-.0100	-.0050

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0024	-.0001	.0008	.0301	-.0001	.0006	.0001
SDev	.0069	.0003	.0040	.1528	.0007	.0026	.0002
%RSD	287.5	279.3	476.5	507.3	1063.	399.0	204.3
#1	.0025	.0001	-.0020	-.0779	.0004	-.0012	.0002
#2	-.0073	-.0003	.0037	H.1381	-.0005	.0025	-.0000
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0100	.0050	.0100	.1000	.0050	.0100	.0050
Low	-.0100	-.0050	-.0100	-.1000	-.0050	-.0100	-.0050

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0002	.0005
SDev	.0001	.0039
%RSD	33.58	753.2
#1	.0002	-.0022
#2	.0003	.0033
Errors	LC Pass	LC Pass
High	.0050	.0050
Low	-.0050	-.0050

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1528354	10000	--	--	--	--	--
SDev	11819.29	.0000000	--	--	--	--	--
%RSD	.7733348	.0000000	--	--	--	--	--
#1	1519996	10000	--	--	--	--	--
#2	1536711	10000	--	--	--	--	--

Method: DAILY2 Sample Name: CRI Operator:
Run Time: 02/05/16 18:01:04
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0122	.1265	.0099	H.1082	.0055	.0050	.0296
SDev	.0019	.0155	.0046	.0009	.0001	.0001	.0136
%RSD	15.72	12.23	46.90	.8823	2.694	1.153	45.97
#1	.0109	.1156	.0066	H.1075	.0054	.0050	.0200
#2	.0136	.1375	.0132	H.1089	.0056	.0051	H.0393
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass
High	.0150	.1500	.0150	.0600	.0075	.0075	.0300
Low	.0050	.0500	.0050	.0200	.0025	.0025	.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1074	.0056	.0063	.0062	.0062	.1151	.3347
SDev	.0021	.0006	.0013	.0022	.0011	.0246	.0465
%RSD	1.981	10.31	20.62	35.34	18.25	21.42	13.89
#1	.1059	.0052	.0054	.0047	.0054	.0977	.3018
#2	.1089	.0061	.0072	H.0078	.0070	.1325	.3676
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.1500	.0075	.0075	.0075	.0075	.1500	.7500
Low	.0500	.0025	.0025	.0025	.0025	.0500	.2500

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0115	.0085	.0609	.0053	.0050	.4210	.2455
SDev	.0042	.0002	.0071	.0000	.0001	.5296	.0111
%RSD	36.18	2.722	11.60	.8135	1.527	125.8	4.509
#1	.0086	.0083	.0559	.0052	.0049	L.0466	.2377
#2	.0145	.0087	.0658	.0053	.0050	H.7955	.2533
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0150	.0150	.1000	.0075	.0075	.5000	.5000
Low	.0050	.0050	.0250	.0025	.0025	.1250	.1250

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0048	.0081	.0058	.0224	.0649	.0227	102.2
SDev	.0002	.0031	.0009	.0053	.0013	.0111	.6
%RSD	4.552	37.76	15.17	23.73	2.036	48.97	.5944
#1	.0049	.0059	.0064	.0186	.0639	.0149	102.6
#2	.0046	.0103	.0052	.0261	.0658	H.0306	101.8
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	.0075			.0300	.0750	.0300	
Low	.0025			.0100	.0250	.0100	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0142	.0074	H.6376	.0066	.0097	.0138	.0054
SDev	.0001	.0009	.0094	.0004	.0006	.0003	.0001
%RSD	.5543	12.74	1.477	6.557	6.229	2.383	1.903
#1	.0142	.0081	H.6310	.0063	.0101	.0141	.0053
#2	.0143	.0067	H.6443	.0069	.0092	.0136	.0054
Errors	NOCHECK	NOCHECK	LC High	LC Pass	LC Pass	LC Pass	LC Pass
High			.1500	.0075	.0150	.0150	.0075
Low			.0500	.0025	.0050	.0050	.0025

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0227	.0050	.0234	.2396	.0061	.0274	.0055
SDev	.0042	.0004	.0117	.1407	.0010	.0011	.0001
%RSD	18.37	7.093	50.24	58.72	16.12	3.975	2.620
#1	.0257	.0048	.0151	.1401	.0054	.0282	.0054
#2	.0198	.0053	H.0317	H.3390	.0068	.0266	.0056
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0300	.0075	.0300	.3000	.0075	.0300	.0075
Low	.0100	.0025	.0100	.1000	.0025	.0100	.0025

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0056	.0058
SDev	.0003	.0019
%RSD	4.583	32.56
#1	.0054	.0045
#2	.0058	.0071
Errors	LC Pass	LC Pass
High	.0075	.0075
Low	.0025	.0025

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1525628	10000	--	--	--	--	--
SDev	9214.309	.0000000	--	--	--	--	--
%RSD	.6039684	.0000000	--	--	--	--	--
#1	1532143	10000	--	--	--	--	--
#2	1519112	10000	--	--	--	--	--

Method: DAILY2 Sample Name: CRI-N Operator:
Run Time: 02/05/16 18:06:11
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0213	.2305	.0171	H.1685	.0103	.0099	.0433
SDev	.0021	.0112	.0034	.0036	.0001	.0001	.0072
%RSD	10.07	4.869	19.90	2.156	1.125	.5770	16.55
#1	.0198	.2226	.0147	H.1660	.0103	.0099	.0382
#2	.0228	.2385	.0195	H.1711	.0104	.0100	.0484
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass
High	.0260	.2600	.0260	.1040	.0130	.0130	.0520
Low	.0140	.1400	.0140	.0560	.0070	.0070	.0280

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2092	.0104	.0101	.0097	.0098	.2027	L.6162
SDev	.0019	.0000	.0013	.0017	.0006	.0492	.0681
%RSD	.9281	.0508	12.57	17.87	5.672	24.27	11.05
#1	.2078	.0104	.0092	.0085	.0094	.1679	L.5681
#2	.2106	.0104	.0110	.0109	.0102	.2374	L.6644
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low
High	.2600	.0130	.0130	.0130	.0130	.2600	1.300
Low	.1400	.0070	.0070	.0070	.0070	.1400	.7000

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0191	.0174	.1050	.0102	.0098	.4112	.4637
SDev	.0051	.0002	.0042	.0001	.0002	.6774	.0172
%RSD	26.70	1.317	3.996	1.220	2.185	164.8	3.706
#1	.0155	.0173	.1020	.0101	.0100	L-.0678	.4515
#2	.0227	.0176	.1080	.0103	.0096	H.8902	.4758
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0260	.0260	.1300	.0130	.0130	.6500	.6500
Low	.0140	.0140	.0700	.0070	.0070	.3500	.3500

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0096	.0146	.0093	.0398	.1246	.0433	103.0
SDev	.0005	.0000	.0001	.0044	.0189	.0023	.1
%RSD	5.343	.2709	1.497	10.96	15.14	5.397	.0933
#1	.0092	.0145	.0094	.0367	H.1380	.0417	103.0
#2	.0099	.0146	.0092	.0429	.1113	.0450	103.1
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	.0130			.0520	.1300	.0520	
Low	.0070			.0280	.0700	.0280	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0254	.0220	H.9138	.0111	.0231	.0209	.0104
SDev	.0072	.0026	.0083	.0001	.0041	.0047	.0001
%RSD	28.37	11.56	.9089	.7210	17.71	22.59	.9365
#1	.0203	.0202	H.9079	.0111	.0202	.0175	.0103
#2	.0305	.0238	H.9197	.0110	H.0260	.0242	.0104
Errors	NOCHECK	NOCHECK	LC High	LC Pass	LC Pass	LC Pass	LC Pass
High			.2600	.0130	.0260	.0260	.0130
Low			.1400	.0070	.0140	.0140	.0070

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0412	.0095	.0394	.3554	.0099	.0429	.0102
SDev	.0037	.0002	.0073	.1758	.0010	.0034	.0001
%RSD	9.108	1.669	18.47	49.47	10.41	7.943	1.501
#1	.0439	.0093	.0342	L.2311	.0092	.0405	.0101
#2	.0386	.0096	.0445	.4797	.0107	.0454	.0103
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0520	.0130	.0520	.5200	.0130	.0520	.0130
Low	.0280	.0070	.0280	.2800	.0070	.0280	.0070

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0104	.0101
SDev	.0004	.0019
%RSD	3.824	19.18
#1	.0101	.0087
#2	.0107	.0115
Errors	LC Pass	LC Pass
High	.0130	.0130
Low	.0070	.0070

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1538100	10000	--	--	--	--	--
SDev	1409.264	.0000000	--	--	--	--	--
%RSD	.0916237	.0000000	--	--	--	--	--
#1	1537103	10000	--	--	--	--	--
#2	1539096	10000	--	--	--	--	--

Method: DAILY2 Sample Name: ICSA Operator:
Run Time: 02/05/16 18:11:17
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0018	479.6	-.0005	.1554	.0029	.0001	.0177
SDev	.0006	.2	.0026	.0137	.0000	.0000	.0059
%RSD	35.20	.0347	565.1	8.782	1.012	38.58	33.12
#1	-.0013	479.7	.0014	.1651	.0029	.0001	.0136
#2	-.0022	479.5	-.0023	.1458	.0029	.0001	.0218
Errors	NOCHECK	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High		600.0					
Low		400.0					

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	462.2	.0003	-.0031	.0001	-.0023	198.1	.0106
SDev	1.0	.0002	.0004	.0008	.0002	.4	.0287
%RSD	.2091	54.01	13.65	655.2	8.078	.2027	269.6
#1	462.9	.0002	-.0028	-.0004	-.0025	198.4	-.0097
#2	461.5	.0004	-.0034	.0007	-.0022	197.8	.0309
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	NOCHECK
High	600.0					240.0	
Low	400.0					160.0	

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0012	.0017	531.5	.0223	-.0013	.2585	.1345
SDev	.0021	.0001	.8	.0001	.0011	.3525	.0109
%RSD	174.4	4.247	.1546	.5735	84.59	136.4	8.139
#1	-.0027	.0017	532.1	.0224	-.0021	.0092	.1267
#2	.0003	.0018	531.0	.0222	-.0005	.5077	.1422
Errors	NOCHECK	NOCHECK	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High			600.0				
Low			400.0				

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0034	.0939	-.0402	.0910	-.0206	.0091	93.64
SDev	.0002	.0025	.0064	.0017	.0267	.0040	.49
%RSD	5.840	2.710	16.01	1.881	129.4	43.54	.5235
#1	-.0032	.0921	-.0448	.0922	-.0018	.0119	93.30
#2	-.0035	.0957	-.0357	.0898	-.0395	.0063	93.99
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0115	-.0027	.7527	.0045	.0021	-.0011	.0038
SDev	.0117	.0028	.0009	.0051	.0020	.0037	.0000
%RSD	101.4	106.3	.1252	114.8	96.81	335.1	.2147
#1	.0197	-.0047	.7520	.0008	.0035	-.0038	.0038
#2	.0033	-.0007	.7534	.0081	.0006	.0015	.0038
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0136	.0025	.0116	.0912	-.0033	.0035	-.0001
SDev	.0027	.0000	.0023	.0945	.0004	.0068	.0001
%RSD	19.97	1.484	19.47	103.5	10.85	195.5	100.4
#1	.0117	.0025	.0100	.0244	-.0035	.0083	-.0001
#2	.0156	.0025	.0132	.1580	-.0030	-.0013	-.0000
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	-.0047	-.0006
SDev	.0000	.0013
%RSD	.9444	198.9
#1	-.0046	-.0015
#2	-.0047	.0003
Errors	NOCHECK	NOCHECK
High		
Low		

010540

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1398012	10000	--	--	--	--	--
SDev	7358.860	.0000000	--	--	--	--	--
%RSD	.5263801	.0000000	--	--	--	--	--
#1	1392809	10000	--	--	--	--	--
#2	1403216	10000	--	--	--	--	--

Method: DAILY2 Sample Name: ICSAB Operator:
Run Time: 02/05/16 18:16:24
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.081	474.3	1.053	1.115	.5305	.5000	.0264
SDev	.001	1.0	.008	.015	.0010	.0001	.0119
%RSD	.1015	.2212	.7359	1.351	.1827	.0143	45.17
#1	1.080	475.1	1.047	1.125	.5312	.5000	.0180
#2	1.082	473.6	1.058	1.104	.5298	.5001	.0348
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK
High	1.200	600.0	1.200	1.200	.6000	.6000	
Low	.8000	400.0	.8000	.8000	.4000	.4000	

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	457.7	.9832	.4850	.4865	.5326	196.2	.0393
SDev	3.0	.0014	.0012	.0029	.0000	.8	.0742
%RSD	.6512	.1456	.2436	.5848	.0084	.3866	188.7
#1	455.6	.9822	.4841	.4845	.5326	195.7	-.0132
#2	459.8	.9842	.4858	.4885	.5325	196.8	.0918
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK
High	600.0	1.200	.6000	.6000	.6000	240.0	
Low	400.0	.8000	.4000	.4000	.4000	160.0	

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0009	1.182	528.2	.5178	1.021	.5575	.1064
SDev	.0053	.000	.6	.0001	.009	.7521	.0184
%RSD	576.9	.0006	.1210	.0219	.9279	134.9	17.26
#1	-.0028	1.182	527.7	.5177	1.014	.0257	.0934
#2	.0047	1.182	528.7	.5179	1.028	1.089	.1194
Errors	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK	NOCHECK
High		1.200	600.0	.6000	1.200		
Low		.8000	400.0	.4000	.8000		

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.9632	1.071	.9310	.0938	-.0034	1.066	94.23
SDev	.0026	.008	.0092	.0003	.0030	.003	.21
%RSD	.2664	.7535	.9869	.3673	87.58	.2564	.2176
#1	.9614	1.066	.9245	.0940	-.0055	1.064	94.37
#2	.9650	1.077	.9375	.0936	-.0013	1.068	94.08
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	NOCHECK
High	1.200					1.200	
Low	.8000					.8000	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

010542

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.020	1.032	1.342	.9769	1.027	.9820	1.032
SDev	.003	.006	.001	.0088	.003	.0072	.000
%RSD	.2900	.6159	.0381	.9019	.3162	.7313	.0264
#1	1.022	1.027	1.342	.9706	1.024	.9871	1.033
#2	1.018	1.036	1.341	.9831	1.029	.9769	1.032
Errors	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass
High				1.200	1.200	1.200	1.200
Low				.8000	.8000	.8000	.8000

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0154	.9524	.9881	1.103	.5010	.0088	.0001
SDev	.0078	.0001	.0016	.217	.0006	.0002	.0000
%RSD	50.34	.0089	.1612	19.70	.1214	2.646	27.81
#1	.0209	.9524	.9870	.9492	.5006	.0086	.0002
#2	.0099	.9525	.9893	1.257	.5015	.0089	.0001
Errors	NOCHECK	LC Pass	LC Pass	NOCHECK	LC Pass	NOCHECK	NOCHECK
High		1.200	1.200		.6000		
Low		.8000	.8000		.4000		

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.9734	.9449
SDev	.0021	.0070
%RSD	.2180	.7391
#1	.9719	.9400
#2	.9749	.9498
Errors	LC Pass	NOCHECK
High	1.200	
Low	.8000	

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1406656	10000	--	--	--	--	--
SDev	3039.852	.0000000	--	--	--	--	--
%RSD	.2161048	.0000000	--	--	--	--	--
#1	1408806	10000	--	--	--	--	--
#2	1404507	10000	--	--	--	--	--

Method: DAILY2 Sample Name: UCL-1 Operator:
Run Time: 02/05/16 18:21:30
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0053	560.8	-.0168	.1448	.0034	.0006	-.0166
SDev	.0013	1.3	.0036	.0401	.0000	.0000	.0055
%RSD	23.92	.2265	21.70	27.67	.1120	.1519	32.93
#1	.0062	559.9	-.0194	.1732	.0034	.0006	-.0204
#2	.0044	561.7	-.0142	.1165	.0034	.0006	-.0127

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	232.9	.0037	-.0110	-.0175	.0076	583.4	117.9
SDev	.6	.0001	.0003	.0004	.0002	1.4	.1
%RSD	.2696	2.727	2.550	2.345	2.401	.2451	.0875
#1	232.5	.0037	-.0112	-.0178	.0078	582.4	117.8
#2	233.4	.0036	-.0108	-.0172	.0075	584.4	117.9

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.3080	19.24	615.1	.0033	-.0047	281.5	S46.96
SDev	.0021	.00	.1	.0001	.0043	.6	.03
%RSD	.6706	.0195	.0200	3.679	91.08	.1956	.0634
#1	-.3066	19.24	615.2	.0032	-.0078	281.1	S46.94
#2	-.3095	19.25	615.0	.0034	-.0017	281.9	S46.99

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0162	.1318	-.0496	.4301	-.1134	-.0349	87.21
SDev	.0003	.0035	.0037	.0038	.0076	.0064	.22
%RSD	1.854	2.635	7.548	.8823	6.705	18.45	.2497
#1	-.0160	.1343	-.0522	.4328	-.1080	-.0395	87.36
#2	-.0165	.1293	-.0469	.4274	-.1188	-.0304	87.05

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.2542	-.0030	-.1434	.0109	-.0867	.0061	.0149
SDev	.0052	.0161	.0008	.0013	.0124	.0026	.0000
%RSD	2.035	531.1	.5306	12.28	14.36	42.20	.0179
#1	-.2579	-.0144	-.1439	.0099	-.0955	.0079	.0149
#2	-.2506	.0084	-.1428	.0118	-.0779	.0043	.0149

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.95	-.0380	.0292	.1469	.0052	-.0021	-.0031
SDev	.03	.0001	.0012	.0662	.0001	.0019	.0000
%RSD	.1215	.2602	4.116	45.09	1.376	89.85	.4022
#1	20.93	-.0379	.0284	.1001	.0052	-.0008	-.0031
#2	20.97	-.0381	.0301	.1937	.0051	-.0035	-.0031

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0966	-.0084
SDev	.0002	.0007
%RSD	.2020	8.734
#1	.0967	-.0089
#2	.0964	-.0079

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1301911	10000	--	--	--	--	--
SDev	3208.851	.0000000	--	--	--	--	--
%RSD	.2464723	.0000000	--	--	--	--	--
#1	1304180	10000	--	--	--	--	--
#2	1299642	10000	--	--	--	--	--

Method: DAILY2 Sample Name: UCL-Al Operator:
Run Time: 02/05/16 18:26:36
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0014	474.1	.0161	-.0225	.0006	.0001	.0130
SDev	.0004	.6	.0029	.0024	.0001	.0001	.0058
%RSD	28.19	.1188	18.20	10.67	11.39	48.13	44.51
#1	.0011	473.7	.0140	-.0242	.0006	.0001	.0089
#2	.0016	474.5	.0181	-.0208	.0007	.0002	.0171

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0297	-.0014	.0009	.0004	.0033	.0420	.0147
SDev	.0027	.0001	.0004	.0027	.0002	.0198	.0573
%RSD	9.163	8.267	47.90	653.3	5.655	46.96	391.1
#1	.0316	-.0015	.0006	-.0015	.0032	.0281	-.0259
#2	.0278	-.0013	.0012	.0023	.0035	.0560	.0552

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0004	.0009	.0355	.0042	-.0006	-.0880	-.0274
SDev	.0044	.0001	.0010	.0001	.0004	.5159	.0110
%RSD	1212.	13.95	2.794	2.053	56.81	586.2	40.01
#1	-.0028	.0010	.0362	.0041	-.0009	-.4528	-.0352
#2	.0035	.0008	.0348	.0042	-.0004	.2768	-.0197

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0000	.1167	-.0484	.0054	-.0382	.0012	91.53
SDev	.0003	.0004	.0024	.0011	.0291	.0099	.22
%RSD	4806.	.3527	4.871	20.02	76.07	790.9	.2451
#1	.0002	.1164	-.0467	.0061	-.0588	.0082	91.69
#2	-.0002	.1170	-.0501	.0046	-.0177	-.0057	91.37

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0011	-.0018	-.1918	.0066	-.0016	-.0038	.0001
SDev	.0088	.0033	.0026	.0014	.0007	.0035	.0000
%RSD	803.2	180.0	1.380	21.59	47.19	91.11	26.48
#1	-.0073	.0005	-.1936	.0077	-.0021	-.0014	.0001
#2	.0051	-.0041	-.1899	.0056	-.0010	-.0063	.0002

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0027	.0001	-.0015	.0267	.0008	.0046	.0001
SDev	.0043	.0001	.0025	.1637	.0005	.0040	.0001
%RSD	163.0	95.14	169.3	612.5	69.13	87.90	79.16
#1	.0004	.0000	.0003	-.0890	.0004	.0074	.0000
#2	-.0057	.0001	-.0033	.1425	.0011	.0017	.0001

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	-.0599	-.0002
SDev	.0001	.0019
%RSD	.1051	992.5
#1	-.0600	-.0015
#2	-.0599	.0012

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1366438	10000	--	--	--	--	--
SDev	3428.761	.0000000	--	--	--	--	--
%RSD	.2509268	.0000000	--	--	--	--	--
#1	1368863	10000	--	--	--	--	--
#2	1364014	10000	--	--	--	--	--

Method: DAILY2 Sample Name: UCL-2 Operator:
Run Time: 02/05/16 18:31:42
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.086	.0944	19.80	19.40	19.59	.9833	19.42
SDev	.002	.0028	.04	.03	.01	.0016	.04
%RSD	.1038	2.987	.2021	.1445	.0413	.1654	.2192
#1	2.088	.0964	19.77	19.38	19.58	.9844	19.39
#2	2.084	.0924	19.83	19.42	19.59	.9821	19.45

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1611	9.746	19.60	19.73	20.44	-.3422	.0246
SDev	.0005	.013	.03	.03	.03	.0091	.0347
%RSD	.2977	.1340	.1432	.1679	.1642	2.670	141.2
#1	.1614	9.737	19.62	19.75	20.46	-.3487	.0000
#2	.1607	9.755	19.58	19.71	20.41	-.3358	.0491

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.46	.0006	.0384	19.33	19.69	1.626	-.0197
SDev	.03	.0001	.0014	.04	.01	.035	.0097
%RSD	.1383	21.76	3.565	.2153	.0582	2.126	49.33
#1	20.48	.0005	.0393	19.36	19.70	1.651	-.0266
#2	20.44	.0006	.0374	19.30	19.68	1.602	-.0128

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	19.42	19.50	19.56	20.34	18.65	20.30	97.78
SDev	.01	.18	.05	.04	.15	.01	.31
%RSD	.0414	.9167	.2420	.2067	.8260	.0467	.3174
#1	19.42	19.62	19.60	20.37	18.76	20.30	97.56
#2	19.41	19.37	19.53	20.31	18.54	20.29	97.99

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	19.70	19.78	14.92	19.52	19.74	19.60	19.55
SDev	.19	.04	.06	.09	.09	.01	.06
%RSD	.9535	.1918	.4312	.4664	.4450	.0311	.2940
#1	19.83	19.81	14.87	19.59	19.80	19.60	19.59
#2	19.57	19.76	14.96	19.46	19.67	19.59	19.51

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0518	21.28	19.52	19.96	19.99	22.89	19.87
SDev	.0071	.03	.00	.05	.02	.01	.04
%RSD	13.78	.1176	.0021	.2623	.0756	.0606	.1857
#1	-.0468	21.30	19.52	19.93	20.00	22.88	19.90
#2	-.0569	21.26	19.52	20.00	19.98	22.90	19.85

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	19.09	21.10
SDev	.01	.03
%RSD	.0697	.1600
#1	19.10	21.12
#2	19.08	21.08

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1459558	10000	--	--	--	--	--
SDev	4543.161	.0000000	--	--	--	--	--
%RSD	.3112698	.0000000	--	--	--	--	--
#1	1456345	10000	--	--	--	--	--
#2	1462770	10000	--	--	--	--	--

Analysis Report 02/05/16 06:41:40 PM page 1

Method: DAILY2 Sample Name: ZZZZ Operator:
Run Time: 02/05/16 18:36:48
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0013	.0149	.0027	.0581	.0009	.0000	.0065
SDev	.0001	.0013	.0027	.0134	.0004	.0001	.0059
%RSD	7.543	8.784	100.9	23.05	42.47	153.3	90.17
#1	.0013	.0158	.0008	.0676	.0011	-.0000	.0024
#2	.0014	.0139	.0047	.0487	.0006	.0001	.0106

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0106	.0007	.0016	.0012	.0018	.0229	.0159
SDev	.0012	.0000	.0001	.0019	.0011	.0350	.0450
%RSD	10.95	1.537	4.797	158.0	63.82	152.5	282.3
#1	.0114	.0008	.0015	-.0001	.0025	-.0018	-.0159
#2	.0098	.0007	.0016	.0026	.0010	.0477	.0478

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0013	.0004	.0170	.0005	.0013	.0254	.0166
SDev	.0041	.0001	.0036	.0001	.0011	.4893	.0118
%RSD	322.0	25.80	21.44	29.51	80.50	1923.	71.33
#1	-.0016	.0003	.0196	.0006	.0021	-.3205	.0082
#2	.0042	.0004	.0144	.0004	.0006	.3714	.0250

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0009	.0049	-.0016	.0022	.0189	.0073	103.4
SDev	.0000	.0004	.0004	.0022	.0030	.0053	.1
%RSD	.5026	7.352	25.68	102.4	15.99	72.60	.0686
#1	.0009	.0052	-.0013	.0038	.0211	.0036	103.4
#2	.0009	.0047	-.0019	.0006	.0168	.0111	103.5

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0014	.0005	.0110	.0006	.0008	.0030	.0007
SDev	.0027	.0008	.0029	.0004	.0014	.0012	.0001
%RSD	198.7	166.7	26.03	69.52	184.4	41.59	14.99
#1	.0033	.0010	.0131	.0008	.0018	.0039	.0008
#2	-.0005	-.0001	.0090	.0003	-.0002	.0021	.0007

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0025	.0005	.0020	.0165	.0007	.0009	.0006
SDev	.0074	.0004	.0017	.1237	.0003	.0030	.0003
%RSD	298.1	83.62	86.44	750.4	43.32	353.7	52.00
#1	.0028	.0007	.0008	-.0710	.0009	.0030	.0008
#2	-.0077	.0002	.0032	.1040	.0005	-.0013	.0004

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0011	.0012
SDev	.0001	.0019
%RSD	8.950	160.7
#1	.0011	-.0002
#2	.0012	.0025

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1543960	10000	--	--	--	--	--
SDev	1112.986	.0000000	--	--	--	--	--
%RSD	.0720865	.0000000	--	--	--	--	--
#1	1543173	10000	--	--	--	--	--
#2	1544747	10000	--	--	--	--	--

Method: DAILY2 Sample Name: CCV Operator:
Run Time: 02/05/16 18:41:55
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.047	10.23	5.271	5.120	10.20	1.014	4.920
SDev	.002	.02	.008	.045	.01	.000	.012
%RSD	.2185	.1628	.1571	.8816	.0967	.0080	.2454
#1	1.045	10.25	5.277	5.088	10.19	1.014	4.911
#2	1.049	10.22	5.265	5.152	10.21	1.014	4.928
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.100	11.00	5.500	5.500	11.00	1.100	5.500
Low	.9000	9.000	4.500	4.500	9.000	.9000	4.500

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.93	1.033	5.061	1.993	2.028	10.20	19.68
SDev	.01	.000	.001	.002	.002	.03	.04
%RSD	.0473	.0118	.0108	.0866	.0890	.2766	.1947
#1	20.93	1.033	5.060	1.992	2.026	10.18	19.66
#2	20.94	1.033	5.061	1.994	2.029	10.22	19.71
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.00	1.100	5.500	2.200	2.200	11.00	22.00
Low	18.00	.9000	4.500	1.800	1.800	9.000	18.00

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.055	5.307	20.67	1.014	4.890	29.88	29.79
SDev	.004	.002	.00	.000	.005	.42	.02
%RSD	.0809	.0433	.0226	.0112	.1027	1.392	.0506
#1	5.052	5.308	20.67	1.014	4.887	29.59	29.80
#2	5.058	5.305	20.67	1.014	4.894	30.18	29.77
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.500	5.500	22.00	1.100	5.500	33.00	33.00
Low	4.500	4.500	18.00	.9000	4.500	27.00	27.00

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	4.993	5.021	5.003	.9797	.9680	1.005	101.4
SDev	.003	.001	.012	.0015	.0160	.001	.1
%RSD	.0594	.0160	.2452	.1586	1.651	.0796	.0770
#1	4.991	5.021	4.994	.9786	.9793	1.005	101.4
#2	4.995	5.022	5.012	.9808	.9567	1.006	101.5
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	5.500			1.100	1.100	1.100	
Low	4.500			.9000	.9000	.9000	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.245	5.269	4.748	5.004	5.256	4.977	4.987
SDev	.013	.024	.010	.008	.020	.007	.001
%RSD	.2492	.4559	.2183	.1687	.3872	.1411	.0196
#1	5.236	5.252	4.741	4.998	5.242	4.982	4.987
#2	5.254	5.286	4.755	5.010	5.270	4.972	4.986
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			5.500	5.500	5.500	5.500	5.500
Low			4.500	4.500	4.500	4.500	4.500

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.011	4.801	5.207	4.895	5.110	H1.145	5.081
SDev	.010	.002	.008	.104	.003	.006	.007
%RSD	.9949	.0346	.1559	2.129	.0609	.5594	.1364
#1	1.018	4.800	5.212	4.822	5.108	H1.140	5.076
#2	1.004	4.802	5.201	4.969	5.112	H1.149	5.086
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	1.100	5.500	5.500	5.500	5.500	1.100	5.500
Low	.9000	4.500	4.500	4.500	4.500	.9000	4.500

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	1.039	4.914
SDev	.001	.004
%RSD	.0763	.0755
#1	1.039	4.912
#2	1.040	4.917
Errors	LC Pass	LC Pass
High	1.100	5.500
Low	.9000	4.500

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1514005	10000	--	--	--	--	--
SDev	1226.123	.0000000	--	--	--	--	--
%RSD	.0809854	.0000000	--	--	--	--	--
#1	1513138	10000	--	--	--	--	--
#2	1514872	10000	--	--	--	--	--

Method: DAILY2 Sample Name: CCB Operator:
Run Time: 02/05/16 18:47:01
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0002	-.0032	.0025	.0428	.0005	.0000	.0043
SDev	.0002	.0012	.0002	.0069	.0001	.0000	.0017
%RSD	78.25	36.52	6.903	15.99	29.96	150.9	38.40
#1	.0004	-.0041	.0026	.0477	.0006	-.0000	.0055
#2	.0001	-.0024	.0023	.0380	.0004	.0001	.0032
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0050	.0500	.0050	.0500	.0050	.0050	.0100
Low	-.0050	-.0500	-.0050	-.0500	-.0050	-.0050	-.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0051	.0003	.0001	-.0000	.0002	.0068	.0016
SDev	.0003	.0001	.0003	.0024	.0001	.0618	.0490
%RSD	5.546	25.96	220.1	10020.	31.29	913.3	2995.
#1	.0053	.0004	-.0001	-.0017	.0002	-.0369	-.0330
#2	.0049	.0003	.0003	.0017	.0003	H.0505	.0363
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0500	.0050	.0050	.0050	.0050	.0500	.1000
Low	-.0500	-.0050	-.0050	-.0050	-.0050	-.0500	-.1000

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0001	.0004	.0037	.0001	.0008	-.0348	.0135
SDev	.0053	.0001	.0018	.0002	.0014	.8280	.0138
%RSD	6288.	27.57	48.85	119.2	184.0	2383.	102.3
#1	-.0036	.0003	.0050	.0003	.0018	L-.6203	.0037
#2	.0038	.0004	.0024	.0000	-.0002	H.5507	.0233
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0050	.0050	.0500	.0050	.0050	.0500	.0500
Low	-.0050	-.0050	-.0500	-.0050	-.0050	-.0500	-.0500

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0003	.0017	.0009	-.0004	H.0258	-.0032	103.4
SDev	.0002	.0037	.0025	.0017	.0112	.0032	.3
%RSD	72.28	215.9	275.9	424.5	43.29	101.4	.2430
#1	-.0005	.0043	-.0009	-.0016	H.0337	-.0055	103.2
#2	-.0002	-.0009	.0027	.0008	.0179	-.0009	103.6
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC High	LC Pass	NOCHECK
High	.0050			.0050	.0200	.0100	
Low	-.0050			-.0050	-.0200	-.0100	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0011	-.0015	.0010	.0012	-.0006	.0019	.0004
SDev	.0014	.0007	.0015	.0004	.0009	.0013	.0001
%RSD	126.8	45.29	152.9	37.84	142.9	69.69	20.07
#1	.0021	-.0010	.0021	.0009	.0000	.0029	.0004
#2	.0001	-.0020	-.0001	.0015	-.0013	.0010	.0003
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			.0100	.0050	.0050	.0100	.0050
Low			-.0100	-.0050	-.0050	-.0100	-.0050

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0004	.0001	.0040	-.0144	.0003	.0040	.0004
SDev	.0036	.0003	.0016	.1771	.0001	.0022	.0001
%RSD	840.3	330.9	39.65	1230.	22.74	55.94	17.96
#1	.0021	.0003	.0052	L-.1396	.0003	.0024	.0004
#2	-.0030	-.0001	.0029	H.1108	.0004	.0056	.0003
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0100	.0050	.0100	.1000	.0050	.0100	.0050
Low	-.0100	-.0050	-.0100	-.1000	-.0050	-.0100	-.0050

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0004	.0009
SDev	.0001	.0025
%RSD	16.27	280.7
#1	.0005	-.0009
#2	.0004	.0027
Errors	LC Pass	LC Pass
High	.0050	.0050
Low	-.0050	-.0050

010557

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1543862	10000	--	--	--	--	--
SDev	3813.427	.0000000	--	--	--	--	--
%RSD	.2470058	.0000000	--	--	--	--	--
#1	1541165	10000	--	--	--	--	--
#2	1546558	10000	--	--	--	--	--

Method: DAILY2 Sample Name: PB16A26KE3 Operator:
Run Time: 02/05/16 18:52:07
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0018	.0890	-.0017	.2046	.0341	-.0000	.0086
SDev	.0013	.0118	.0025	.0025	.0000	.0001	.0076
%RSD	72.50	13.25	147.6	1.221	.0905	313.2	87.68
#1	.0009	.0807	-.0035	.2029	.0341	-.0001	.0033
#2	.0027	.0973	.0001	.2064	.0341	.0000	.0139

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0844	.0003	.0009	.0011	.0003	.0559	.0384
SDev	.0023	.0000	.0009	.0026	.0004	.0602	.0488
%RSD	2.715	6.189	102.3	236.8	146.0	107.7	126.9
#1	.0828	.0004	.0002	-.0008	.0006	.0133	.0040
#2	.0860	.0003	.0015	.0030	-.0000	.0985	.0729

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0015	.0005	.0469	.0003	-.0008	.3610	.1503
SDev	.0039	.0002	.0107	.0000	.0009	.7674	.0123
%RSD	255.6	29.94	22.89	10.14	114.2	212.6	8.174
#1	-.0012	.0004	.0393	.0003	-.0002	-.1817	.1416
#2	.0042	.0006	.0545	.0003	-.0014	.9037	.1590

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0005	.0063	-.0000	.0021	.0264	.0089	108.6
SDev	.0003	.0019	.0002	.0099	.0141	.0011	.1
%RSD	62.86	29.53	1279.	475.7	53.43	12.35	.0625
#1	-.0007	.0076	.0001	-.0049	.0165	.0097	108.5
#2	-.0003	.0050	-.0002	.0091	.0364	.0082	108.6

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0003	-.0029	1.372	.0021	-.0020	.0059	.0009
SDev	.0011	.0017	.006	.0008	.0008	.0036	.0001
%RSD	425.0	61.21	.4540	36.70	40.93	61.36	12.32
#1	-.0010	-.0016	1.367	.0026	-.0014	.0033	.0008
#2	.0005	-.0041	1.376	.0015	-.0026	.0084	.0010

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0023	.0009	-.0006	.0407	-.0001	.0099	-.0001
SDev	.0031	.0000	.0030	.1530	.0001	.0037	.0002
%RSD	135.5	1.347	534.1	375.9	46.45	37.07	200.9
#1	-.0001	.0009	-.0027	-.0675	-.0001	.0073	.0000
#2	-.0044	.0009	.0016	.1489	-.0002	.0126	-.0002

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0019	.0026
SDev	.0005	.0028
%RSD	26.02	106.8
#1	.0015	.0006
#2	.0022	.0045

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1620384	10000	--	--	--	--	--
SDev	931.2596	.0000000	--	--	--	--	--
%RSD	.0574716	.0000000	--	--	--	--	--
#1	1619725	10000	--	--	--	--	--
#2	1621042	10000	--	--	--	--	--

Method: DAILY2 Sample Name: LCS16A26KE3 Operator:
Run Time: 02/05/16 18:57:14
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0980	4.059	3.898	.2779	4.015	.0953	-.0012
SDev	.0018	.029	.003	.0043	.002	.0000	.0105
%RSD	1.873	.7224	.0851	1.552	.0453	.0346	874.5
#1	.0967	4.039	3.895	.2749	4.016	.0953	-.0086
#2	.0993	4.080	3.900	.2810	4.014	.0953	.0062

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.47	.0963	.9746	.3686	.4950	2.094	16.74
SDev	.01	.0008	.0018	.0037	.0009	.066	.13
%RSD	.0505	.8148	.1868	1.010	.1824	3.162	.7957
#1	20.47	.0958	.9733	.3660	.4956	2.047	16.64
#2	20.46	.0969	.9759	.3712	.4943	2.141	16.83

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0020	.0007	19.83	.9842	-.0000	18.51	18.91
SDev	.0061	.0002	.07	.0006	.0004	.87	.10
%RSD	312.2	30.41	.3391	.0591	1112.	4.692	.5370
#1	-.0024	.0006	19.79	.9838	.0002	17.89	18.84
#2	.0063	.0009	19.88	.9847	-.0003	19.12	18.98

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.9537	.9669	.9624	-.0047	1.735	.9997	104.3
SDev	.0027	.0070	.0104	.0134	.018	.0031	.3
%RSD	.2835	.7245	1.081	284.1	1.018	.3077	.3226
#1	.9518	.9620	.9551	-.0142	1.723	.9975	104.5
#2	.9556	.9719	.9698	.0048	1.748	1.002	104.1

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.690	3.728	1.836	.9630	3.712	.0057	.0004
SDev	.004	.037	.005	.0093	.026	.0024	.0001
%RSD	.1219	.9880	.2864	.9618	.7013	41.91	34.96
#1	3.687	3.702	1.832	.9564	3.693	.0040	.0003
#2	3.694	3.754	1.840	.9695	3.730	.0074	.0005

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0239	.0019	3.976	.0763	.9907	.0207	.0001
SDev	.0095	.0002	.002	.1915	.0007	.0044	.0003
%RSD	39.84	10.21	.0512	250.8	.0679	21.12	233.5
#1	-.0171	.0020	3.978	-.0590	.9902	.0176	.0003
#2	-.0306	.0017	3.975	.2117	.9911	.0238	-.0001

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.9848	.0041
SDev	.0039	.0030
%RSD	.3973	74.01
#1	.9821	.0019
#2	.9876	.0062

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1556908	10000	--	--	--	--	--
SDev	4927.827	.0000000	--	--	--	--	--
%RSD	.3165138	.0000000	--	--	--	--	--
#1	1560392	10000	--	--	--	--	--
#2	1553423	10000	--	--	--	--	--

Method: DAILY2 Sample Name: LCS16A26KE4 Operator:
Run Time: 02/05/16 19:02:20
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2318	.4763	.2281	.3528	.2485	.2288	.2337
SDev	.0016	.0090	.0052	.0053	.0005	.0001	.0044
%RSD	.6932	1.889	2.269	1.510	.2113	.0374	1.868
#1	.2306	.4699	.2244	.3490	.2489	.2288	.2306
#2	.2329	.4826	.2318	.3565	.2482	.2289	.2368

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2993	.2371	.2338	.1078	.2445	.2616	.1710
SDev	.0019	.0004	.0012	.0032	.0010	.0285	.0557
%RSD	.6315	.1879	.5281	2.921	.4152	10.90	32.57
#1	.2980	.2368	.2330	.1056	.2438	.2414	.1316
#2	.3007	.2374	.2347	.1100	.2453	.2817	.2104

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1836	.2212	.2498	.2396	.2362	3.995	.4255
SDev	.0027	.0023	.0091	.0004	.0014	.566	.0154
%RSD	1.468	1.028	3.655	.1852	.5913	14.17	3.609
#1	.1817	.2196	.2434	.2393	.2352	3.595	.4146
#2	.1855	.2229	.2563	.2399	.2372	4.396	.4363

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.2327	.2473	.2313	.2333	.2032	.2217	110.4
SDev	.0002	.0006	.0016	.0020	.0091	.0017	.1
%RSD	.0986	.2400	.6775	.8635	4.457	.7610	.1082
#1	.2326	.2468	.2302	.2319	.2096	.2229	110.5
#2	.2329	.2477	.2324	.2348	.1967	.2205	110.3

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2204	.2249	2.022	.2364	.2232	.2248	.2403
SDev	.0028	.0085	.007	.0012	.0066	.0055	.0001
%RSD	1.275	3.759	.3621	.5251	2.942	2.465	.0334
#1	.2185	.2190	2.017	.2355	.2186	.2209	.2404
#2	.2224	.2309	2.027	.2373	.2279	.2287	.2403

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2505	.2257	.2243	.1042	.2365	.2190	.2436
SDev	.0040	.0003	.0033	.1742	.0018	.0022	.0002
%RSD	1.615	.1313	1.484	167.2	.7617	1.000	.0834
#1	.2534	.2255	.2220	-.0190	.2353	.2206	.2437
#2	.2476	.2259	.2267	.2273	.2378	.2175	.2434

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.2412	.2284
SDev	.0012	.0021
%RSD	.4976	.9011
#1	.2403	.2270
#2	.2420	.2299

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1648089	10000	--	--	--	--	--
SDev	1834.235	.0000000	--	--	--	--	--
%RSD	.1112947	.0000000	--	--	--	--	--
#1	1649386	10000	--	--	--	--	--
#2	1646792	10000	--	--	--	--	--

Method: DAILY2 Sample Name: LCS16A26KE7 Operator:
Run Time: 02/05/16 19:07:27
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0044	137.8	.0056	.3297	1.785	.0052	.0125
SDev	.0009	.3	.0009	.0017	.002	.0000	.0040
%RSD	21.81	.2419	15.45	.5049	.0870	.6245	31.70
#1	.0037	138.0	.0062	.3308	1.786	.0052	.0097
#2	.0050	137.5	.0050	.3285	1.784	.0052	.0154

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	13.98	-.0001	.0034	.0120	.0105	27.80	61.72
SDev	.09	.0001	.0001	.0023	.0011	.15	.05
%RSD	.6261	136.2	4.251	18.76	10.77	.5309	.0764
#1	14.04	-.0000	.0035	.0104	.0113	27.90	61.68
#2	13.92	-.0001	.0033	.0136	.0097	27.69	61.75

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0583	.1008	2.809	.7485	.0069	70.09	65.93
SDev	.0037	.0000	.003	.0001	.0003	.30	.12
%RSD	6.252	.0050	.1121	.0163	4.538	.4279	.1770
#1	.0558	.1008	2.807	.7484	.0071	69.87	66.01
#2	.0609	.1008	2.811	.7486	.0067	70.30	65.85

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0062	.0622	.0182	.0218	.0467	.0058	103.8
SDev	.0016	.0005	.0014	.0071	.0038	.0055	.6
%RSD	26.57	.7552	7.416	32.41	8.219	94.47	.5557
#1	.0073	.0625	.0173	.0168	.0440	.0097	103.4
#2	.0050	.0618	.0192	.0268	.0494	.0019	104.2

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0064	.0015	2.625	.0328	-.0011	.0072	.1227
SDev	.0025	.0048	.003	.0008	.0023	.0016	.0000
%RSD	40.05	317.3	.1308	2.271	209.6	21.53	.0002
#1	-.0082	.0049	2.623	.0323	.0005	.0061	.1227
#2	-.0046	-.0019	2.627	.0334	-.0028	.0083	.1227

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0335	2.632	-.0008	.0485	.0134	.0134	.0733
SDev	.0086	.000	.0086	.1203	.0004	.0007	.0004
%RSD	25.63	.0181	1034.	248.0	2.754	5.499	.5616
#1	.0396	2.632	-.0069	-.0366	.0137	.0129	.0736
#2	.0275	2.632	.0053	.1336	.0132	.0139	.0730

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0878	.5463
SDev	.0000	.0021
%RSD	.0207	.3898
#1	.0878	.5478
#2	.0878	.5448

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1549224	10000	--	--	--	--	--
SDev	8505.787	.0000000	--	--	--	--	--
%RSD	.5490352	.0000000	--	--	--	--	--
#1	1543210	10000	--	--	--	--	--
#2	1555239	10000	--	--	--	--	--

Method: DAILY2 Sample Name: LCS16A26KE8 Operator:
Run Time: 02/05/16 19:12:34
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0012	185.3	-.0031	.4433	.3717	.0010	.0372
SDev	.0030	.1	.0004	.0197	.0002	.0001	.0044
%RSD	246.2	.0662	13.89	4.432	.0642	8.435	11.84
#1	-.0009	185.2	-.0034	.4572	.3719	.0009	.0341
#2	.0033	185.4	-.0028	.4294	.3716	.0010	.0403

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	174.9	.0004	.0904	.6383	.1956	147.6	3.594
SDev	.3	.0003	.0012	.0047	.0004	.2	.096
%RSD	.1807	72.54	1.322	.7420	.2157	.1655	2.660
#1	174.7	.0002	.0895	.6350	.1953	147.4	3.526
#2	175.2	.0005	.0912	.6417	.1959	147.7	3.662

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0117	.0174	107.0	2.604	.0005	33.30	34.29
SDev	.0071	.0003	.3	.003	.0000	1.01	.20
%RSD	60.28	1.811	.2533	.1193	6.737	3.033	.5954
#1	.0067	.0172	106.8	2.602	.0005	32.59	34.14
#2	.0167	.0176	107.2	2.606	.0005	34.01	34.43

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.3100	.0398	-.0127	.0822	.2115	-.0134	101.0
SDev	.0001	.0014	.0013	.0063	.0076	.0049	.1
%RSD	.0470	3.444	10.07	7.682	3.613	36.57	.1291
#1	.3099	.0388	-.0118	.0778	.2061	-.0169	101.1
#2	.3101	.0408	-.0136	.0867	.2169	-.0099	100.9

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0051	.0052	2.986	.0048	.0052	-.0186	.3523
SDev	.0055	.0014	.007	.0004	.0027	.0030	.0007
%RSD	107.1	26.37	.2335	8.260	53.17	16.23	.1969
#1	.0013	.0042	2.981	.0051	.0032	-.0208	.3518
#2	.0090	.0061	2.991	.0045	.0071	-.0165	.3528

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0164	14.84	.0065	.1528	.5403	.0068	.0395
SDev	.0065	.01	.0084	.2433	.0006	.0020	.0000
%RSD	39.73	.0903	128.3	159.2	.1137	29.97	.0585
#1	.0210	14.83	.0006	-.0192	.5398	.0053	.0395
#2	.0118	14.85	.0125	.3249	.5407	.0082	.0395

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.1752	.1073
SDev	.0008	.0042
%RSD	.4777	3.876
#1	.1746	.1043
#2	.1758	.1102

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1508189	10000	--	--	--	--	--
SDev	2050.610	.0000000	--	--	--	--	--
%RSD	.1359650	.0000000	--	--	--	--	--
#1	1509639	10000	--	--	--	--	--
#2	1506739	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 588049TF DF10 Operator:
Run Time: 02/05/16 19:17:40
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0019	22.35	.0280	-.0023	18.06	.0009	.0045
SDev	.0011	.37	.0006	.0014	.31	.0000	.0057
%RSD	55.92	1.662	1.998	60.47	1.719	4.485	127.8
#1	.0011	22.61	.0276	-.0033	18.28	.0009	.0004
#2	.0026	22.09	.0284	-.0013	17.84	.0010	.0085

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	27.53	.0015	.4770	.0249	.3008	12.70	4.956
SDev	.32	.0002	.0078	.0022	.0050	.08	.044
%RSD	1.149	10.96	1.628	8.674	1.679	.6450	.8940
#1	27.75	.0014	.4825	.0233	.3043	12.76	4.987
#2	27.30	.0017	.4715	.0264	.2972	12.64	4.924

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0186	.0132	6.133	.3376	.1148	3.582	3.928
SDev	.0041	.0001	.105	.0059	.0028	.596	.058
%RSD	22.25	.9844	1.710	1.760	2.407	16.65	1.472
#1	.0157	.0133	6.207	.3418	.1167	3.160	3.968
#2	.0215	.0131	6.059	.3334	.1128	4.004	3.887

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.6487	2.070	2.093	.0083	2.116	.0071	103.7
SDev	.0108	.029	.054	.0029	.039	.0021	.8
%RSD	1.668	1.396	2.574	34.77	1.843	29.06	.7411
#1	.6564	2.090	2.131	.0062	2.144	.0085	103.2
#2	.6411	2.050	2.055	.0103	2.089	.0056	104.3

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0553	.0478	-.1290	2.083	.0503	.0040	.5360
SDev	.0008	.0060	.0040	.045	.0037	.0003	.0088
%RSD	1.499	12.50	3.096	2.183	7.371	7.781	1.635
#1	.0547	.0521	-.1318	2.115	.0529	.0038	.5422
#2	.0559	.0436	-.1261	2.051	.0477	.0043	.5298

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0725	1.420	.0087	.5128	.1619	.0015	.0137
SDev	.0064	.023	.0048	.1650	.0035	.0007	.0003
%RSD	8.832	1.637	55.16	32.18	2.136	44.48	2.488
#1	.0771	1.436	.0053	.3961	.1644	.0019	.0139
#2	.0680	1.403	.0121	.6295	.1595	.0010	.0134

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0892	.0880
SDev	.0017	.0014
%RSD	1.904	1.570
#1	.0904	.0871
#2	.0880	.0890

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1548116	10000	--	--	--	--	--
SDev	11460.08	.0000000	--	--	--	--	--
%RSD	.7402595	.0000000	--	--	--	--	--
#1	1540013	10000	--	--	--	--	--
#2	1556220	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 588556TF DF10 Operator:
Run Time: 02/05/16 19:22:47
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0019	25.24	.0309	.0030	23.19	.0012	.0017
SDev	.0006	.00	.0042	.0022	.02	.0001	.0116
%RSD	29.42	.0093	13.72	74.72	.1075	6.396	672.2
#1	.0015	25.24	.0339	.0014	23.21	.0012	-.0065
#2	.0023	25.24	.0279	.0045	23.17	.0013	.0099

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	62.86	.0021	.9312	.0384	.6032	17.50	5.114
SDev	.37	.0002	.0012	.0032	.0015	.15	.054
%RSD	.5898	11.11	.1293	8.225	.2510	.8588	1.047
#1	62.60	.0020	.9320	.0361	.6043	17.40	5.076
#2	63.12	.0023	.9303	.0406	.6021	17.61	5.152

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0365	.0249	10.13	.6970	.1135	2.833	3.147
SDev	.0053	.0003	.02	.0003	.0002	.780	.022
%RSD	14.60	1.239	.1832	.0393	.1890	27.52	.6901
#1	.0328	.0247	10.12	.6972	.1133	2.282	3.131
#2	.0403	.0251	10.14	.6968	.1136	3.385	3.162

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	1.220	2.548	2.530	.0096	3.105	.0089	102.7
SDev	.001	.013	.018	.0020	.016	.0060	.7
%RSD	.0590	.5217	.7302	21.08	.5008	67.28	.6592
#1	1.220	2.539	2.517	.0110	3.116	.0046	103.2
#2	1.219	2.558	2.543	.0082	3.094	.0131	102.2

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0479	.0487	-.1096	2.533	.0484	.0197	1.148
SDev	.0025	.0017	.0048	.017	.0019	.0007	.005
%RSD	5.141	3.474	4.415	.6606	4.023	3.465	.4220
#1	.0496	.0499	-.1130	2.522	.0497	.0192	1.151
#2	.0461	.0475	-.1061	2.545	.0470	.0202	1.144

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0619	1.577	.0036	.4342	.1916	.0071	.0172
SDev	.0041	.002	.0016	.1901	.0001	.0022	.0001
%RSD	6.593	.1378	46.00	43.79	.0643	31.29	.7622
#1	.0648	1.579	.0047	.2997	.1916	.0056	.0171
#2	.0590	1.576	.0024	.5686	.1915	.0087	.0173

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.1754	.0793
SDev	.0005	.0025
%RSD	.3053	3.185
#1	.1751	.0775
#2	.1758	.0810

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1533361	10000	--	--	--	--	--
SDev	10067.79	.0000000	--	--	--	--	--
%RSD	.6565829	.0000000	--	--	--	--	--
#1	1540480	10000	--	--	--	--	--
#2	1526242	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 588556TFD DF10 Operator:
Run Time: 02/05/16 19:27:53
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0019	26.21	.0329	.0002	20.05	.0012	.0075
SDev	.0007	.44	.0039	.0027	.31	.0001	.0096
%RSD	35.88	1.667	11.68	1102.	1.546	4.676	126.9
#1	.0015	26.52	.0302	-.0016	20.27	.0012	.0008
#2	.0024	25.90	.0356	.0021	19.83	.0013	.0143

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	60.15	.0022	.9946	.0389	.6435	17.68	5.351
SDev	.33	.0002	.0131	.0028	.0090	.02	.009
%RSD	.5450	7.497	1.314	7.120	1.398	.1347	.1613
#1	60.38	.0021	1.004	.0369	.6499	17.69	5.357
#2	59.92	.0023	.9853	.0409	.6372	17.66	5.345

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0338	.0252	9.851	.6859	.1194	2.883	3.324
SDev	.0054	.0001	.117	.0106	.0012	.857	.033
%RSD	15.86	.2622	1.188	1.538	1.021	29.74	.9854
#1	.0300	.0253	9.933	.6934	.1202	2.276	3.347
#2	.0376	.0252	9.768	.6785	.1185	3.489	3.301

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	1.331	2.316	2.333	.0120	3.154	-.0001	103.1
SDev	.023	.021	.036	.0035	.118	.0003	.1
%RSD	1.720	.8909	1.537	29.28	3.737	484.9	.1057
#1	1.347	2.331	2.358	.0095	3.237	.0002	103.2
#2	1.315	2.302	2.307	.0145	3.071	-.0003	103.0

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0495	.0493	-.1011	2.325	.0493	.0158	1.047
SDev	.0023	.0002	.0039	.031	.0009	.0039	.017
%RSD	4.703	.4488	3.867	1.322	1.871	24.63	1.647
#1	.0479	.0491	-.1039	2.347	.0487	.0131	1.059
#2	.0512	.0494	-.0984	2.303	.0500	.0186	1.034

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0626	1.653	.0045	.4295	.1996	.0058	.0180
SDev	.0099	.027	.0014	.2051	.0041	.0005	.0004
%RSD	15.80	1.618	30.14	47.77	2.051	8.571	2.498
#1	.0696	1.672	.0035	.2844	.2025	.0061	.0183
#2	.0556	1.634	.0054	.5745	.1967	.0054	.0177

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.1832	.0814
SDev	.0012	.0026
%RSD	.6645	3.139
#1	.1841	.0796
#2	.1824	.0832

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1539398	10000	--	--	--	--	--
SDev	1704.834	.0000000	--	--	--	--	--
%RSD	.1107469	.0000000	--	--	--	--	--
#1	1540603	10000	--	--	--	--	--
#2	1538192	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 588556TFL DF50 Operator:
Run Time: 02/05/16 19:33:00
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0008	5.096	.0070	-.0156	4.839	.0002	.0058
SDev	.0007	.009	.0005	.0007	.009	.0000	.0014
%RSD	95.13	.1830	7.435	4.261	.1950	10.97	24.76
#1	.0003	5.089	.0074	-.0161	4.833	.0002	.0048
#2	.0013	5.102	.0067	-.0151	4.846	.0003	.0069

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	12.76	.0005	.1885	.0076	.1191	3.537	.8335
SDev	.07	.0003	.0004	.0015	.0008	.008	.0238
%RSD	.5706	51.80	.2016	19.65	.6448	.2211	2.851
#1	12.81	.0003	.1882	.0065	.1186	3.532	.8167
#2	12.71	.0007	.1887	.0086	.1197	3.543	.8503

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0068	.0046	2.061	.1421	.0224	.4647	.5453
SDev	.0030	.0000	.003	.0003	.0011	.2662	.0064
%RSD	43.59	.6034	.1690	.1781	4.783	57.28	1.177
#1	.0047	.0046	2.058	.1419	.0217	.2765	.5407
#2	.0089	.0047	2.063	.1423	.0232	.6530	.5498

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.2459	.5160	.5125	.0042	.6339	.0056	103.9
SDev	.0008	.0046	.0003	.0076	.0081	.0017	.3
%RSD	.3365	.8891	.0518	180.2	1.278	31.24	.2680
#1	.2465	.5127	.5123	-.0012	.6282	.0043	103.7
#2	.2453	.5192	.5127	.0096	.6396	.0068	104.1

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0113	.0111	-.1844	.5132	.0112	.0052	.2311
SDev	.0021	.0033	.0026	.0017	.0029	.0021	.0008
%RSD	18.76	29.64	1.412	.3324	25.95	41.09	.3493
#1	.0098	.0088	-.1863	.5120	.0091	.0037	.2306
#2	.0128	.0134	-.1826	.5144	.0132	.0067	.2317

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0118	.3126	.0062	.0750	.0381	.0001	.0033
SDev	.0034	.0009	.0014	.0990	.0003	.0019	.0001
%RSD	28.84	.2893	23.10	132.1	.8378	3081.	2.299
#1	.0142	.3119	.0052	.0049	.0384	.0014	.0032
#2	.0094	.3132	.0072	.1450	.0379	-.0013	.0033

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0356	.0158
SDev	.0002	.0023
%RSD	.4444	14.66
#1	.0355	.0141
#2	.0358	.0174

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1551071	10000	--	--	--	--	--
SDev	4122.433	.0000000	--	--	--	--	--
%RSD	.2657797	.0000000	--	--	--	--	--
#1	1548156	10000	--	--	--	--	--
#2	1553986	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 588556TFMS3 DF10 Operator:
Run Time: 02/05/16 19:38:06
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0041	26.50	.1321	-.0017	22.52	.0035	.0084
SDev	.0002	.40	.0029	.0026	.26	.0000	.0015
%RSD	3.929	1.508	2.217	148.1	1.172	.0055	17.82
#1	.0042	26.79	.1342	-.0036	22.70	.0035	.0073
#2	.0040	26.22	.1301	.0001	22.33	.0035	.0094

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	54.21	.0045	1.004	.0474	.6444	17.63	6.208
SDev	.69	.0000	.015	.0018	.0101	.15	.032
%RSD	1.280	.2485	1.447	3.768	1.575	.8404	.5212
#1	54.70	.0045	1.014	.0461	.6516	17.73	6.231
#2	53.72	.0045	.9932	.0487	.6372	17.52	6.185

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0338	.0260	10.52	.7150	.1215	3.875	4.281
SDev	.0040	.0003	.16	.0106	.0008	.561	.053
%RSD	11.75	1.143	1.542	1.480	.6179	14.48	1.249
#1	.0310	.0262	10.64	.7225	.1221	3.478	4.319
#2	.0366	.0258	10.41	.7075	.1210	4.272	4.243

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	1.317	2.228	2.251	.0082	3.031	.0304	102.1
SDev	.020	.010	.045	.0062	.044	.0005	.5
%RSD	1.534	.4516	1.985	75.53	1.457	1.673	.4665
#1	1.331	2.235	2.282	.0038	3.063	.0308	101.8
#2	1.302	2.221	2.219	.0126	3.000	.0300	102.5

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1391	.1481	-.0966	2.241	.1450	.0148	.9330
SDev	.0023	.0055	.0032	.033	.0044	.0013	.0156
%RSD	1.658	3.683	3.358	1.477	3.036	8.964	1.672
#1	.1407	.1520	-.0943	2.264	.1481	.0158	.9440
#2	.1374	.1443	-.0989	2.218	.1419	.0139	.9220

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0624	1.655	.1033	.4435	.2220	.0052	.0180
SDev	.0053	.023	.0006	.1090	.0037	.0020	.0004
%RSD	8.480	1.387	.5674	24.58	1.677	37.74	2.244
#1	.0661	1.671	.1029	.3664	.2247	.0038	.0183
#2	.0587	1.639	.1037	.5206	.2194	.0066	.0177

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.2048	.0820
SDev	.0026	.0017
%RSD	1.275	2.090
#1	.2066	.0808
#2	.2029	.0832

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1524555	10000	--	--	--	--	--
SDev	7164.406	.0000000	--	--	--	--	--
%RSD	.4699342	.0000000	--	--	--	--	--
#1	1519489	10000	--	--	--	--	--
#2	1529621	10000	--	--	--	--	--

Method: DAILY2 Sample Name: CCV Operator:
Run Time: 02/05/16 19:43:12
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.049	10.26	5.225	5.081	10.26	1.010	4.932
SDev	.000	.01	.004	.043	.02	.001	.017
%RSD	.0286	.0505	.0706	.8391	.1642	.0842	.3383
#1	1.049	10.26	5.222	5.051	10.27	1.011	4.921
#2	1.049	10.27	5.227	5.111	10.25	1.010	4.944
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.100	11.00	5.500	5.500	11.00	1.100	5.500
Low	.9000	9.000	4.500	4.500	9.000	.9000	4.500

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	21.02	1.030	5.061	1.993	2.032	10.20	19.76
SDev	.07	.000	.001	.003	.001	.07	.10
%RSD	.3116	.0214	.0126	.1515	.0441	.7045	.5260
#1	20.97	1.030	5.062	1.991	2.033	10.15	19.68
#2	21.06	1.030	5.061	1.996	2.031	10.25	19.83
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.00	1.100	5.500	2.200	2.200	11.00	22.00
Low	18.00	.9000	4.500	1.800	1.800	9.000	18.00

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.054	5.336	20.65	1.014	4.872	30.04	29.91
SDev	.010	.003	.01	.000	.014	.70	.04
%RSD	.1906	.0645	.0675	.0132	.2874	2.321	.1175
#1	5.061	5.334	20.64	1.014	4.862	29.55	29.89
#2	5.047	5.339	20.66	1.015	4.882	30.54	29.94
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.500	5.500	22.00	1.100	5.500	33.00	33.00
Low	4.500	4.500	18.00	.9000	4.500	27.00	27.00

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	4.996	5.028	5.028	.9804	L.8921	1.014	101.0
SDev	.008	.031	.013	.0109	.0051	.007	.2
%RSD	.1631	.6103	.2637	1.109	.5727	.6599	.2192
#1	4.990	5.006	5.019	.9727	L.8957	1.009	101.2
#2	5.002	5.050	5.038	.9881	L.8884	1.018	100.9
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Low	LC Pass	NOCHECK
High	5.500			1.100	1.100	1.100	
Low	4.500			.9000	.9000	.9000	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.226	5.306	4.736	5.023	5.274	4.953	4.992
SDev	.025	.017	.007	.019	.020	.005	.007
%RSD	.4778	.3241	.1401	.3792	.3748	.0946	.1307
#1	5.209	5.294	4.732	5.010	5.260	4.950	4.997
#2	5.244	5.318	4.741	5.037	5.288	4.957	4.988
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			5.500	5.500	5.500	5.500	5.500
Low			4.500	4.500	4.500	4.500	4.500

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.014	4.809	5.166	4.903	5.110	H1.143	5.099
SDev	.006	.001	.022	.129	.002	.007	.009
%RSD	.5581	.0280	.4194	2.627	.0331	.6382	.1715
#1	1.018	4.810	5.151	4.812	5.109	H1.138	5.105
#2	1.010	4.808	5.181	4.994	5.111	H1.148	5.093
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	1.100	5.500	5.500	5.500	5.500	1.100	5.500
Low	.9000	4.500	4.500	4.500	4.500	.9000	4.500

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	1.034	4.931
SDev	.003	.027
%RSD	.2773	.5448
#1	1.032	4.912
#2	1.036	4.950
Errors	LC Pass	LC Pass
High	1.100	5.500
Low	.9000	4.500

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1508223	10000	--	--	--	--	--
SDev	3415.326	.0000000	--	--	--	--	--
%RSD	.2264470	.0000000	--	--	--	--	--
#1	1510638	10000	--	--	--	--	--
#2	1505808	10000	--	--	--	--	--

Method: DAILY2 Sample Name: CCB Operator:
Run Time: 02/05/16 19:48:18
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0014	.0010	.0027	.0354	.0008	.0000	.0028
SDev	.0015	.0166	.0018	.0065	.0000	.0001	.0166
%RSD	105.3	1639.	66.66	18.24	3.759	468.7	604.3
#1	.0004	-.0107	.0040	.0400	.0008	-.0000	-.0090
#2	.0025	.0127	.0014	.0309	.0009	.0001	H.0145
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0050	.0500	.0050	.0500	.0050	.0050	.0100
Low	-.0050	-.0500	-.0050	-.0500	-.0050	-.0050	-.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0040	.0004	.0009	.0002	.0002	.0055	.0016
SDev	.0007	.0002	.0014	.0023	.0012	.0339	.0527
%RSD	17.08	55.10	154.0	984.1	541.0	611.4	3213.
#1	.0035	.0002	-.0001	-.0014	-.0006	-.0184	-.0356
#2	.0045	.0006	.0018	.0018	.0011	.0295	.0389
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0500	.0050	.0050	.0050	.0050	.0500	.1000
Low	-.0500	-.0050	-.0050	-.0050	-.0050	-.0500	-.1000

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0002	.0002	.0048	.0001	.0011	-.0193	.0095
SDev	.0043	.0002	.0114	.0002	.0003	.7403	.0121
%RSD	2320.	73.88	237.8	206.0	21.74	3830.	127.0
#1	-.0032	.0001	-.0033	-.0000	.0010	L-.5428	.0010
#2	.0029	.0003	.0128	.0002	.0013	H.5041	.0180
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0050	.0050	.0500	.0050	.0050	.0500	.0500
Low	-.0050	-.0050	-.0500	-.0050	-.0050	-.0500	-.0500

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0002	.0041	-.0021	.0024	H.0349	.0040	102.6
SDev	.0007	.0086	.0051	.0048	.0110	.0015	.4
%RSD	309.5	209.7	242.9	205.4	31.41	38.05	.4213
#1	.0007	-.0020	.0015	-.0011	H.0272	.0029	102.9
#2	-.0003	.0101	-.0057	H.0058	H.0427	.0050	102.3
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC High	LC Pass	NOCHECK
High	.0050			.0050	.0200	.0100	
Low	-.0050			-.0050	-.0200	-.0100	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

010582

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0014	-.0026	.0014	-.0000	-.0013	.0035	.0002
SDev	.0084	.0095	.0051	.0006	.0035	.0018	.0001
%RSD	606.8	358.7	374.4	1757.	272.0	50.45	49.96
#1	-.0045	.0041	-.0022	.0004	.0012	.0023	.0001
#2	.0073	-.0093	.0050	-.0004	-.0038	.0048	.0003
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			.0100	.0050	.0050	.0100	.0050
Low			-.0100	-.0050	-.0050	-.0100	-.0050

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0016	.0002	.0010	.0077	.0007	H.0102	.0001
SDev	.0016	.0003	.0032	.1651	.0007	.0037	.0002
%RSD	95.31	175.9	325.9	2143.	101.8	36.05	177.2
#1	.0028	-.0000	-.0013	L-.1090	.0002	.0076	-.0000
#2	.0005	.0004	.0032	H.1244	.0012	H.0128	.0002
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	.0100	.0050	.0100	.1000	.0050	.0100	.0050
Low	-.0100	-.0050	-.0100	-.1000	-.0050	-.0100	-.0050

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0002	.0004
SDev	.0005	.0015
%RSD	297.8	381.0
#1	-.0002	-.0007
#2	.0005	.0015
Errors	LC Pass	LC Pass
High	.0050	.0050
Low	-.0050	-.0050

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1531306	10000	--	--	--	--	--
SDev	6511.747	.0000000	--	--	--	--	--
%RSD	.4252412	.0000000	--	--	--	--	--
#1	1535911	10000	--	--	--	--	--
#2	1526702	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 588556TFMS4 DF10 Operator:
Run Time: 02/05/16 19:53:24
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0143	27.18	.0485	.0136	19.95	.0131	.0186
SDev	.0015	.03	.0032	.0008	.04	.0001	.0107
%RSD	10.85	.0993	6.581	5.755	.2160	.4024	57.64
#1	.0132	27.16	.0463	.0142	19.92	.0130	.0110
#2	.0154	27.20	.0508	.0131	19.98	.0131	.0262

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	62.51	.0147	1.015	.0515	.6668	18.23	5.657
SDev	.02	.0003	.001	.0022	.0001	.06	.048
%RSD	.0274	2.152	.0761	4.334	.0151	.3266	.8416
#1	62.53	.0145	1.016	.0499	.6668	18.18	5.624
#2	62.50	.0149	1.015	.0530	.6669	18.27	5.691

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0434	.0407	10.24	.7157	.1347	3.194	3.408
SDev	.0046	.0001	.02	.0002	.0031	.459	.011
%RSD	10.49	.2464	.2422	.0240	2.302	14.36	.3172
#1	.0402	.0406	10.23	.7155	.1369	2.870	3.400
#2	.0466	.0408	10.26	.7158	.1325	3.518	3.415

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	1.337	2.278	2.274	.0216	3.039	.0200	102.9
SDev	.001	.013	.018	.0065	.036	.0069	.1
%RSD	.1078	.5721	.7938	30.22	1.183	34.66	.1256
#1	1.336	2.269	2.261	.0170	3.013	.0151	102.9
#2	1.338	2.287	2.287	.0262	3.064	.0249	102.8

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0558	.0563	-.0931	2.273	.0561	.0247	1.099
SDev	.0039	.0009	.0046	.016	.0019	.0009	.000
%RSD	7.028	1.614	4.889	.7199	3.408	3.504	.0179
#1	.0530	.0557	-.0963	2.261	.0547	.0241	1.099
#2	.0586	.0569	-.0899	2.285	.0574	.0253	1.098

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0774	1.700	.0204	.4413	.2196	.0219	.0310
SDev	.0065	.000	.0029	.1170	.0000	.0066	.0001
%RSD	8.422	.0097	14.50	26.51	.0070	30.22	.2984
#1	.0820	1.700	.0183	.3586	.2196	.0172	.0311
#2	.0728	1.700	.0224	.5241	.2196	.0266	.0310

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.1979	.0970
SDev	.0004	.0019
%RSD	.1845	1.965
#1	.1982	.0957
#2	.1977	.0983

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1535329	10000	--	--	--	--	--
SDev	1978.485	.0000000	--	--	--	--	--
%RSD	.1288639	.0000000	--	--	--	--	--
#1	1536728	10000	--	--	--	--	--
#2	1533930	10000	--	--	--	--	--

Analysis Report 02/05/16 08:03:22 PM page 1

Method: DAILY2 Sample Name: 588556TFAS DF10 Operator:
Run Time: 02/05/16 19:58:30
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0504	26.86	2.023	.0053	24.77	.0490	.0095
SDev	.0000	.01	.005	.0001	.03	.0001	.0058
%RSD	.0201	.0353	.2239	2.010	.1288	.1712	61.49
#1	.0504	26.86	2.019	.0054	24.80	.0489	.0136
#2	.0504	26.85	2.026	.0052	24.75	.0491	.0054

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	81.91	.0502	1.402	.2270	.8436	18.36	24.19
SDev	.30	.0003	.002	.0027	.0008	.01	.04
%RSD	.3714	.5397	.1509	1.169	.0896	.0392	.1678
#1	82.13	.0504	1.403	.2251	.8441	18.35	24.17
#2	81.70	.0500	1.400	.2289	.8430	18.36	24.22

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0358	.0254	29.92	1.170	.1147	22.05	23.07
SDev	.0042	.0001	.08	.001	.0017	.60	.03
%RSD	11.79	.4569	.2831	.0815	1.513	2.724	.1468
#1	.0328	.0253	29.98	1.171	.1159	21.63	23.10
#2	.0388	.0254	29.86	1.170	.1135	22.48	23.05

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	1.677	2.981	2.967	.0087	2.931	.5091	101.0
SDev	.002	.017	.001	.0016	.021	.0027	.4
%RSD	.1110	.5628	.0261	18.78	.7226	.5224	.4422
#1	1.678	2.993	2.967	.0098	2.946	.5072	100.7
#2	1.676	2.969	2.966	.0075	2.916	.5110	101.4

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.041	2.059	-.1070	2.969	2.051	.0201	1.131
SDev	.011	.002	.0003	.006	.005	.0005	.000
%RSD	.5243	.1110	.2974	.2056	.2479	2.492	.0321
#1	2.048	2.061	-.1068	2.973	2.055	.0205	1.130
#2	2.033	2.058	-.1072	2.964	2.047	.0198	1.131

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0463	1.565	1.991	.4453	.6837	.0123	.0172
SDev	.0047	.001	.002	.1619	.0019	.0027	.0001
%RSD	10.23	.0741	.0878	36.36	.2822	21.76	.3801
#1	.0496	1.566	1.992	.3308	.6851	.0104	.0172
#2	.0429	1.564	1.990	.5598	.6824	.0142	.0173

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.6629	.0728
SDev	.0010	.0024
%RSD	.1583	3.247
#1	.6636	.0712
#2	.6621	.0745

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1508299	10000	--	--	--	--	--
SDev	6709.029	.0000000	--	--	--	--	--
%RSD	.4448076	.0000000	--	--	--	--	--
#1	1503555	10000	--	--	--	--	--
#2	1513043	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 590212TF DF10 Operator:
Run Time: 02/05/16 20:03:36
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0018	14.95	.0160	.0046	14.24	.0005	.0056
SDev	.0001	.00	.0005	.0013	.04	.0000	.0031
%RSD	6.271	.0214	3.249	27.64	.2518	6.500	55.84
#1	.0017	14.95	.0156	.0037	14.22	.0005	.0034
#2	.0019	14.95	.0164	.0055	14.27	.0005	.0078

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	14.52	.0012	.4392	.0157	.6511	9.895	2.998
SDev	.05	.0000	.0009	.0010	.0011	.018	.014
%RSD	.3664	2.090	.2026	6.595	.1674	.1776	.4659
#1	14.56	.0012	.4386	.0149	.6504	9.882	2.988
#2	14.48	.0012	.4399	.0164	.6519	9.907	3.007

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0137	.0090	3.991	.1836	.1347	2.605	2.617
SDev	.0026	.0000	.006	.0003	.0009	.475	.009
%RSD	18.55	.0071	.1530	.1519	.6350	18.24	.3304
#1	.0119	.0090	3.995	.1838	.1341	2.269	2.623
#2	.0155	.0090	3.986	.1834	.1353	2.941	2.611

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.6210	1.181	1.175	.0046	2.292	.0272	103.5
SDev	.0013	.007	.004	.0001	.052	.0032	.5
%RSD	.2037	.6328	.3328	3.003	2.260	11.86	.4509
#1	.6201	1.186	1.178	.0047	2.255	.0249	103.2
#2	.6219	1.176	1.172	.0045	2.329	.0294	103.9

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0524	.0502	-.0850	1.176	.0509	.0320	.3288
SDev	.0080	.0010	.0004	.005	.0020	.0028	.0005
%RSD	15.26	2.092	.4534	.4330	3.854	8.883	.1455
#1	.0467	.0510	-.0847	1.180	.0495	.0299	.3285
#2	.0580	.0495	-.0853	1.172	.0523	.0340	.3291

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0667	1.055	.0065	.5984	.0738	.0037	.0087
SDev	.0022	.002	.0010	.0828	.0001	.0001	.0002
%RSD	3.249	.1735	16.06	13.83	.1060	1.841	1.916
#1	.0682	1.054	.0057	.5398	.0738	.0036	.0088
#2	.0651	1.057	.0072	.6569	.0739	.0037	.0085

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0808	.0857
SDev	.0001	.0015
%RSD	.0933	1.705
#1	.0808	.0847
#2	.0809	.0867

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1545586	10000	--	--	--	--	--
SDev	6941.667	.0000000	--	--	--	--	--
%RSD	.4491287	.0000000	--	--	--	--	--
#1	1540677	10000	--	--	--	--	--
#2	1550494	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 590213TF DF10 Operator:
Run Time: 02/05/16 20:08:43
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0014	32.76	.0108	.0087	10.94	.0010	.0093
SDev	.0013	.03	.0032	.0009	.01	.0001	.0056
%RSD	96.59	.0816	29.34	10.00	.0785	4.638	60.84
#1	.0004	32.78	.0086	.0080	10.93	.0009	.0053
#2	.0023	32.74	.0131	.0093	10.94	.0010	.0133

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	81.81	.0012	.1848	.0366	1.472	13.69	8.356
SDev	.31	.0003	.0014	.0024	.000	.02	.069
%RSD	.3788	20.68	.7858	6.566	.0211	.1185	.8251
#1	82.02	.0010	.1837	.0349	1.472	13.70	8.308
#2	81.59	.0014	.1858	.0383	1.472	13.68	8.405

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0308	.0187	13.31	.4744	.0432	5.750	6.140
SDev	.0046	.0002	.01	.0003	.0008	.599	.028
%RSD	14.81	.9538	.0788	.0547	1.880	10.42	.4526
#1	.0276	.0186	13.32	.4746	.0426	5.326	6.120
#2	.0340	.0188	13.30	.4742	.0438	6.173	6.159

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.2629	2.105	2.093	.0076	2.992	.0230	103.1
SDev	.0005	.013	.009	.0074	.038	.0001	.0
%RSD	.1898	.5943	.4392	97.57	1.262	.4053	.0066
#1	.2625	2.114	2.087	.0023	3.019	.0229	103.1
#2	.2632	2.096	2.100	.0128	2.965	.0231	103.1

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0254	.0234	-.0186	2.095	.0240	.0354	.9674
SDev	.0080	.0005	.0027	.002	.0023	.0014	.0002
%RSD	31.38	2.166	14.38	.0935	9.634	4.057	.0244
#1	.0197	.0237	-.0205	2.094	.0224	.0344	.9672
#2	.0310	.0230	-.0167	2.097	.0257	.0364	.9676

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0276	1.859	.0031	.3078	.0627	.0057	.0137
SDev	.0042	.001	.0019	.1314	.0011	.0011	.0001
%RSD	15.07	.0388	60.78	42.70	1.682	19.43	.8402
#1	.0305	1.859	.0018	.2148	.0620	.0049	.0136
#2	.0246	1.858	.0045	.4007	.0635	.0064	.0138

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.1618	.0842
SDev	.0004	.0022
%RSD	.2446	2.584
#1	.1615	.0827
#2	.1621	.0858

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1539354	10000	--	--	--	--	--
SDev	160.5132	.0000000	--	--	--	--	--
%RSD	.0104273	.0000000	--	--	--	--	--
#1	1539241	10000	--	--	--	--	--
#2	1539468	10000	--	--	--	--	--

Analysis Report 02/05/16 08:18:41 PM page 1

Method: DAILY2 Sample Name: 590214TF DF10 Operator:
Run Time: 02/05/16 20:13:49
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0044	47.78	.0784	.0147	4.867	.0023	.0092
SDev	.0003	.17	.0038	.0002	.001	.0001	.0089
%RSD	6.732	.3539	4.866	1.179	.0303	2.293	97.71
#1	.0042	47.90	.0757	.0148	4.866	.0023	.0028
#2	.0046	47.66	.0811	.0146	4.868	.0023	.0155

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	37.51	.0040	1.201	.0673	.7238	28.06	13.76
SDev	.30	.0000	.000	.0024	.0019	.16	.00
%RSD	.8059	.9965	.0076	3.607	.2684	.5824	.0231
#1	37.73	.0040	1.201	.0656	.7251	28.17	13.75
#2	37.30	.0041	1.201	.0690	.7224	27.94	13.76

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0353	.0285	10.01	1.224	.0751	8.090	8.680
SDev	.0048	.0001	.02	.002	.0004	.589	.031
%RSD	13.49	.2467	.1715	.1555	.5616	7.276	.3539
#1	.0319	.0285	10.02	1.225	.0748	7.674	8.702
#2	.0386	.0286	9.998	1.222	.0754	8.506	8.658

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	1.627	.3591	.3419	.0229	1.562	.0095	102.9
SDev	.004	.0013	.0040	.0075	.024	.0050	.6
%RSD	.2414	.3542	1.165	32.90	1.514	53.04	.6230
#1	1.630	.3582	.3447	.0176	1.579	.0059	102.4
#2	1.624	.3600	.3390	.0282	1.545	.0130	103.3

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1016	.0986	-.1080	.3473	.0995	.0003	.2014
SDev	.0056	.0001	.0032	.0022	.0019	.0011	.0001
%RSD	5.480	.1411	2.939	.6418	1.957	441.6	.0615
#1	.0977	.0985	-.1102	.3489	.0981	.0011	.2015
#2	.1056	.0987	-.1057	.3457	.1009	-.0006	.2013

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0336	3.366	.0079	2.398	.4387	.0062	.0362
SDev	.0091	.002	.0007	.187	.0001	.0021	.0002
%RSD	27.10	.0647	8.617	7.820	.0213	34.59	.4576
#1	.0400	3.368	.0074	2.265	.4387	.0047	.0364
#2	.0272	3.365	.0084	2.530	.4388	.0077	.0361

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.1224	.3112
SDev	.0003	.0007
%RSD	.2686	.2202
#1	.1226	.3107
#2	.1222	.3117

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1535620	10000	--	--	--	--	--
SDev	9611.702	.0000000	--	--	--	--	--
%RSD	.6259165	.0000000	--	--	--	--	--
#1	1528824	10000	--	--	--	--	--
#2	1542417	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 591000TF DF10 Operator:
Run Time: 02/05/16 20:18:56
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0019	43.54	.0094	.0185	2.996	.0015	.0099
SDev	.0008	.08	.0013	.0019	.005	.0000	.0020
%RSD	40.92	.1737	14.13	10.35	.1766	2.059	19.76
#1	.0024	43.60	.0084	.0199	2.992	.0015	.0113
#2	.0013	43.49	.0103	.0171	3.000	.0015	.0085

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	15.86	.0008	.1272	.0530	.1474	29.75	11.60
SDev	.04	.0001	.0003	.0011	.0001	.01	.01
%RSD	.2835	11.36	.2696	2.076	.0405	.0231	.1287
#1	15.89	.0009	.1274	.0522	.1474	29.75	11.58
#2	15.83	.0008	.1269	.0538	.1475	29.75	11.61

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0170	.0289	6.995	1.076	.0536	4.869	5.445
SDev	.0032	.0000	.019	.001	.0003	.433	.001
%RSD	18.89	.0162	.2685	.0969	.5238	8.901	.0145
#1	.0148	.0289	7.009	1.077	.0534	4.563	5.445
#2	.0193	.0289	6.982	1.075	.0538	5.176	5.444

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.1906	2.826	2.807	.0204	7.384	-.0030	103.8
SDev	.0023	.007	.004	.0017	.041	.0034	.2
%RSD	1.189	.2449	.1268	8.343	.5595	114.4	.2105
#1	.1922	2.831	2.805	.0191	7.413	-.0054	103.6
#2	.1890	2.821	2.810	.0216	7.355	-.0006	103.9

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0282	.0244	-.1352	2.811	.0256	.0081	.5347
SDev	.0060	.0065	.0002	.000	.0023	.0024	.0009
%RSD	21.19	26.63	.1441	.0023	9.116	29.42	.1720
#1	.0324	.0198	-.1354	2.811	.0240	.0098	.5341
#2	.0240	.0290	-.1351	2.811	.0273	.0064	.5354

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0271	2.796	.0046	.2065	.1218	.0055	.0113
SDev	.0075	.000	.0044	.0918	.0007	.0055	.0000
%RSD	27.77	.0077	94.35	44.47	.5478	99.02	.2799
#1	.0324	2.796	.0015	.1416	.1223	.0017	.0113
#2	.0218	2.795	.0077	.2714	.1214	.0094	.0113

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.1312	.1021
SDev	.0007	.0017
%RSD	.5129	1.692
#1	.1317	.1009
#2	.1307	.1033

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1548852	10000	--	--	--	--	--
SDev	3233.599	.0000000	--	--	--	--	--
%RSD	.2087739	.0000000	--	--	--	--	--
#1	1546566	10000	--	--	--	--	--
#2	1551139	10000	--	--	--	--	--

Method: DAILY2 Sample Name: CRI Operator:
Run Time: 02/05/16 20:24:03
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0109	.1210	.0072	H.0970	.0057	.0050	.0221
SDev	.0003	.0005	.0009	.0040	.0002	.0001	.0039
%RSD	2.470	.4287	12.50	4.141	3.421	.9658	17.67
#1	.0107	.1206	.0078	H.0942	.0056	.0049	.0194
#2	.0111	.1213	.0065	H.0999	.0058	.0050	.0249
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass
High	.0150	.1500	.0150	.0600	.0075	.0075	.0300
Low	.0050	.0500	.0050	.0200	.0025	.0025	.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1073	.0053	.0050	.0047	.0049	.1108	.3057
SDev	.0007	.0002	.0001	.0022	.0008	.0262	.0238
%RSD	.6468	4.101	2.344	46.31	16.33	23.63	7.789
#1	.1078	.0054	.0049	.0032	.0044	.0923	.2888
#2	.1069	.0051	.0050	.0063	.0055	.1293	.3225
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.1500	.0075	.0075	.0075	.0075	.1500	.7500
Low	.0500	.0025	.0025	.0025	.0025	.0500	.2500

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0095	.0084	.0521	.0051	.0054	.1647	.2403
SDev	.0038	.0001	.0021	.0001	.0006	.3753	.0104
%RSD	39.74	1.402	3.933	1.366	11.86	227.8	4.309
#1	.0068	.0084	.0535	.0051	.0050	L-.1006	.2330
#2	.0122	.0085	.0506	.0052	.0059	.4301	.2476
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0150	.0150	.1000	.0075	.0075	.5000	.5000
Low	.0050	.0050	.0250	.0025	.0025	.1250	.1250

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0047	.0071	.0039	.0173	H.0798	.0208	103.6
SDev	.0000	.0053	.0029	.0019	.0014	.0026	.4
%RSD	.2628	75.69	72.74	11.01	1.773	12.36	.4161
#1	.0048	.0033	.0059	.0186	H.0788	.0189	103.3
#2	.0047	.0108	.0019	.0159	H.0808	.0226	103.9
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC High	LC Pass	NOCHECK
High	.0075			.0300	.0750	.0300	
Low	.0025			.0100	.0250	.0100	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0101	.0049	H.6313	.0050	.0066	.0125	.0052
SDev	.0066	.0014	.0036	.0001	.0012	.0006	.0000
%RSD	65.12	29.48	.5648	2.408	18.63	5.145	.2536
#1	.0055	.0059	H.6288	.0051	.0058	.0121	.0052
#2	.0148	.0039	H.6338	.0049	.0075	.0130	.0052
Errors	NOCHECK	NOCHECK	LC High	LC Pass	LC Pass	LC Pass	LC Pass
High			.1500	.0075	.0150	.0150	.0075
Low			.0500	.0025	.0050	.0050	.0025

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0226	.0048	.0183	.1797	.0049	.0268	.0052
SDev	.0006	.0001	.0013	.0984	.0010	.0031	.0004
%RSD	2.593	1.576	6.948	54.76	21.32	11.59	7.032
#1	.0222	.0047	.0192	.1101	.0042	.0246	.0050
#2	.0230	.0048	.0174	.2493	.0056	.0290	.0055
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0300	.0075	.0300	.3000	.0075	.0300	.0075
Low	.0100	.0025	.0100	.1000	.0025	.0100	.0025

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0055	.0053
SDev	.0002	.0009
%RSD	3.864	16.29
#1	.0056	.0047
#2	.0053	.0059
Errors	LC Pass	LC Pass
High	.0075	.0075
Low	.0025	.0025

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1546658	10000	--	--	--	--	--
SDev	6413.458	.0000000	--	--	--	--	--
%RSD	.4146656	.0000000	--	--	--	--	--
#1	1542123	10000	--	--	--	--	--
#2	1551193	10000	--	--	--	--	--

Method: DAILY2 Sample Name: CRI-N Operator:
Run Time: 02/05/16 20:29:09
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0212	.2256	.0182	H.1629	.0107	.0099	.0489
SDev	.0003	.0046	.0019	.0038	.0002	.0000	.0005
%RSD	1.198	2.043	10.38	2.306	2.153	.2658	1.027
#1	.0210	.2224	.0195	H.1603	.0108	.0099	.0493
#2	.0214	.2289	.0168	H.1656	.0105	.0099	.0486
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass
High	.0260	.2600	.0260	.1040	.0130	.0130	.0520
Low	.0140	.1400	.0140	.0560	.0070	.0070	.0280

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2111	.0105	.0102	.0106	.0096	.2253	L.6269
SDev	.0013	.0002	.0004	.0011	.0011	.0299	.0356
%RSD	.6000	1.528	4.350	10.73	11.12	13.26	5.682
#1	.2102	.0104	.0099	.0098	.0103	.2041	L.6017
#2	.2120	.0106	.0106	.0114	.0088	.2464	L.6521
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low
High	.2600	.0130	.0130	.0130	.0130	.2600	1.300
Low	.1400	.0070	.0070	.0070	.0070	.1400	.7000

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0202	.0177	.1031	.0103	.0094	.5366	.4634
SDev	.0030	.0001	.0007	.0001	.0008	.4608	.0104
%RSD	14.98	.6093	.6613	.9297	8.947	85.88	2.236
#1	.0181	.0177	.1036	.0104	.0100	L.2107	.4560
#2	.0224	.0178	.1026	.0102	.0088	H.8624	.4707
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0260	.0260	.1300	.0130	.0130	.6500	.6500
Low	.0140	.0140	.0700	.0070	.0070	.3500	.3500

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0096	.0134	.0107	.0397	.1212	.0451	103.6
SDev	.0000	.0017	.0012	.0033	.0005	.0027	.4
%RSD	.3243	12.59	11.30	8.385	.3964	6.050	.4319
#1	.0095	.0122	.0115	.0373	.1208	.0470	103.3
#2	.0096	.0146	.0098	.0420	.1215	.0432	103.9
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	.0130			.0520	.1300	.0520	
Low	.0070			.0280	.0700	.0280	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0212	.0168	H.9126	.0116	.0182	.0235	.0104
SDev	.0055	.0017	.0034	.0002	.0007	.0002	.0000
%RSD	25.87	9.921	.3728	2.018	3.929	.6683	.0145
#1	.0251	.0156	H.9102	.0118	.0187	.0237	.0104
#2	.0173	.0179	H.9150	.0114	.0177	.0234	.0104
Errors	NOCHECK	NOCHECK	LC High	LC Pass	LC Pass	LC Pass	LC Pass
High			.2600	.0130	.0260	.0260	.0130
Low			.1400	.0070	.0140	.0140	.0070

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0409	.0095	.0410	.4118	.0101	.0434	.0103
SDev	.0050	.0003	.0009	.1161	.0006	.0009	.0002
%RSD	12.15	3.442	2.254	28.18	6.075	2.007	1.642
#1	.0444	.0097	.0416	.3297	.0106	.0428	.0105
#2	.0374	.0092	.0403	.4938	.0097	.0440	.0102
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0520	.0130	.0520	.5200	.0130	.0520	.0130
Low	.0280	.0070	.0280	.2800	.0070	.0280	.0070

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0103	.0110
SDev	.0001	.0017
%RSD	.5230	15.41
#1	.0102	.0098
#2	.0103	.0122
Errors	LC Pass	LC Pass
High	.0130	.0130
Low	.0070	.0070

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1546442	10000	--	--	--	--	--
SDev	6684.280	.0000000	--	--	--	--	--
%RSD	.4322362	.0000000	--	--	--	--	--
#1	1541715	10000	--	--	--	--	--
#2	1551168	10000	--	--	--	--	--

Method: DAILY2 Sample Name: ICSA Operator:
Run Time: 02/05/16 20:34:16
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0006	476.4	.0005	.1548	.0031	.0001	.0297
SDev	.0004	1.2	.0064	.0078	.0000	.0000	.0012
%RSD	65.61	.2474	1371.	5.037	1.281	30.58	4.167
#1	-.0003	477.2	.0050	.1603	.0031	.0001	.0289
#2	-.0009	475.5	-.0041	.1493	.0030	.0001	.0306
Errors	NOCHECK	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High		600.0					
Low		400.0					

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	461.8	.0001	-.0015	.0003	-.0024	197.9	.0159
SDev	1.3	.0001	.0001	.0019	.0001	1.5	.0320
%RSD	.2744	149.3	7.008	572.3	6.351	.7462	201.6
#1	460.9	-.0000	-.0014	-.0010	-.0025	196.9	-.0068
#2	462.7	.0002	-.0015	.0017	-.0022	199.0	.0385
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	NOCHECK
High	600.0					240.0	
Low	400.0					160.0	

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0008	.0017	532.4	.0224	-.0026	.3007	.1372
SDev	.0019	.0001	.6	.0001	.0015	.3981	.0119
%RSD	230.2	4.260	.1176	.6570	56.52	132.4	8.685
#1	-.0022	.0017	532.0	.0225	-.0016	.0192	.1288
#2	.0005	.0018	532.9	.0222	-.0036	.5821	.1456
Errors	NOCHECK	NOCHECK	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High			600.0				
Low			400.0				

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0021	.0999	-.0425	.1027	-.0312	-.0022	94.08
SDev	.0002	.0039	.0024	.0022	.0097	.0090	.20
%RSD	9.175	3.875	5.614	2.135	30.93	414.2	.2166
#1	-.0020	.0971	-.0408	.1042	-.0244	-.0085	93.94
#2	-.0022	.1026	-.0442	.1011	-.0381	.0042	94.22
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0035	.0005	.7571	.0049	.0015	.0000	.0039
SDev	.0064	.0042	.0019	.0003	.0006	.0011	.0000
%RSD	182.2	886.8	.2525	6.124	43.39	2735.	.3228
#1	-.0010	.0034	.7585	.0052	.0019	-.0007	.0039
#2	.0080	-.0025	.7558	.0047	.0010	.0008	.0039
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0100	.0026	.0185	.0931	-.0018	.0049	-.0001
SDev	.0062	.0000	.0034	.0904	.0003	.0020	.0001
%RSD	62.36	1.202	18.56	97.01	18.28	40.52	53.87
#1	.0144	.0026	.0160	.0292	-.0021	.0035	-.0002
#2	.0056	.0026	.0209	.1570	-.0016	.0063	-.0001
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	-.0041	.0004
SDev	.0003	.0010
%RSD	6.803	228.9
#1	-.0043	-.0003
#2	-.0039	.0011
Errors	NOCHECK	NOCHECK
High		
Low		

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1404554	10000	--	--	--	--	--
SDev	3039.852	.0000000	--	--	--	--	--
%RSD	.2164283	.0000000	--	--	--	--	--
#1	1402404	10000	--	--	--	--	--
#2	1406703	10000	--	--	--	--	--

Method: DAILY2 Sample Name: ICSAB Operator:
Run Time: 02/05/16 20:39:23
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.086	472.4	1.036	1.122	.5432	.4961	.0225
SDev	.000	1.1	.008	.009	.0001	.0003	.0048
%RSD	.0421	.2313	.7896	.8285	.0140	.0592	21.26
#1	1.086	473.1	1.042	1.129	.5433	.4963	.0191
#2	1.086	471.6	1.031	1.116	.5431	.4959	.0259
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK
High	1.200	600.0	1.200	1.200	.6000	.6000	
Low	.8000	400.0	.8000	.8000	.4000	.4000	

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	459.2	.9757	.4862	.4890	.5342	196.9	.0043
SDev	1.8	.0001	.0005	.0024	.0001	.7	.0566
%RSD	.3835	.0053	.0974	.4909	.0200	.3571	1316.
#1	458.0	.9758	.4865	.4873	.5341	196.4	-.0357
#2	460.5	.9757	.4859	.4907	.5343	197.4	.0443
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK
High	600.0	1.200	.6000	.6000	.6000	240.0	
Low	400.0	.8000	.4000	.4000	.4000	160.0	

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0016	1.188	529.4	.5202	1.018	.2193	.0954
SDev	.0042	.002	.2	.0011	.003	.6249	.0154
%RSD	268.5	.1290	.0317	.2165	.2459	285.0	16.09
#1	-.0045	1.187	529.6	.5210	1.020	-.2226	.0845
#2	.0014	1.190	529.3	.5194	1.016	.6612	.1062
Errors	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK	NOCHECK
High		1.200	600.0	.6000	1.200		
Low		.8000	400.0	.4000	.8000		

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.9698	1.070	.9256	.1038	.0164	1.072	94.35
SDev	.0006	.007	.0046	.0017	.0113	.002	.10
%RSD	.0633	.6606	.5002	1.602	68.67	.1459	.1010
#1	.9702	1.065	.9224	.1050	.0084	1.071	94.42
#2	.9694	1.075	.9289	.1026	.0244	1.073	94.29
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	NOCHECK
High	1.200					1.200	
Low	.8000					.8000	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.021	1.022	1.344	.9728	1.021	.9779	1.037
SDev	.005	.006	.001	.0054	.002	.0030	.002
%RSD	.4608	.5836	.1068	.5589	.2358	.3075	.1965
#1	1.024	1.018	1.345	.9689	1.019	.9758	1.039
#2	1.017	1.026	1.343	.9766	1.022	.9800	1.036
Errors	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass
High				1.200	1.200	1.200	1.200
Low				.8000	.8000	.8000	.8000

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0132	.9575	.9859	1.031	.5072	.0188	-.0002
SDev	.0028	.0000	.0075	.138	.0004	.0021	.0002
%RSD	21.33	.0006	.7575	13.42	.0723	11.21	76.51
#1	.0151	.9575	.9912	.9333	.5070	.0173	-.0003
#2	.0112	.9575	.9807	1.129	.5075	.0203	-.0001
Errors	NOCHECK	LC Pass	LC Pass	NOCHECK	LC Pass	NOCHECK	NOCHECK
High		1.200	1.200		.6000		
Low		.8000	.8000		.4000		

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.9614	.9411
SDev	.0000	.0049
%RSD	.0020	.5158
#1	.9614	.9377
#2	.9614	.9446
Errors	LC Pass	NOCHECK
High	1.200	
Low	.8000	

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1408528	10000	--	--	--	--	--
SDev	1322.997	.0000000	--	--	--	--	--
%RSD	.0939277	.0000000	--	--	--	--	--
#1	1409463	10000	--	--	--	--	--
#2	1407592	10000	--	--	--	--	--

Method: DAILY2 Sample Name: CCV Operator:
Run Time: 02/05/16 20:44:29
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.052	10.20	5.209	5.117	10.39	1.005	4.895
SDev	.001	.00	.015	.043	.01	.000	.002
%RSD	.0923	.0194	.2792	.8446	.0911	.0437	.0382
#1	1.052	10.21	5.198	5.087	10.39	1.005	4.894
#2	1.053	10.20	5.219	5.148	10.40	1.005	4.896
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.100	11.00	5.500	5.500	11.00	1.100	5.500
Low	.9000	9.000	4.500	4.500	9.000	.9000	4.500

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	21.05	1.026	5.069	2.001	2.039	10.29	19.59
SDev	.01	.001	.006	.002	.001	.04	.02
%RSD	.0684	.1172	.1190	.1220	.0711	.3918	.1258
#1	21.04	1.025	5.073	2.003	2.040	10.26	19.57
#2	21.06	1.027	5.064	1.999	2.038	10.32	19.61
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.00	1.100	5.500	2.200	2.200	11.00	22.00
Low	18.00	.9000	4.500	1.800	1.800	9.000	18.00

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.095	5.315	20.72	1.019	4.849	29.86	29.54
SDev	.003	.019	.03	.000	.007	.27	.07
%RSD	.0538	.3578	.1254	.0281	.1430	.9085	.2539
#1	5.097	5.328	20.73	1.019	4.844	29.67	29.59
#2	5.093	5.301	20.70	1.019	4.854	30.05	29.49
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.500	5.500	22.00	1.100	5.500	33.00	33.00
Low	4.500	4.500	18.00	.9000	4.500	27.00	27.00

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	5.014	4.998	5.010	.9825	L.8362	1.002	101.8
SDev	.009	.016	.002	.0064	.0236	.005	.1
%RSD	.1810	.3117	.0490	.6473	2.818	.4566	.1092
#1	5.020	5.009	5.012	.9780	L.8529	1.006	101.7
#2	5.008	4.987	5.008	.9870	L.8195	.9991	101.9
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Low	LC Pass	NOCHECK
High	5.500			1.100	1.100	1.100	
Low	4.500			.9000	.9000	.9000	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.182	5.267	4.746	5.001	5.233	4.930	5.023
SDev	.031	.008	.001	.007	.005	.001	.010
%RSD	.5929	.1488	.0297	.1364	.0958	.0102	.1928
#1	5.204	5.261	4.745	5.006	5.237	4.930	5.030
#2	5.160	5.272	4.747	4.996	5.230	4.929	5.016
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			5.500	5.500	5.500	5.500	5.500
Low			4.500	4.500	4.500	4.500	4.500

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.009	4.823	5.165	4.857	5.153	H1.131	5.143
SDev	.002	.002	.007	.067	.002	.010	.003
%RSD	.1578	.0435	.1406	1.382	.0310	.8655	.0608
#1	1.008	4.824	5.160	4.809	5.154	H1.124	5.145
#2	1.010	4.821	5.170	4.904	5.152	H1.138	5.141
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	1.100	5.500	5.500	5.500	5.500	1.100	5.500
Low	.9000	4.500	4.500	4.500	4.500	.9000	4.500

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	1.031	4.932
SDev	.001	.007
%RSD	.0696	.1512
#1	1.030	4.927
#2	1.031	4.937
Errors	LC Pass	LC Pass
High	1.100	5.500
Low	.9000	4.500

010610

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1519695	10000	--	--	--	--	--
SDev	1634.831	.0000000	--	--	--	--	--
%RSD	.1075762	.0000000	--	--	--	--	--
#1	1518539	10000	--	--	--	--	--
#2	1520851	10000	--	--	--	--	--

Method: DAILY2 Sample Name: CCB Operator:
Run Time: 02/05/16 20:49:35
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0004	.0012	-.0012	.0390	.0001	.0001	.0099
SDev	.0011	.0034	.0018	.0073	.0002	.0001	.0094
%RSD	292.2	294.3	147.5	18.82	157.8	125.4	95.05
#1	-.0004	-.0013	.0001	.0442	.0003	.0000	.0032
#2	.0012	.0036	-.0025	.0338	-.0000	.0001	H.0165
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0050	.0500	.0050	.0500	.0050	.0050	.0100
Low	-.0050	-.0500	-.0050	-.0500	-.0050	-.0050	-.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0115	.0002	.0001	.0003	-.0004	.0111	.0042
SDev	.0014	.0003	.0007	.0020	.0005	.0446	.0448
%RSD	11.79	136.0	1047.	674.8	138.1	401.8	1074.
#1	.0105	.0000	-.0004	-.0011	-.0000	-.0204	-.0275
#2	.0125	.0004	.0005	.0017	-.0008	.0426	.0358
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0500	.0050	.0050	.0050	.0050	.0500	.1000
Low	-.0500	-.0050	-.0050	-.0050	-.0050	-.0500	-.1000

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0001	.0002	.0085	-.0000	-.0004	L-.1105	.0125
SDev	.0044	.0002	.0059	.0002	.0002	.5309	.0127
%RSD	5012.	86.24	69.75	408.1	41.46	480.4	101.6
#1	-.0032	.0001	.0043	.0001	-.0003	L-.4859	.0035
#2	.0030	.0003	.0127	-.0001	-.0005	H.2649	.0216
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass
High	.0050	.0050	.0500	.0050	.0050	.0500	.0500
Low	-.0050	-.0050	-.0500	-.0050	-.0050	-.0500	-.0500

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0006	.0005	.0009	.0020	.0118	-.0013	103.8
SDev	.0010	.0050	.0050	.0046	.0075	.0060	.1
%RSD	169.7	956.1	546.3	229.7	63.42	456.8	.1097
#1	-.0014	-.0030	.0044	-.0013	.0171	-.0056	103.7
#2	.0001	.0041	-.0026	H.0053	.0065	.0029	103.8
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	.0050			.0050	.0200	.0100	
Low	-.0050			-.0050	-.0200	-.0100	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0011	-.0012	-.0034	.0008	-.0004	.0024	.0001
SDev	.0016	.0004	.0041	.0016	.0008	.0006	.0001
%RSD	155.1	30.89	120.8	207.9	180.9	26.08	35.44
#1	-.0001	-.0014	-.0063	.0020	-.0010	.0029	.0001
#2	.0022	-.0009	-.0005	-.0004	.0001	.0020	.0002
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			.0100	.0050	.0050	.0100	.0050
Low			-.0100	-.0050	-.0050	-.0100	-.0050

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0010	-.0002	-.0000	.0020	-.0001	.0025	-.0000
SDev	.0080	.0004	.0006	.1494	.0005	.0012	.0001
%RSD	830.5	204.2	5097.	7612.	361.0	48.28	2519.
#1	.0047	.0001	.0004	L-.1036	.0002	.0016	.0001
#2	-.0066	-.0005	-.0004	H.1076	-.0005	.0033	-.0001
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0100	.0050	.0100	.1000	.0050	.0100	.0050
Low	-.0100	-.0050	-.0100	-.1000	-.0050	-.0100	-.0050

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0002	.0007
SDev	.0001	.0024
%RSD	36.10	325.0
#1	.0002	-.0009
#2	.0003	.0024
Errors	LC Pass	LC Pass
High	.0050	.0050
Low	-.0050	-.0050

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1548796	10000	--	--	--	--	--
SDev	1621.396	.0000000	--	--	--	--	--
%RSD	.1046875	.0000000	--	--	--	--	--
#1	1547650	10000	--	--	--	--	--
#2	1549943	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 588049TF Operator:
Run Time: 02/05/16 20:54:41
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0079	204.8	.2660	.1190	112.1	.0086	.0183
SDev	.0010	.0	.0023	.0162	.2	.0000	.0034
%RSD	12.12	.0231	.8753	13.62	.2139	.1169	18.46
#1	.0072	204.8	.2676	.1305	112.3	.0086	.0159
#2	.0086	204.9	.2643	.1075	111.9	.0086	.0207

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	245.5	.0146	4.402	.2375	2.997	119.6	59.58
SDev	.2	.0001	.003	.0011	.002	.3	.26
%RSD	.0809	.7927	.0599	.4820	.0690	.2485	.4341
#1	245.7	.0145	4.404	.2366	2.998	119.8	59.40
#2	245.4	.0147	4.400	.2383	2.995	119.4	59.76

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1848	.1300	56.08	3.124	1.104	38.88	40.47
SDev	.0018	.0003	.04	.001	.003	.32	.09
%RSD	.9870	.2694	.0705	.0393	.2653	.8200	.2291
#1	.1835	.1298	56.05	3.123	1.101	38.65	40.41
#2	.1861	.1302	56.11	3.124	1.106	39.10	40.54

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	6.026	19.20	19.13	.0757	17.79	-.0014	103.5
SDev	.007	.07	.10	.0012	.02	.0042	.1
%RSD	.1154	.3556	.5314	1.605	.0943	312.0	.0729
#1	6.021	19.24	19.05	.0748	17.80	.0016	103.5
#2	6.031	19.15	19.20	.0765	17.78	-.0043	103.6

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.4777	.4926	.4223	19.13	.4872	.0176	5.077
SDev	.0080	.0047	.0073	.04	.0005	.0016	.010
%RSD	1.663	.9517	1.737	.2350	.0977	9.369	.1887
#1	.4834	.4893	.4171	19.10	.4868	.0164	5.083
#2	.4721	.4959	.4275	19.16	.4875	.0187	5.070

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.7355	15.04	.0312	5.142	1.565	.0369	.1351
SDev	.0001	.00	.0022	.115	.000	.0011	.0003
%RSD	.0174	.0195	7.040	2.237	.0237	2.888	.2311
#1	.7354	15.04	.0296	5.061	1.565	.0361	.1349
#2	.7356	15.03	.0327	5.223	1.564	.0376	.1354

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.7985	.8626
SDev	.0039	.0025
%RSD	.4868	.2888
#1	.7957	.8644
#2	.8012	.8609

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1545164	10000	--	--	--	--	--
SDev	1069.852	.0000000	--	--	--	--	--
%RSD	.0692388	.0000000	--	--	--	--	--
#1	1544407	10000	--	--	--	--	--
#2	1545920	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 588556TF Operator:
Run Time: 02/05/16 20:59:48
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0080	237.7	.3133	.1353	128.8	.0112	.0206
SDev	.0004	.2	.0041	.0181	.8	.0000	.0067
%RSD	4.556	.0663	1.304	13.35	.5904	.0145	32.49
#1	.0082	237.8	.3162	.1481	129.4	.0112	.0253
#2	.0077	237.6	.3104	.1225	128.3	.0112	.0159

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	531.0	.0176	8.707	.3629	6.114	165.0	64.19
SDev	3.7	.0000	.008	.0008	.007	1.2	.13
%RSD	.7036	.2315	.0939	.2195	.1200	.7349	.2010
#1	533.6	.0177	8.713	.3623	6.109	165.9	64.28
#2	528.3	.0176	8.702	.3634	6.119	164.2	64.10

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.3538	.2468	94.70	6.516	1.113	30.77	34.06
SDev	.0013	.0008	.18	.002	.004	.00	.15
%RSD	.3562	.3248	.1861	.0319	.3601	.0128	.4463
#1	.3529	.2474	94.82	6.517	1.110	30.77	34.17
#2	.3547	.2462	94.57	6.514	1.116	30.77	33.95

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	11.44	23.83	23.63	.0939	27.00	.0176	98.17
SDev	.04	.28	.02	.0005	.08	.0089	.84
%RSD	.3498	1.183	.0776	.4891	.3061	50.51	.8520
#1	11.47	24.03	23.64	.0935	26.94	.0113	97.58
#2	11.41	23.63	23.62	.0942	27.06	.0238	98.76

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.4379	.4512	.5418	23.67	.4463	.1604	10.96
SDev	.0023	.0024	.0090	.11	.0008	.0020	.01
%RSD	.5159	.5234	1.667	.4481	.1838	1.263	.0955
#1	.4395	.4495	.5354	23.75	.4457	.1590	10.97
#2	.4363	.4529	.5482	23.60	.4469	.1619	10.95

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.6577	17.03	.0424	4.075	1.876	.0521	.1711
SDev	.0036	.01	.0002	.025	.001	.0046	.0002
%RSD	.5392	.0307	.4245	.6216	.0370	8.842	.0912
#1	.6602	17.02	.0423	4.057	1.875	.0553	.1710
#2	.6551	17.03	.0425	4.093	1.876	.0488	.1713

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	1.592	.7827
SDev	.003	.0091
%RSD	.1982	1.166
#1	1.594	.7892
#2	1.590	.7763

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1465466	10000	--	--	--	--	--
SDev	12520.74	.0000000	--	--	--	--	--
%RSD	.8543865	.0000000	--	--	--	--	--
#1	1456612	10000	--	--	--	--	--
#2	1474319	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 588556TFD Operator:
Run Time: 02/05/16 21:04:54
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0076	251.8	.3432	.1514	123.3	.0118	.0229
SDev	.0013	.3	.0012	.0300	.6	.0000	.0011
%RSD	17.11	.1113	.3474	19.79	.5060	.0329	4.740
#1	.0067	251.6	.3441	.1725	123.7	.0118	.0221
#2	.0085	252.0	.3424	.1302	122.9	.0118	.0236

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	523.4	.0184	9.530	.3778	6.662	171.7	68.43
SDev	6.1	.0004	.017	.0014	.011	2.6	.08
%RSD	1.157	2.275	.1749	.3798	.1575	1.492	.1236
#1	527.7	.0181	9.542	.3768	6.670	173.5	68.37
#2	519.1	.0187	9.518	.3788	6.655	169.9	68.49

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.3516	.2567	94.41	6.554	1.181	33.19	36.52
SDev	.0006	.0001	.06	.007	.007	.68	.02
%RSD	.1769	.0500	.0602	.1032	.6218	2.057	.0681
#1	.3512	.2568	94.45	6.559	1.176	32.70	36.50
#2	.3521	.2566	94.37	6.549	1.187	33.67	36.54

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	12.74	22.23	22.04	.0965	28.25	.0192	97.11
SDev	.02	.28	.01	.0028	.04	.0009	.58
%RSD	.1442	1.243	.0434	2.875	.1537	4.904	.5974
#1	12.75	22.43	22.04	.0945	28.28	.0199	96.70
#2	12.73	22.04	22.05	.0984	28.22	.0185	97.52

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.4776	.4891	.6660	22.08	.4848	.1319	10.22
SDev	.0089	.0080	.0161	.09	.0024	.0077	.01
%RSD	1.872	1.640	2.413	.3880	.4880	5.813	.1083
#1	.4839	.4834	.6547	22.15	.4831	.1265	10.23
#2	.4713	.4948	.6774	22.02	.4865	.1374	10.21

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.6610	18.36	.0428	4.440	2.005	.0486	.1839
SDev	.0074	.00	.0015	.099	.001	.0016	.0004
%RSD	1.122	.0044	3.453	2.234	.0253	3.396	.2257
#1	.6663	18.36	.0418	4.370	2.005	.0475	.1842
#2	.6558	18.36	.0438	4.510	2.004	.0498	.1836

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	1.702	.8293
SDev	.004	.0156
%RSD	.2304	1.882
#1	1.699	.8403
#2	1.704	.8182

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1449630	10000	--	--	--	--	--
SDev	8691.050	.0000000	--	--	--	--	--
%RSD	.5995359	.0000000	--	--	--	--	--
#1	1443484	10000	--	--	--	--	--
#2	1455775	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 588556TFL DF5 Operator:
Run Time: 02/05/16 21:10:00
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0039	49.99	.0650	.0220	44.49	.0025	.0138
SDev	.0011	.08	.0009	.0027	.14	.0001	.0034
%RSD	29.12	.1628	1.349	12.37	.3254	3.168	24.61
#1	.0031	49.93	.0644	.0240	44.39	.0024	.0114
#2	.0047	50.05	.0656	.0201	44.59	.0025	.0162

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	124.6	.0037	1.849	.0778	1.219	35.18	11.36
SDev	.6	.0003	.001	.0023	.001	.12	.07
%RSD	.4534	8.767	.0540	2.981	.0987	.3278	.6313
#1	125.0	.0035	1.849	.0762	1.218	35.26	11.31
#2	124.2	.0039	1.850	.0795	1.220	35.10	11.41

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0745	.0518	20.13	1.383	.2278	6.209	6.660
SDev	.0043	.0002	.00	.001	.0002	.502	.024
%RSD	5.729	.4628	.0232	.1041	.0865	8.084	.3659
#1	.0715	.0517	20.13	1.382	.2279	5.855	6.643
#2	.0775	.0520	20.14	1.384	.2276	6.564	6.677

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	2.441	5.080	5.059	.0215	5.520	.0040	100.5
SDev	.001	.030	.000	.0073	.012	.0064	.4
%RSD	.0476	.5957	.0047	33.79	.2204	158.9	.4153
#1	2.440	5.102	5.059	.0163	5.511	-.0005	100.2
#2	2.442	5.059	5.058	.0266	5.528	.0085	100.8

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0868	.0902	-.0177	5.061	.0890	.0453	2.289
SDev	.0041	.0003	.0047	.010	.0011	.0006	.008
%RSD	4.742	.3800	26.76	.2022	1.284	1.291	.3634
#1	.0897	.0900	-.0210	5.068	.0898	.0449	2.283
#2	.0839	.0905	-.0143	5.054	.0882	.0458	2.295

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1292	3.195	.0075	.8931	.3891	.0129	.0353
SDev	.0088	.004	.0024	.1432	.0003	.0008	.0001
%RSD	6.799	.1394	31.82	16.03	.0848	6.441	.3892
#1	.1354	3.192	.0058	.7919	.3893	.0134	.0353
#2	.1230	3.198	.0092	.9944	.3888	.0123	.0352

010621

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.3454	.1606
SDev	.0005	.0015
%RSD	.1349	.9639
#1	.3457	.1595
#2	.3450	.1617

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1499728	10000	--	--	--	--	--
SDev	6142.637	.0000000	--	--	--	--	--
%RSD	.4095832	.0000000	--	--	--	--	--
#1	1495385	10000	--	--	--	--	--
#2	1504072	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 588556TFMS3 Operator:
Run Time: 02/05/16 21:15:06
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0335	252.7	1.321	.1512	128.3	.0335	.0243
SDev	.0008	.3	.000	.0229	.6	.0000	.0042
%RSD	2.324	.1016	.0204	15.12	.4377	.0313	17.18
#1	.0340	252.9	1.321	.1673	128.7	.0335	.0213
#2	.0329	252.5	1.322	.1350	127.9	.0335	.0272

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	472.3	.0410	9.536	.4582	6.643	169.2	77.14
SDev	4.5	.0001	.008	.0006	.013	1.9	.09
%RSD	.9607	.2610	.0888	.1422	.1975	1.126	.1213
#1	475.5	.0409	9.542	.4577	6.634	170.6	77.21
#2	469.1	.0411	9.530	.4586	6.652	167.9	77.08

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.3404	.2607	100.4	6.790	1.189	42.90	45.54
SDev	.0001	.0006	.1	.001	.001	.12	.18
%RSD	.0351	.2157	.0792	.0095	.1169	.2909	.3935
#1	.3403	.2611	100.5	6.789	1.190	42.81	45.67
#2	.3405	.2603	100.4	6.790	1.188	42.99	45.42

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	12.56	21.14	21.15	.0981	27.04	.2735	97.70
SDev	.02	.31	.01	.0024	.39	.0058	.83
%RSD	.1885	1.457	.0539	2.474	1.431	2.113	.8483
#1	12.57	21.36	21.16	.0964	26.77	.2694	97.12
#2	12.54	20.93	21.14	.0998	27.31	.2775	98.29

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.387	1.420	.7173	21.13	1.408	.1275	9.066
SDev	.024	.015	.0199	.11	.018	.0027	.004
%RSD	1.697	1.069	2.769	.5214	1.275	2.143	.0454
#1	1.404	1.431	.7033	21.20	1.420	.1255	9.063
#2	1.371	1.409	.7313	21.05	1.395	.1294	9.068

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.6697	18.27	1.001	4.389	2.206	.0522	.1819
SDev	.0005	.04	.004	.047	.000	.0013	.0004
%RSD	.0745	.2235	.4072	1.060	.0110	2.564	.2409
#1	.6701	18.24	.9977	4.356	2.205	.0513	.1822
#2	.6694	18.30	1.003	4.422	2.206	.0532	.1816

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	1.884	.8261
SDev	.007	.0149
%RSD	.3874	1.801
#1	1.889	.8366
#2	1.879	.8156

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1458462	10000	--	--	--	--	--
SDev	12365.18	.0000000	--	--	--	--	--
%RSD	.8478233	.0000000	--	--	--	--	--
#1	1449718	10000	--	--	--	--	--
#2	1467205	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 588556TFMS4 Operator:
Run Time: 02/05/16 21:20:12
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1318	257.9	.4731	.1577	122.0	.1219	.1353
SDev	.0003	.1	.0001	.0212	.1	.0001	.0014
%RSD	.2051	.0456	.0245	13.46	.0589	.0622	1.008
#1	.1316	258.0	.4731	.1727	122.1	.1219	.1363
#2	.1320	257.8	.4730	.1426	122.0	.1220	.1343

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	533.1	.1365	9.594	.4978	6.814	173.5	71.69
SDev	2.3	.0003	.008	.0003	.005	.8	.10
%RSD	.4228	.2583	.0816	.0687	.0732	.4734	.1385
#1	534.7	.1363	9.600	.4976	6.817	174.1	71.62
#2	531.5	.1368	9.589	.4981	6.810	172.9	71.76

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.4270	.4075	97.10	6.766	1.309	35.25	36.92
SDev	.0002	.0000	.09	.008	.002	.48	.01
%RSD	.0460	.0059	.0945	.1189	.1509	1.367	.0274
#1	.4268	.4075	97.04	6.772	1.311	34.91	36.91
#2	.4271	.4075	97.17	6.760	1.308	35.59	36.92

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	12.70	21.53	21.38	.2236	27.91	.1467	97.86
SDev	.02	.09	.08	.0034	.06	.0001	.21
%RSD	.1223	.4182	.3770	1.508	.2123	.0715	.2118
#1	12.71	21.59	21.32	.2260	27.87	.1468	97.71
#2	12.68	21.46	21.43	.2212	27.95	.1466	98.00

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.5231	.5331	.7618	21.41	.5292	.2455	10.56
SDev	.0126	.0009	.0240	.02	.0048	.0018	.01
%RSD	2.409	.1744	3.148	.1107	.9099	.7488	.1222
#1	.5320	.5337	.7449	21.39	.5326	.2442	10.57
#2	.5142	.5324	.7788	21.42	.5258	.2468	10.55

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.7972	18.73	.1545	4.402	2.165	.1918	.3125
SDev	.0007	.01	.0049	.102	.002	.0028	.0009
%RSD	.0927	.0397	3.197	2.309	.0744	1.459	.3053
#1	.7977	18.74	.1580	4.331	2.164	.1898	.3131
#2	.7967	18.73	.1510	4.474	2.166	.1938	.3118

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	1.814	.9684
SDev	.002	.0072
%RSD	.1262	.7383
#1	1.813	.9735
#2	1.816	.9634

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1460778	10000	--	--	--	--	--
SDev	3048.337	.0000000	--	--	--	--	--
%RSD	.2086790	.0000000	--	--	--	--	--
#1	1458623	10000	--	--	--	--	--
#2	1462934	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 588556TFAS Operator:
Run Time: 02/05/16 21:25:18
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0584	239.8	2.291	.1310	130.2	.0560	.0245
SDev	.0004	.1	.002	.0256	.6	.0000	.0033
%RSD	.6395	.0276	.0897	19.54	.4300	.0285	13.62
#1	.0582	239.8	2.292	.1490	130.6	.0559	.0222
#2	.0587	239.7	2.289	.1129	129.8	.0560	.0269

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	545.9	.0634	9.134	.5460	6.358	165.6	84.48
SDev	2.8	.0005	.020	.0003	.007	1.1	.01
%RSD	.5077	.8409	.2184	.0623	.1085	.6470	.0061
#1	547.8	.0631	9.148	.5458	6.363	166.4	84.48
#2	543.9	.0638	9.120	.5463	6.353	164.8	84.49

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.3524	.2446	114.1	6.971	1.107	51.72	53.81
SDev	.0013	.0003	.2	.012	.000	.54	.14
%RSD	.3627	.1206	.1695	.1789	.0349	1.036	.2662
#1	.3515	.2448	114.2	6.979	1.107	51.34	53.91
#2	.3533	.2444	114.0	6.962	1.107	52.10	53.70

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	11.88	24.27	24.05	.0913	27.02	.5398	96.54
SDev	.00	.14	.04	.0018	.05	.0007	.47
%RSD	.0073	.5588	.1600	1.916	.1835	.1293	.4848
#1	11.88	24.37	24.02	.0901	26.98	.5403	96.21
#2	11.88	24.17	24.08	.0925	27.05	.5393	96.87

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.322	2.376	.6088	24.10	2.356	.1761	10.92
SDev	.007	.011	.0183	.02	.005	.0034	.03
%RSD	.2812	.4623	3.007	.0810	.2182	1.938	.2387
#1	2.318	2.384	.5958	24.11	2.359	.1737	10.94
#2	2.327	2.368	.6217	24.09	2.352	.1785	10.90

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.6556	17.00	1.969	4.044	2.369	.0533	.1717
SDev	.0026	.01	.002	.109	.002	.0032	.0007
%RSD	.3907	.0691	.0790	2.685	.0779	6.024	.4188
#1	.6574	17.01	1.968	3.967	2.371	.0555	.1722
#2	.6538	16.99	1.970	4.121	2.368	.0510	.1712

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	2.035	.7765
SDev	.005	.0073
%RSD	.2262	.9395
#1	2.038	.7816
#2	2.032	.7713

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1441106	10000	--	--	--	--	--
SDev	7002.479	.0000000	--	--	--	--	--
%RSD	.4859102	.0000000	--	--	--	--	--
#1	1436154	10000	--	--	--	--	--
#2	1446057	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 590212TF Operator:
Run Time: 02/05/16 21:30:25
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0066	137.7	.1257	.1683	97.16	.0044	.0020
SDev	.0014	.1	.0008	.0067	.17	.0000	.0105
%RSD	21.08	.0525	.6377	3.998	.1753	.3052	526.1
#1	.0056	137.7	.1263	.1731	97.28	.0044	-.0054
#2	.0076	137.6	.1251	.1635	97.04	.0044	.0094

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	129.8	.0079	4.035	.1359	6.387	90.87	37.72
SDev	.3	.0003	.001	.0015	.005	.27	.01
%RSD	.2664	3.243	.0252	1.077	.0789	.2949	.0268
#1	130.0	.0077	4.036	.1349	6.390	91.06	37.71
#2	129.5	.0080	4.035	.1369	6.383	90.69	37.73

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1197	.0892	36.39	1.695	1.274	26.24	27.54
SDev	.0031	.0000	.00	.001	.001	.34	.06
%RSD	2.622	.0104	.0039	.0650	.0904	1.297	.2186
#1	.1175	.0892	36.39	1.695	1.275	26.00	27.59
#2	.1219	.0892	36.39	1.694	1.273	26.48	27.50

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	5.763	10.74	10.66	.0640	20.23	.1929	105.9
SDev	.003	.04	.08	.0049	.05	.0030	.4
%RSD	.0573	.3938	.7688	7.628	.2629	1.570	.4130
#1	5.760	10.77	10.71	.0605	20.27	.1951	105.6
#2	5.765	10.71	10.60	.0675	20.19	.1908	106.2

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.4429	.4533	.8818	10.68	.4494	.2700	3.089
SDev	.0010	.0057	.0129	.07	.0041	.0017	.002
%RSD	.2206	1.250	1.464	.6431	.9121	.6156	.0769
#1	.4436	.4573	.8726	10.72	.4523	.2688	3.088
#2	.4422	.4493	.8909	10.63	.4465	.2712	3.091

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.6099	10.85	.0355	5.289	.6982	.0243	.0817
SDev	.0024	.00	.0004	.136	.0006	.0024	.0001
%RSD	.3859	.0166	1.152	2.564	.0820	9.686	.0980
#1	.6116	10.84	.0357	5.193	.6986	.0226	.0818
#2	.6083	10.85	.0352	5.385	.6978	.0259	.0817

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.7275	.8118
SDev	.0008	.0017
%RSD	.1136	.2074
#1	.7280	.8130
#2	.7269	.8106

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1581036	10000	--	--	--	--	--
SDev	6507.504	.0000000	--	--	--	--	--
%RSD	.4115973	.0000000	--	--	--	--	--
#1	1576435	10000	--	--	--	--	--
#2	1585638	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 590213TF Operator:
Run Time: 02/05/16 21:35:32
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0065	312.5	.0956	.2096	86.39	.0088	.0332
SDev	.0007	.5	.0007	.0126	.37	.0000	.0017
%RSD	10.36	.1548	.7574	5.995	.4338	.1218	5.083
#1	.0060	312.8	.0951	.2185	86.12	.0088	.0320
#2	.0069	312.2	.0961	.2007	86.65	.0088	.0344

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	683.8	.0107	1.760	.3473	15.21	131.2	101.8
SDev	.6	.0004	.000	.0024	.01	.1	.2
%RSD	.0861	4.213	.0084	.6890	.0804	.0941	.2178
#1	683.4	.0110	1.759	.3456	15.21	131.3	101.6
#2	684.2	.0104	1.760	.3490	15.20	131.1	101.9

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2987	.1819	128.0	4.558	.4325	62.01	63.47
SDev	.0004	.0003	.5	.005	.0015	.14	.04
%RSD	.1385	.1451	.3576	.1071	.3454	.2257	.0640
#1	.2990	.1817	127.7	4.555	.4314	61.91	63.45
#2	.2984	.1820	128.3	4.562	.4335	62.10	63.50

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	2.528	20.15	19.90	.0822	28.31	.2094	96.03
SDev	.005	.06	.17	.0037	.20	.0006	.28
%RSD	.1800	.3135	.8772	4.558	.7088	.2607	.2910
#1	2.532	20.19	19.78	.0796	28.45	.2098	96.23
#2	2.525	20.10	20.03	.0849	28.17	.2090	95.83

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2294	.2243	1.553	19.97	.2258	.3105	9.400
SDev	.0047	.0012	.039	.10	.0024	.0011	.000
%RSD	2.071	.5363	2.491	.4771	1.055	.3465	.0013
#1	.2327	.2252	1.526	19.90	.2275	.3097	9.400
#2	.2260	.2235	1.580	20.03	.2241	.3112	9.400

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.3943	20.87	.0283	2.556	.6294	.0408	.1410
SDev	.0070	.00	.0016	.079	.0004	.0064	.0006
%RSD	1.768	.0192	5.787	3.076	.0705	15.62	.4599
#1	.3894	20.88	.0272	2.500	.6291	.0453	.1405
#2	.3993	20.87	.0295	2.611	.6297	.0363	.1414

010631

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	1.501	.8433
SDev	.002	.0014
%RSD	.1494	.1614
#1	1.500	.8442
#2	1.503	.8423

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1433622	10000	--	--	--	--	--
SDev	4161.323	.0000000	--	--	--	--	--
%RSD	.2902663	.0000000	--	--	--	--	--
#1	1436565	10000	--	--	--	--	--
#2	1430680	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 590214TF Operator:
Run Time: 02/05/16 21:40:39
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0199	415.6	.7329	.2284	41.60	.0198	.0301
SDev	.0004	.5	.0012	.0242	.04	.0000	.0014
%RSD	2.236	.1227	.1611	10.58	.0922	.1894	4.485
#1	.0196	415.9	.7321	.2454	41.57	.0198	.0291
#2	.0202	415.2	.7337	.2113	41.63	.0198	.0311

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	318.4	.0332	10.76	.6030	6.987	253.7	141.7
SDev	.7	.0001	.01	.0001	.002	.6	.2
%RSD	.2263	.2936	.0938	.0101	.0300	.2480	.1548
#1	318.9	.0331	10.77	.6030	6.988	254.1	141.6
#2	317.9	.0333	10.75	.6030	6.985	253.2	141.9

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.3183	.2628	90.10	10.86	.7030	85.21	82.34
SDev	.0018	.0002	.07	.01	.0006	.11	.04
%RSD	.5653	.0818	.0775	.0924	.0847	.1245	.0466
#1	.3170	.2626	90.05	10.87	.7034	85.13	82.36
#2	.3195	.2629	90.15	10.86	.7026	85.28	82.31

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	14.59	3.187	3.058	.1493	13.81	-.0015	104.0
SDev	.02	.008	.018	.0002	.09	.0018	.3
%RSD	.1287	.2437	.5788	.1291	.6749	120.3	.2562
#1	14.58	3.193	3.046	.1494	13.88	-.0027	103.8
#2	14.60	3.182	3.071	.1492	13.75	-.0002	104.2

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.8932	.9196	.4856	3.098	.9099	-.0358	1.856
SDev	.0068	.0063	.0178	.009	.0020	.0014	.001
%RSD	.7612	.6890	3.660	.2971	.2149	4.025	.0423
#1	.8980	.9151	.4730	3.092	.9085	-.0348	1.857
#2	.8884	.9240	.4982	3.105	.9113	-.0369	1.856

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.3795	39.53	.0403	21.93	4.097	.0518	.3408
SDev	.0001	.08	.0053	.09	.004	.0042	.0007
%RSD	.0324	.2071	13.16	.4007	.0943	8.132	.2059
#1	.3796	39.47	.0441	21.87	4.094	.0488	.3403
#2	.3794	39.59	.0366	21.99	4.100	.0548	.3413

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	1.067	2.910
SDev	.002	.001
%RSD	.2160	.0331
#1	1.066	2.909
#2	1.069	2.911

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1552748	10000	--	--	--	--	--
SDev	4083.542	.0000000	--	--	--	--	--
%RSD	.2629881	.0000000	--	--	--	--	--
#1	1549860	10000	--	--	--	--	--
#2	1555635	10000	--	--	--	--	--

Analysis Report 02/05/16 09:50:38 PM

Method: DAILY2 Sample Name: CCV Operator:
Run Time: 02/05/16 21:45:46
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.053	10.19	5.190	5.115	10.46	1.003	4.927
SDev	.000	.00	.016	.036	.01	.000	.006
%RSD	.0402	.0383	.3108	.7117	.0916	.0048	.1316
#1	1.054	10.18	5.201	5.089	10.45	1.003	4.922
#2	1.053	10.19	5.179	5.141	10.47	1.003	4.932
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.100	11.00	5.500	5.500	11.00	1.100	5.500
Low	.9000	9.000	4.500	4.500	9.000	.9000	4.500

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	21.21	1.030	5.059	2.005	2.031	10.36	19.64
SDev	.00	.001	.000	.000	.003	.01	.01
%RSD	.0194	.0564	.0056	.0044	.1331	.1221	.0743
#1	21.21	1.029	5.059	2.005	2.029	10.35	19.63
#2	21.21	1.030	5.059	2.005	2.033	10.36	19.65
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.00	1.100	5.500	2.200	2.200	11.00	22.00
Low	18.00	.9000	4.500	1.800	1.800	9.000	18.00

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.101	5.336	20.78	1.018	4.851	29.92	29.28
SDev	.005	.019	.02	.000	.002	.33	.10
%RSD	.1016	.3525	.0743	.0485	.0507	1.111	.3365
#1	5.097	5.349	20.79	1.018	4.852	29.69	29.35
#2	5.105	5.323	20.77	1.018	4.849	30.16	29.21
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.500	5.500	22.00	1.100	5.500	33.00	33.00
Low	4.500	4.500	18.00	.9000	4.500	27.00	27.00

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	5.041	5.003	5.006	.9831	L.8127	1.002	102.5
SDev	.011	.040	.009	.0021	.0227	.000	.5
%RSD	.2098	.8083	.1800	.2084	2.789	.0034	.4989
#1	5.033	5.032	5.012	.9817	L.7967	1.002	102.1
#2	5.048	4.975	4.999	.9845	L.8287	1.002	102.8
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Low	LC Pass	NOCHECK
High	5.500			1.100	1.100	1.100	
Low	4.500			.9000	.9000	.9000	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

010635

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.196	5.257	4.821	5.000	5.231	4.935	4.998
SDev	.053	.020	.008	.019	.031	.002	.002
%RSD	1.016	.3742	.1734	.3893	.5865	.0372	.0352
#1	5.234	5.271	4.815	5.014	5.253	4.934	4.999
#2	5.159	5.243	4.827	4.986	5.210	4.937	4.997
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			5.500	5.500	5.500	5.500	5.500
Low			4.500	4.500	4.500	4.500	4.500

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.011	4.821	5.165	4.856	5.171	H1.128	5.175
SDev	.002	.002	.019	.080	.000	.002	.005
%RSD	.1996	.0409	.3663	1.644	.0077	.1434	.0963
#1	1.010	4.820	5.151	4.799	5.171	H1.127	5.179
#2	1.013	4.823	5.178	4.912	5.171	H1.130	5.172
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	1.100	5.500	5.500	5.500	5.500	1.100	5.500
Low	.9000	4.500	4.500	4.500	4.500	.9000	4.500

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	1.031	4.960
SDev	.003	.014
%RSD	.2771	.2911
#1	1.033	4.949
#2	1.029	4.970
Errors	LC Pass	LC Pass
High	1.100	5.500
Low	.9000	4.500

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1529406	10000	--	--	--	--	--
SDev	7576.649	.0000000	--	--	--	--	--
%RSD	.4953980	.0000000	--	--	--	--	--
#1	1524049	10000	--	--	--	--	--
#2	1534764	10000	--	--	--	--	--

Method: DAILY2 Sample Name: CCB Operator:
Run Time: 02/05/16 21:50:52
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0005	.0077	.0033	.0352	H.0055	.0001	-.0039
SDev	.0005	.0052	.0021	.0076	.0008	.0000	.0105
%RSD	87.85	67.20	64.93	21.76	15.37	35.27	269.1
#1	.0002	.0040	.0048	.0406	H.0061	.0000	L-.0113
#2	.0009	.0113	.0018	.0298	.0049	.0001	.0035
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass
High	.0050	.0500	.0050	.0500	.0050	.0050	.0100
Low	-.0050	-.0500	-.0050	-.0500	-.0050	-.0050	-.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0240	.0003	.0006	.0005	-.0006	.0099	.0055
SDev	.0009	.0001	.0005	.0015	.0005	.0328	.0265
%RSD	3.619	39.93	87.84	312.5	79.26	331.8	478.3
#1	.0246	.0002	.0002	-.0006	-.0003	-.0133	-.0132
#2	.0234	.0003	.0009	.0015	-.0009	.0331	.0243
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0500	.0050	.0050	.0050	.0050	.0500	.1000
Low	-.0500	-.0050	-.0050	-.0050	-.0050	-.0500	-.1000

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0002	.0003	.0041	.0003	.0004	L-.0713	.0145
SDev	.0032	.0000	.0025	.0001	.0001	.3829	.0072
%RSD	1433.	1.939	59.83	29.61	23.48	536.7	49.36
#1	-.0025	.0003	.0024	.0003	.0005	L-.3421	.0095
#2	.0021	.0003	.0059	.0002	.0004	H.1994	.0196
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass
High	.0050	.0050	.0500	.0050	.0050	.0500	.0500
Low	-.0050	-.0050	-.0500	-.0050	-.0050	-.0500	-.0500

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0001	.0041	-.0000	-.0012	H.0298	-.0041	104.0
SDev	.0001	.0019	.0015	.0032	.0176	.0033	.1
%RSD	51.80	45.23	15240.	268.3	59.27	78.96	.1221
#1	.0001	.0028	.0011	-.0034	.0173	-.0064	104.1
#2	.0001	.0054	-.0011	.0011	H.0422	-.0018	103.9
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC High	LC Pass	NOCHECK
High	.0050			.0050	.0200	.0100	
Low	-.0050			-.0050	-.0200	-.0100	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0004	.0003	H.0139	.0014	.0003	.0089	.0005
SDev	.0020	.0033	.0015	.0004	.0028	.0007	.0001
%RSD	466.2	1287.	10.53	30.01	899.3	8.280	14.62
#1	.0018	.0026	H.0129	.0017	.0023	.0084	.0005
#2	-.0010	-.0021	H.0149	.0011	-.0017	.0094	.0004
Errors	NOCHECK	NOCHECK	LC High	LC Pass	LC Pass	LC Pass	LC Pass
High			.0100	.0050	.0050	.0100	.0050
Low			-.0100	-.0050	-.0050	-.0100	-.0050

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0021	.0007	-.0008	.0079	-.0001	.0002	.0001
SDev	.0051	.0001	.0056	.1157	.0008	.0009	.0002
%RSD	244.3	17.01	663.8	1457.	894.7	377.4	184.5
#1	.0015	.0008	-.0048	-.0739	-.0006	.0009	.0002
#2	-.0057	.0006	.0031	.0898	.0005	-.0004	-.0000

Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0100	.0050	.0100	.1000	.0050	.0100	.0050
Low	-.0100	-.0050	-.0100	-.1000	-.0050	-.0100	-.0050

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0003	.0002
SDev	.0000	.0011
%RSD	2.479	654.0
#1	.0003	-.0006
#2	.0003	.0010

Errors	LC Pass	LC Pass
High	.0050	.0050
Low	-.0050	-.0050

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1552884	10000	--	--	--	--	--
SDev	1858.984	.0000000	--	--	--	--	--
%RSD	.1197117	.0000000	--	--	--	--	--
#1	1554199	10000	--	--	--	--	--
#2	1551570	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 591000TF Operator:
Run Time: 02/05/16 21:55:59
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0067	407.6	.1115	.3212	14.04	.0139	.0794
SDev	.0008	.7	.0009	.0370	.32	.0000	.0019
%RSD	11.44	.1696	.8304	11.51	2.282	.1192	2.395
#1	.0061	408.1	.1121	.3474	14.27	.0139	.0807
#2	.0072	407.1	.1108	.2951	13.82	.0139	.0780

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	151.1	.0070	1.209	.5219	1.528	291.8	129.8
SDev	1.1	.0002	.002	.0012	.001	2.9	.1
%RSD	.7569	2.715	.1246	.2367	.0340	1.009	.0458
#1	151.9	.0068	1.210	.5210	1.528	293.9	129.9
#2	150.3	.0071	1.208	.5228	1.528	289.7	129.8

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1704	.2938	67.88	10.35	.5444	56.69	56.89
SDev	.0035	.0005	.04	.00	.0013	.45	.20
%RSD	2.079	.1810	.0662	.0439	.2394	.7921	.3497
#1	.1679	.2942	67.92	10.35	.5453	56.37	57.03
#2	.1729	.2935	67.85	10.35	.5435	57.01	56.75

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	1.863	26.84	26.68	.1761	66.37	-.0411	99.05
SDev	.000	.12	.03	.0004	.23	.0017	.39
%RSD	.0179	.4373	.1302	.2312	.3517	4.148	.3914
#1	1.863	26.92	26.66	.1758	66.20	-.0423	98.77
#2	1.863	26.75	26.71	.1764	66.53	-.0399	99.32

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2380	.2430	.3447	26.71	.2411	.0388	5.210
SDev	.0085	.0008	.0183	.02	.0023	.0017	.008
%RSD	3.565	.3510	5.312	.0597	.9365	4.464	.1485
#1	.2320	.2436	.3318	26.72	.2395	.0401	5.204
#2	.2440	.2423	.3577	26.70	.2427	.0376	5.215

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.3016	34.23	.0422	1.952	1.217	.0470	.1139
SDev	.0032	.00	.0051	.088	.001	.0027	.0001
%RSD	1.056	.0136	12.08	4.525	.0939	5.817	.0539
#1	.3038	34.23	.0459	1.890	1.217	.0490	.1140
#2	.2993	34.24	.0386	2.015	1.218	.0451	.1139

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	1.250	1.021
SDev	.001	.008
%RSD	.0902	.8212
#1	1.251	1.027
#2	1.249	1.015

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1478657	10000	--	--	--	--	--
SDev	5782.719	.0000000	--	--	--	--	--
%RSD	.3910792	.0000000	--	--	--	--	--
#1	1474568	10000	--	--	--	--	--
#2	1482746	10000	--	--	--	--	--

Method: DAILY2 Sample Name: CRI Operator:
Run Time: 02/05/16 22:01:05
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0112	.1407	.0115	H.1039	H.0598	.0050	.0209
SDev	.0002	.0039	.0018	.0008	.0117	.0001	.0017
%RSD	2.161	2.757	15.82	.8034	19.61	.9652	8.146
#1	.0113	.1435	.0128	H.1033	H.0681	.0049	.0197
#2	.0110	.1380	.0102	H.1045	H.0516	.0050	.0221
Errors	LC Pass	LC Pass	LC Pass	LC High	LC High	LC Pass	LC Pass
High	.0150	.1500	.0150	.0600	.0075	.0075	.0300
Low	.0050	.0500	.0050	.0200	.0025	.0025	.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1209	.0053	.0057	.0048	.0049	.1151	.3088
SDev	.0024	.0001	.0002	.0015	.0006	.0132	.0267
%RSD	1.992	2.491	3.899	30.10	12.68	11.43	8.649
#1	.1226	.0052	.0059	.0038	.0053	.1058	.2899
#2	.1192	.0054	.0055	.0059	.0045	.1244	.3276
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.1500	.0075	.0075	.0075	.0075	.1500	.7500
Low	.0500	.0025	.0025	.0025	.0025	.0500	.2500

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0091	.0087	.0585	.0056	.0050	L.1130	.2395
SDev	.0024	.0001	.0001	.0003	.0004	.2045	.0088
%RSD	25.99	.6628	.0803	4.538	8.578	181.0	3.689
#1	.0075	.0087	.0585	.0058	.0053	L-.0316	.2332
#2	.0108	.0087	.0586	.0054	.0047	.2576	.2457
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass
High	.0150	.0150	.1000	.0075	.0075	.5000	.5000
Low	.0050	.0050	.0250	.0025	.0025	.1250	.1250

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0047	.0128	.0069	.0222	H.0966	.0147	103.8
SDev	.0008	.0003	.0003	.0001	.0206	.0025	.6
%RSD	17.35	2.167	3.843	.2618	21.35	17.07	.6124
#1	.0053	.0126	.0071	.0221	H.0820	.0164	103.3
#2	.0041	.0130	.0068	.0222	H.1112	.0129	104.2
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC High	LC Pass	NOCHECK
High	.0075			.0300	.0750	.0300	
Low	.0025			.0100	.0250	.0100	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0099	.0072	H.6490	H.0089	.0081	H.0179	.0058
SDev	.0037	.0034	.0029	.0001	.0035	.0016	.0001
%RSD	37.24	47.68	.4510	.9539	43.38	8.709	1.113
#1	.0125	.0096	H.6469	H.0089	.0105	H.0190	.0058
#2	.0073	.0047	H.6510	H.0088	.0056	H.0168	.0057
Errors	NOCHECK	NOCHECK	LC High	LC High	LC Pass	LC High	LC Pass
High			.1500	.0075	.0150	.0150	.0075
Low			.0500	.0025	.0050	.0050	.0025

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0201	.0062	.0212	.1693	.0058	.0245	.0053
SDev	.0083	.0007	.0009	.0911	.0013	.0013	.0003
%RSD	41.42	10.94	4.158	53.84	22.22	5.427	4.622
#1	.0260	.0067	.0206	.1049	.0067	.0254	.0055
#2	.0142	.0057	.0218	.2337	.0049	.0235	.0052
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0300	.0075	.0300	.3000	.0075	.0300	.0075
Low	.0100	.0025	.0100	.1000	.0025	.0100	.0025

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0053	.0054
SDev	.0002	.0021
%RSD	4.218	39.84
#1	.0054	.0038
#2	.0051	.0069
Errors	LC Pass	LC Pass
High	.0075	.0075
Low	.0025	.0025

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1549458	10000	--	--	--	--	--
SDev	9565.033	.0000000	--	--	--	--	--
%RSD	.6173150	.0000000	--	--	--	--	--
#1	1542694	10000	--	--	--	--	--
#2	1556221	10000	--	--	--	--	--

Method: DAILY2 Sample Name: CRI-N Operator:
Run Time: 02/05/16 22:06:12
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0223	.2482	.0200	H.1663	H.0146	.0099	.0444
SDev	.0005	.0069	.0003	.0010	.0009	.0001	.0017
%RSD	2.366	2.779	1.515	.5787	6.488	.5619	3.786
#1	.0220	.2433	.0202	H.1657	H.0153	.0098	.0433
#2	.0227	.2531	.0198	H.1670	H.0139	.0099	.0456
Errors	LC Pass	LC Pass	LC Pass	LC High	LC High	LC Pass	LC Pass
High	.0260	.2600	.0260	.1040	.0130	.0130	.0520
Low	.0140	.1400	.0140	.0560	.0070	.0070	.0280

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2197	.0105	.0110	.0104	.0103	.2117	L.6142
SDev	.0009	.0003	.0009	.0025	.0001	.0415	.0232
%RSD	.4190	2.791	7.889	24.05	.5505	19.62	3.776
#1	.2191	.0103	.0104	.0086	.0103	.1823	L.5978
#2	.2204	.0107	.0116	.0121	.0102	.2410	L.6306
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low
High	.2600	.0130	.0130	.0130	.0130	.2600	1.300
Low	.1400	.0070	.0070	.0070	.0070	.1400	.7000

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0196	.0181	.1148	.0105	.0095	.3673	.4567
SDev	.0032	.0000	.0016	.0001	.0014	.4061	.0082
%RSD	16.36	.0387	1.433	1.148	14.62	110.6	1.805
#1	.0173	.0181	.1136	.0106	.0105	L.0802	.4509
#2	.0218	.0181	.1160	.0104	.0085	H.6544	.4626
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0260	.0260	.1300	.0130	.0130	.6500	.6500
Low	.0140	.0140	.0700	.0070	.0070	.3500	.3500

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0107	.0139	.0101	.0415	.1054	.0394	103.7
SDev	.0004	.0008	.0014	.0077	.0038	.0046	.0
%RSD	4.153	5.725	13.96	18.65	3.606	11.53	.0215
#1	.0110	.0133	.0111	.0360	.1081	.0362	103.7
#2	.0104	.0144	.0091	.0469	.1027	.0426	103.7
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	.0130			.0520	.1300	.0520	
Low	.0070			.0280	.0700	.0280	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0237	.0169	H.9294	.0113	.0191	.0259	.0106
SDev	.0032	.0004	.0075	.0007	.0008	.0005	.0000
%RSD	13.34	2.238	.8022	5.933	4.174	2.084	.3631
#1	.0214	.0172	H.9242	.0118	.0186	.0255	.0106
#2	.0259	.0166	H.9347	.0109	.0197	H.0263	.0106
Errors	NOCHECK	NOCHECK	LC High	LC Pass	LC Pass	LC Pass	LC Pass
High			.2600	.0130	.0260	.0260	.0130
Low			.1400	.0070	.0140	.0140	.0070

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0441	.0103	.0407	.3954	.0107	.0449	.0105
SDev	.0016	.0001	.0030	.1029	.0002	.0014	.0001
%RSD	3.739	.8213	7.346	26.04	1.454	3.108	.9370
#1	.0453	.0103	.0386	.3226	.0108	.0459	.0106
#2	.0429	.0102	.0429	.4682	.0106	.0440	.0105
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0520	.0130	.0520	.5200	.0130	.0520	.0130
Low	.0280	.0070	.0280	.2800	.0070	.0280	.0070

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0105	.0100
SDev	.0001	.0020
%RSD	.7809	20.06
#1	.0104	.0086
#2	.0105	.0114
Errors	LC Pass	LC Pass
High	.0130	.0130
Low	.0070	.0070

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1548316	10000	--	--	--	--	--
SDev	381.8377	.0000000	--	--	--	--	--
%RSD	.0246615	.0000000	--	--	--	--	--
#1	1548046	10000	--	--	--	--	--
#2	1548586	10000	--	--	--	--	--

Method: DAILY2 Sample Name: ICSA Operator:
Run Time: 02/05/16 22:11:18
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0000	474.1	-.0014	.1582	.0039	.0001	.0206
SDev	.0003	.1	.0038	.0092	.0000	.0001	.0082
%RSD	9875.	.0137	279.7	5.819	.0094	40.47	39.69
#1	-.0002	474.1	-.0041	.1647	.0039	.0001	.0148
#2	.0002	474.2	.0013	.1517	.0039	.0001	.0264
Errors	NOCHECK	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High		600.0					
Low		400.0					

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	462.6	.0000	-.0028	.0000	-.0029	198.6	.0031
SDev	1.7	.0006	.0005	.0014	.0011	.1	.0428
%RSD	.3730	1410.	18.24	2990.	37.34	.0527	1399.
#1	461.4	-.0004	-.0031	-.0010	-.0036	198.5	-.0272
#2	463.8	.0004	-.0024	.0011	-.0021	198.6	.0333
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	NOCHECK
High	600.0					240.0	
Low	400.0					160.0	

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0016	.0018	535.5	.0225	-.0019	.1783	.1296
SDev	.0028	.0001	.1	.0001	.0000	.4372	.0078
%RSD	179.2	7.184	.0238	.2464	.7987	245.2	6.044
#1	-.0035	.0017	535.6	.0226	-.0019	-.1309	.1241
#2	.0004	.0018	535.5	.0225	-.0019	.4875	.1352
Errors	NOCHECK	NOCHECK	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High			600.0				
Low			400.0				

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0023	.1039	-.0429	.1143	.0005	-.0029	94.00
SDev	.0006	.0069	.0055	.0001	.0455	.0015	.43
%RSD	27.24	6.690	12.93	.0403	9763.	50.16	.4568
#1	-.0018	.0990	-.0390	.1143	.0327	-.0019	94.31
#2	-.0027	.1089	-.0468	.1142	-.0317	-.0039	93.70
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0029	-.0009	.7670	.0061	.0004	.0019	.0040
SDev	.0091	.0001	.0025	.0014	.0030	.0016	.0000
%RSD	318.2	6.454	.3255	22.74	844.7	82.23	.4661
#1	.0093	-.0009	.7688	.0070	.0025	.0030	.0040
#2	-.0036	-.0009	.7652	.0051	-.0018	.0008	.0039
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0143	.0027	.0122	.0580	-.0023	.0040	-.0002
SDev	.0005	.0001	.0019	.1014	.0001	.0065	.0001
%RSD	3.655	1.778	15.68	174.8	5.926	160.1	31.01
#1	.0147	.0026	.0136	-.0137	-.0024	-.0005	-.0003
#2	.0139	.0027	.0109	.1297	-.0022	.0086	-.0002
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	-.0034	.0005
SDev	.0001	.0016
%RSD	1.912	335.1
#1	-.0033	-.0007
#2	-.0034	.0016
Errors	NOCHECK	NOCHECK
High		
Low		

010650

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1403324	10000	--	--	--	--	--
SDev	6422.651	.0000000	--	--	--	--	--
%RSD	.4576740	.0000000	--	--	--	--	--
#1	1407866	10000	--	--	--	--	--
#2	1398783	10000	--	--	--	--	--

Method: DAILY2 Sample Name: ICSAB Operator:
Run Time: 02/05/16 22:16:24
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.092	469.4	1.040	1.135	.5484	.4938	.0227
SDev	.000	.1	.010	.004	.0001	.0004	.0019
%RSD	.0137	.0225	.9246	.3299	.0219	.0801	8.321
#1	1.092	469.3	1.033	1.137	.5485	.4936	.0214
#2	1.092	469.5	1.047	1.132	.5484	.4941	.0241
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK
High	1.200	600.0	1.200	1.200	.6000	.6000	
Low	.8000	400.0	.8000	.8000	.4000	.4000	

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	462.0	.9799	.4844	.4910	.5339	198.4	.0084
SDev	3.1	.0003	.0005	.0018	.0005	1.2	.0071
%RSD	.6612	.0319	.1055	.3621	.0903	.6000	84.77
#1	464.1	.9801	.4848	.4923	.5342	199.2	.0034
#2	459.8	.9797	.4841	.4898	.5335	197.6	.0134
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK
High	600.0	1.200	.6000	.6000	.6000	240.0	
Low	400.0	.8000	.4000	.4000	.4000	160.0	

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0011	1.189	531.8	.5214	1.012	.2058	.0984
SDev	.0000	.006	.5	.0002	.001	.2666	.0059
%RSD	1.505	.5081	.0996	.0404	.1437	129.5	5.958
#1	-.0011	1.194	532.2	.5213	1.011	.0173	.0942
#2	-.0011	1.185	531.5	.5216	1.013	.3944	.1025
Errors	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK	NOCHECK
High		1.200	600.0	.6000	1.200		
Low		.8000	400.0	.4000	.8000		

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.9732	1.074	.9254	.1092	.0215	1.059	94.11
SDev	.0024	.010	.0003	.0001	.0005	.011	.61
%RSD	.2493	.9421	.0338	.1258	2.142	.9940	.6529
#1	.9749	1.081	.9252	.1091	.0218	1.052	93.68
#2	.9715	1.067	.9256	.1093	.0211	1.067	94.54
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	NOCHECK
High	1.200					1.200	
Low	.8000					.8000	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.013	1.025	1.352	.9739	1.020	.9742	1.036
SDev	.016	.004	.001	.0032	.008	.0029	.001
%RSD	1.610	.3598	.0968	.3245	.7733	.2956	.1300
#1	1.025	1.028	1.353	.9761	1.026	.9721	1.035
#2	1.002	1.023	1.351	.9717	1.015	.9762	1.037
Errors	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass
High				1.200	1.200	1.200	1.200
Low				.8000	.8000	.8000	.8000

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0082	.9570	.9843	1.040	.5099	.0205	-.0003
SDev	.0035	.0004	.0075	.027	.0001	.0003	.0004
%RSD	41.94	.0426	.7570	2.551	.0206	1.499	147.7
#1	.0107	.9567	.9895	1.021	.5099	.0207	.0000
#2	.0058	.9573	.9790	1.059	.5098	.0203	-.0006
Errors	NOCHECK	LC Pass	LC Pass	NOCHECK	LC Pass	NOCHECK	NOCHECK
High		1.200	1.200		.6000		
Low		.8000	.8000		.4000		

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.9640	.9420
SDev	.0009	.0050
%RSD	.0958	.5268
#1	.9633	.9455
#2	.9646	.9385
Errors	LC Pass	NOCHECK
High	1.200	
Low	.8000	

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1404827	10000	--	--	--	--	--
SDev	9151.376	.0000000	--	--	--	--	--
%RSD	.6514237	.0000000	--	--	--	--	--
#1	1398356	10000	--	--	--	--	--
#2	1411298	10000	--	--	--	--	--

Method: DAILY2 Sample Name: CCV Operator:
Run Time: 02/05/16 22:21:31
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.056	10.17	5.195	5.119	10.48	.9996	4.917
SDev	.000	.00	.005	.051	.02	.0006	.027
%RSD	.0321	.0006	.1007	.9933	.2220	.0561	.5411
#1	1.056	10.17	5.199	5.084	10.47	1.000	4.935
#2	1.057	10.17	5.192	5.155	10.50	.9992	4.898
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.100	11.00	5.500	5.500	11.00	1.100	5.500
Low	.9000	9.000	4.500	4.500	9.000	.9000	4.500

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	21.10	1.027	5.063	2.012	2.038	10.36	19.54
SDev	.25	.000	.001	.002	.001	.09	.01
%RSD	1.185	.0008	.0192	.1170	.0379	.8227	.0545
#1	21.28	1.027	5.064	2.013	2.038	10.42	19.55
#2	20.92	1.026	5.062	2.010	2.039	10.30	19.54
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.00	1.100	5.500	2.200	2.200	11.00	22.00
Low	18.00	.9000	4.500	1.800	1.800	9.000	18.00

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.120	5.337	20.74	1.020	4.829	30.05	29.17
SDev	.007	.047	.02	.000	.010	.50	.19
%RSD	.1443	.8751	.0829	.0283	.2050	1.653	.6528
#1	5.115	5.370	20.75	1.020	4.822	29.69	29.30
#2	5.125	5.304	20.73	1.020	4.836	30.40	29.04
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.500	5.500	22.00	1.100	5.500	33.00	33.00
Low	4.500	4.500	18.00	.9000	4.500	27.00	27.00

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	5.055	4.995	5.020	.9903	L.8203	1.005	101.7
SDev	.006	.049	.024	.0066	.0430	.002	1.0
%RSD	.1124	.9798	.4753	.6689	5.237	.1679	.9934
#1	5.051	5.030	5.037	.9949	L.8507	1.006	101.0
#2	5.059	4.960	5.003	.9856	L.7899	1.004	102.4
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Low	LC Pass	NOCHECK
High	5.500			1.100	1.100	1.100	
Low	4.500			.9000	.9000	.9000	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.141	5.275	4.763	5.007	5.225	4.900	5.021
SDev	.062	.023	.009	.032	.036	.010	.002
%RSD	1.201	.4444	.1867	.6429	.6924	.2131	.0486
#1	5.185	5.291	4.757	5.030	5.251	4.908	5.022
#2	5.097	5.258	4.769	4.984	5.199	4.893	5.019
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			5.500	5.500	5.500	5.500	5.500
Low			4.500	4.500	4.500	4.500	4.500

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.017	4.823	5.178	4.853	5.178	H1.136	5.194
SDev	.000	.001	.001	.124	.004	.008	.003
%RSD	.0239	.0103	.0168	2.565	.0755	.7449	.0520
#1	1.017	4.823	5.178	4.765	5.175	H1.130	5.196
#2	1.017	4.822	5.179	4.941	5.181	H1.142	5.193
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	1.100	5.500	5.500	5.500	5.500	1.100	5.500
Low	.9000	4.500	4.500	4.500	4.500	.9000	4.500

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	1.025	4.921
SDev	.000	.065
%RSD	.0464	1.316
#1	1.025	4.967
#2	1.024	4.875
Errors	LC Pass	LC Pass
High	1.100	5.500
Low	.9000	4.500

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1518590	10000	--	--	--	--	--
SDev	15004.10	.0000000	--	--	--	--	--
%RSD	.9880286	.0000000	--	--	--	--	--
#1	1507980	10000	--	--	--	--	--
#2	1529199	10000	--	--	--	--	--

Method: DAILY2 Sample Name: CCB Operator:
Run Time: 02/08/16 11:53:35
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0001	.0102	.0003	.0099	.0000	.0001	.0050
SDev	.0000	.0054	.0047	.0026	.0001	.0001	.0009
%RSD	27.19	53.13	1416.	25.94	123.6	73.36	19.12
#1	.0001	.0063	.0037	.0081	.0000	.0001	.0056
#2	.0001	.0140	-.0030	.0118	.0001	.0002	.0043
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0050	.0500	.0050	.0500	.0050	.0050	.0100
Low	-.0050	-.0500	-.0050	-.0500	-.0050	-.0050	-.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0041	.0002	-.0001	-.0007	-.0001	.0007	-.0146
SDev	.0021	.0001	.0002	.0033	.0004	.0766	.0592
%RSD	50.22	39.34	144.1	478.2	364.5	10490.	406.8
#1	.0026	.0003	-.0002	-.0030	-.0004	L-.0534	-.0564
#2	.0055	.0002	.0000	.0016	.0002	H.0549	.0273
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0500	.0050	.0050	.0050	.0050	.0500	.1000
Low	-.0500	-.0050	-.0050	-.0050	-.0050	-.0500	-.1000

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0011	.0000	-.0014	.0000	-.0002	L-.1819	-.0225
SDev	.0054	.0002	.0015	.0001	.0001	.9138	.0154
%RSD	513.0	424.5	106.7	180.2	32.73	502.2	68.17
#1	-.0049	-.0001	-.0025	.0001	-.0003	L-.8281	-.0334
#2	.0028	.0002	-.0003	-.0000	-.0002	H.4642	-.0117
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass
High	.0050	.0050	.0500	.0050	.0050	.0500	.0500
Low	-.0050	-.0050	-.0500	-.0050	-.0050	-.0500	-.0500

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0006	-.0000	.0021	-.0001	.0112	L-.0192	99.64
SDev	.0001	.0020	.0015	.0044	.0092	.0092	.04
%RSD	8.515	66630.	74.07	3933.	81.92	48.22	.0384
#1	-.0006	-.0014	.0032	-.0033	.0047	L-.0257	99.61
#2	-.0006	.0014	.0010	.0030	.0177	L-.0126	99.66
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Low	NOCHECK
High	.0050			.0050	.0200	.0100	
Low	-.0050			-.0050	-.0200	-.0100	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0011	.0014	.0004	.0014	.0006	.0073	.0000
SDev	.0047	.0017	.0015	.0004	.0027	.0004	.0000
%RSD	433.0	118.3	360.0	26.08	449.1	5.588	42.47
#1	-.0044	.0002	-.0007	.0016	-.0013	.0070	.0000
#2	.0022	.0026	.0015	.0011	.0025	.0076	.0000
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			.0100	.0050	.0050	.0100	.0050
Low			-.0100	-.0050	-.0050	-.0100	-.0050

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0013	.0001	-.0002	-.0134	.0007	.0011	.0001
SDev	.0027	.0001	.0027	.1851	.0001	.0012	.0001
%RSD	201.0	148.8	1541.	1378.	6.723	106.3	123.4
#1	.0032	.0002	-.0021	L-.1443	.0008	.0003	.0000
#2	-.0006	-.0000	.0018	H.1175	.0007	.0020	.0001
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0100	.0050	.0100	.1000	.0050	.0100	.0050
Low	-.0100	-.0050	-.0100	-.1000	-.0050	-.0100	-.0050

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0004	.0003
SDev	.0000	.0032
%RSD	5.570	1095.
#1	.0004	-.0020
#2	.0004	.0026
Errors	LC Pass	LC Pass
High	.0050	.0050
Low	-.0050	-.0050

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1487353	10000	--	--	--	--	--
SDev	461.0336	.0000000	--	--	--	--	--
%RSD	.0309969	.0000000	--	--	--	--	--
#1	1487027	10000	--	--	--	--	--
#2	1487679	10000	--	--	--	--	--

010660

Southwest Research Institute

QC STD. ID's		ICP CAL. STD.	
CCV	66611	ID's	
CRI	66656	STD0	66862
ICSA	66658	STD1	65782
ICSAB	66659	STD2	65783
		STD3	65784
UCL1	66865	STD4	65056
UCL2	65793	STD5	65785
NIH CRI	66657	STD6	65048
UCL-Al-500ppm	65794		

☐ 200.7 TAP No. 01-0406-028 Rev10/Jun15

☑ 6010B TAP No. 01-0406-130 Rev11/Jun15

☐ 6010C TAP No. 01-0406-130 Rev11/Jun15

☐ SWRI TAP No. 01-0406-148 Rev4/May15

☐ OTHER _____

QC Earliest Expiration Date 3/21/2016

Internal Standard (Sc) @10ppm Added in **Prep lab:** (YES) NO

Internal Standard (Sc) @10ppm Added in **ICP lab:** Inorg# ~~16567 Exp: 9/22/16~~ RE 2/9/16

IDL run date: **06/02/15**

IEC run date: 07/15/15

PROJ. NO.	PROJECT	TO#	DATE	MATRIX	LOGBOOK PG
21431.01.001	TETRA TECH	160115-1	2/8/16	Solid, 80/20	20160127-P004

INSTRUMENT: TRACE2

FILENAME: B160208

2/9/16
ANALYST/DATE

Analytical Batch # 20160211-A006

File converted to wsl? ☐

2/9/16

Analysis Report Summary 02/09/16 08:22:14 AM

010661

#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
1	blk	Y16FEB	DAILY2	02/08/16	13:49		X	IR
2	clp_std4	Y16FEB	DAILY2	02/08/16	13:55		X	IR
3	clp_std1	Y16FEB	DAILY2	02/08/16	13:59		X	IR
4	clp_std3	Y16FEB	DAILY2	02/08/16	14:03		X	IR
5	clp_std5	Y16FEB	DAILY2	02/08/16	14:07		X	IR
6	clp_std2	Y16FEB	DAILY2	02/08/16	14:11		X	IR
7	clp_std6	Y16FEB	DAILY2	02/08/16	14:15		X	IR
8	ICV	Y16FEB	DAILY2	02/08/16	14:20		S	CONC
9	ICB	Y16FEB	DAILY2	02/08/16	14:25		S	CONC
10	CRI	Y16FEB	DAILY2	02/08/16	14:30		S	CONC
11	CRI-N	Y16FEB	DAILY2	02/08/16	14:36		S	CONC
12	ICSA	Y16FEB	DAILY2	02/08/16	14:41		S	CONC
13	ICSAB	Y16FEB	DAILY2	02/08/16	14:46		S	CONC
14	UCL1	Y16FEB	DAILY2	02/08/16	14:51		S	CONC
15	UCL-AL-500PPM	Y16FEB	DAILY2	02/08/16	14:57		S	CONC
16	UCL-2	Y16FEB	DAILY2	02/08/16	15:09		S	CONC
17	ZZZZ	Y16FEB	DAILY2	02/08/16	15:14		S	CONC
18	~~ccv~~ zz (RL) SL 4/19/16	Y16FEB	DAILY2	02/08/16	15:19		S	CONC
19	CCV	Y16FEB	DAILY2	02/08/16	15:30		S	CONC
20	CCB	Y16FEB	DAILY2	02/08/16	15:35		S	CONC
21	PB16A27KE2 DF100	Y16FEB	DAILY2	02/08/16	15:40		S	CONC
22	LCS16A27KE3 DF100	Y16FEB	DAILY2	02/08/16	15:45		S	CONC
23	LCS16A27KE4 DF100	Y16FEB	DAILY2	02/08/16	15:50		S	CONC
24	588049F DF100	Y16FEB	DAILY2	02/08/16	15:55		S	CONC
25	588556F DF100	Y16FEB	DAILY2	02/08/16	16:00		S	CONC
26	588556FD DF100	Y16FEB	DAILY2	02/08/16	16:06		S	CONC
27	588556FL DF500	Y16FEB	DAILY2	02/08/16	16:11		S	CONC
*28	588556FAS DF100	Y16FEB	DAILY2	02/08/16	16:17		S	CONC
29	590212F DF100	Y16FEB	DAILY2	02/08/16	16:22		S	CONC
30	590213F DF100	Y16FEB	DAILY2	02/08/16	16:27		S	CONC
31	CCV	Y16FEB	DAILY2	02/08/16	16:32		S	CONC
32	CCB	Y16FEB	DAILY2	02/08/16	16:37		S	CONC
33	590214F DF100	Y16FEB	DAILY2	02/08/16	16:43		S	CONC
34	591000F DF100	Y16FEB	DAILY2	02/08/16	16:48		S	CONC
35	CRI	Y16FEB	DAILY2	02/08/16	16:53		S	CONC
36	CRI-N	Y16FEB	DAILY2	02/08/16	16:58		S	CONC
37	ICSA	Y16FEB	DAILY2	02/08/16	17:03		S	CONC
38	ICSAB	Y16FEB	DAILY2	02/08/16	17:08		S	CONC
39	CCV	Y16FEB	DAILY2	02/08/16	17:13		S	CONC
40	CCB	Y16FEB	DAILY2	02/08/16	17:18		S	CONC
41	PB16A27KE2 DF10	Y16FEB	DAILY2	02/08/16	17:23		S	CONC
42	LCS16A27KE3 DF10	Y16FEB	DAILY2	02/08/16	17:28		S	CONC
43	LCS16A27KE4 DF10	Y16FEB	DAILY2	02/08/16	17:34		S	CONC
44	588049F DF10	Y16FEB	DAILY2	02/08/16	17:39		S	CONC
45	588556F DF10	Y16FEB	DAILY2	02/08/16	17:44		S	CONC
46	588556FD DF10	Y16FEB	DAILY2	02/08/16	17:49		S	CONC
47	588556FL DF50	Y16FEB	DAILY2	02/08/16	17:54		S	CONC
*48	588556FAS DF10	Y16FEB	DAILY2	02/08/16	17:59		S	CONC
49	590212F DF10	Y16FEB	DAILY2	02/08/16	18:04		S	CONC
50	590213F DF10	Y16FEB	DAILY2	02/08/16	18:09		S	CONC
51	CCV	Y16FEB	DAILY2	02/08/16	18:14		S	CONC
52	CCB	Y16FEB	DAILY2	02/08/16	18:20		S	CONC
53	590214F DF10	Y16FEB	DAILY2	02/08/16	18:25		S	CONC

#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
54	591000F DF10	Y16FEB	DAILY2	02/08/16	18:30		S	CONC
55	CRI	Y16FEB	DAILY2	02/08/16	18:35		S	CONC
56	CRI-N	Y16FEB	DAILY2	02/08/16	18:40		S	CONC
57	ICSA	Y16FEB	DAILY2	02/08/16	18:45		S	CONC
58	ICSAB	Y16FEB	DAILY2	02/08/16	18:50		S	CONC
59	CCV	Y16FEB	DAILY2	02/08/16	19:00		S	CONC
60	CCB	Y16FEB	DAILY2	02/08/16	19:00		S	CONC

*Spiked 50 ml Spike I (#160136)
20 ml ICAL I (#58932)
IN 5ml F.V.

2/9/16

2/9/16

010663

Method: DAILY2 Standard: blk
Run Time: 02/08/16 13:49:58

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Avge	.0000	.0004	.0000	.0004	.0000	.0004	.0000
SDev	.0000	.0000	.0000	.0000	.0000	.0000	.0000
%RSD	99.65	.5754	5.733	2.112	1976.	2.773	13.11
#1	.0000	.0004	.0000	.0004	.0000	.0004	.0000
#2	.0000	.0004	.0000	.0004	-.0000	.0004	.0000

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Avge	.0000	-.0000	.0000	-.0000	.0002	-.0001	-.0001
SDev	.0000	.0000	.0000	.0001	.0000	.0000	.0001
%RSD	43.06	62.29	211.3	500.2	13.09	52.88	141.4
#1	.0000	-.0000	.0000	-.0001	.0002	-.0001	-.0001
#2	.0000	-.0000	-.0000	.0000	.0002	-.0000	.0000

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Avge	-.0001	-.0000	.0000	.0000	-.0000	-.0002	-.0389
SDev	.0001	.0001	.0000	.0000	.0000	.0001	.0010
%RSD	165.2	122.9	61.66	221.2	342.8	45.25	2.501
#1	-.0002	-.0001	.0000	.0000	.0000	-.0003	-.0396
#2	.0000	-.0000	.0000	-.0000	-.0000	-.0001	-.0383

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Avge	.0000	.0001	.0000	.0001	-.0001	-.0011	145.0
SDev	.0000	.0000	.0000	.0001	.0000	.0000	1.0
%RSD	134.4	35.43	84.41	44.47	43.25	.3669	.6877
#1	.0000	.0001	.0000	.0002	-.0001	-.0011	144.3
#2	.0000	.0000	.0001	.0001	-.0000	-.0011	145.7

Elem	1960/1	1960/2	Si2881	Sn1899	Sr4215	Th2837	Ti3349
Avge	-.0000	.0000	.0047	.0000	.0000	.0001	.0000
SDev	.0000	.0000	.0000	.0000	.0000	.0000	.0001
%RSD	73.68	14.09	.7791	.6964	197.3	57.34	388.8
#1	-.0000	.0000	.0047	.0000	.0000	.0001	.0001
#2	-.0001	.0000	.0047	.0000	-.0000	.0000	-.0000

Elem	Tl1908	U_4090	V_2924	W_2079	Y_3710	Zn2062	Zr3496
Avge	-.0000	-.0006	-.0000	.0002	.0000	.0000	-.0000
SDev	.0000	.0005	.0000	.0000	.0000	.0000	.0002
%RSD	287.4	75.11	78.08	11.34	106.4	90.41	7171.
#1	-.0000	-.0010	-.0000	.0002	.0000	.0000	-.0002
#2	.0000	-.0003	-.0000	.0002	.0000	.0000	.0002

2/9/16

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1449668	10000	--	--	--	--	--
SDev	10095.36	.0000000	--	--	--	--	--
%RSD	.6963912	.0000000	--	--	--	--	--
#1	1442530	10000	--	--	--	--	--
#2	1456807	10000	--	--	--	--	--

Method: DAILY2 Standard: clp_std4
Run Time: 02/08/16 13:55:16

Elem	Ag3280	2203/1	2203/2	Sb2068	1960/1	1960/2	Tl1908
Avge	.0748	.2416	.2428	.0705	.0968	.0957	.0912
SDev	.0000	.0010	.0010	.0001	.0005	.0005	.0001
%RSD	.0098	.4242	.4072	.1228	.5260	.5503	.1244
#1	.0748	.2423	.2434	.0705	.0972	.0953	.0911
#2	.0748	.2409	.2421	.0704	.0964	.0961	.0913

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1490410	10000	--	--	--	--	--
SDev	12536.30	.0000000	--	--	--	--	--
%RSD	.8411310	.0000000	--	--	--	--	--
#1	1481545	10000	--	--	--	--	--
#2	1499274	10000	--	--	--	--	--

Method: DAILY2 Standard: clp_std1
Run Time: 02/08/16 13:59:28

Elem	Al3082	Ca3179	Fe2714	K_7664	Li6707	Mg2790	Na3302
Avge	.0876	.2779	.0994	.2277	5.025	.1238	.0107
SDev	.0001	.0030	.0009	.0010	.059	.0006	.0000
%RSD	.0791	1.065	.8875	.4241	1.178	.4407	.0205
#1	.0877	.2800	.1000	.2283	5.066	.1242	.0107
#2	.0876	.2758	.0988	.2270	4.983	.1234	.0107

Elem	Na5889
Avge	5.446
SDev	.054
%RSD	.9960
#1	5.484
#2	5.407

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1447602	10000	--	--	--	--	--
SDev	14866.92	.0000000	--	--	--	--	--
%RSD	1.027003	.0000000	--	--	--	--	--
#1	1437090	10000	--	--	--	--	--
#2	1458115	10000	--	--	--	--	--

Method: DAILY2 Standard: clp_std3
Run Time: 02/08/16 14:03:42

Elem	As1890	Cd2265	Co2286	Mn2576	V_2924	Zn2062
Avge	.0470	.8889	.1559	.7370	.1775	.2537
SDev	.0001	.0013	.0001	.0005	.0001	.0002
%RSD	.1611	.1423	.0295	.0659	.0753	.0915
#1	.0469	.8880	.1558	.7374	.1776	.2539
#2	.0470	.8898	.1559	.7367	.1774	.2536

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1511346	10000	--	--	--	--	--
SDev	387.4945	.0000000	--	--	--	--	--
%RSD	.0256390	.0000000	--	--	--	--	--
#1	1511620	10000	--	--	--	--	--
#2	1511072	10000	--	--	--	--	--

Method: DAILY2 Standard: clp_std5
Run Time: 02/08/16 14:07:33

Elem	B_2496	Bi2230	Mo2020	Si2881	Sn1899	Sr4215	Ti3349
Avge	.1283	.0178	.1815	.1809	.0972	2.286	2.778
SDev	.0010	.0001	.0001	.0002	.0002	.001	.005
%RSD	.8205	.3018	.0340	.1007	.1642	.0304	.1648
#1	.1276	.0178	.1815	.1808	.0971	2.287	2.775
#2	.1291	.0179	.1816	.1811	.0973	2.286	2.781

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1479280	10000	--	--	--	--	--
SDev	9538.163	.0000000	--	--	--	--	--
%RSD	.6447844	.0000000	--	--	--	--	--
#1	1472535	10000	--	--	--	--	--
#2	1486024	10000	--	--	--	--	--

Method: DAILY2 Standard: clp_std2
Run Time: 02/08/16 14:11:46

Elem	Ba4934	Be3130	Cr2677	Cu3247	Ni2316
Avge	1.122	.3528	.4201	.2476	.2824
SDev	.001	.0002	.0004	.0002	.0005
%RSD	.0495	.0669	.0889	.0862	.1816
#1	1.121	.3526	.4203	.2478	.2820
#2	1.122	.3530	.4198	.2475	.2827

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1479006	10000	--	--	--	--	--
SDev	3618.972	.0000000	--	--	--	--	--
%RSD	.2446895	.0000000	--	--	--	--	--
#1	1476447	10000	--	--	--	--	--
#2	1481565	10000	--	--	--	--	--

Method: DAILY2 Standard: clp_std6
Run Time: 02/08/16 14:15:38

Elem	La3988	Pd3404	S_1820	Th2837	U_4090	W_2079	Y_3710
Avge	.4202	.2052	.0081	.0929	.0618	.0795	.6580
SDev	.0004	.0003	.0001	.0000	.0008	.0000	.0010
%RSD	.0845	.1420	.7178	.0299	1.274	.0277	.1601
#1	.4204	.2054	.0081	.0929	.0613	.0795	.6588
#2	.4199	.2050	.0080	.0929	.0624	.0795	.6573

Elem	Zr3496
Avge	2.051
SDev	.008
%RSD	.4021
#1	2.056
#2	2.045

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1538104	10000	--	--	--	--	--
SDev	4288.602	.0000000	--	--	--	--	--
%RSD	.2788239	.0000000	--	--	--	--	--
#1	1535072	10000	--	--	--	--	--
#2	1541137	10000	--	--	--	--	--

Standardization Report 02/08/16 02:19:58 PM

Method: DAILY2 Slope = Conc(SIR)/IR

Element	Wavelen	High std	Low std	Slope	Y-intercept	Date Standardized
Ag3280	328.068	clp_std4	blk	26.7549	-.000435	02/08/16 02:15:38
Al3082	308.215	clp_std1	blk	573.386	-.231191	02/08/16 02:15:38
As1890	189.042	clp_std3	blk	213.106	-.009700	02/08/16 02:15:38
B_2496	249.678	clp_std5	blk	78.1472	-.029862	02/08/16 02:15:38
Ba4934	493.409	clp_std2	blk	8.91565	-.000010	02/08/16 02:15:38
Be3130	313.042	clp_std2	blk	2.83746	-.001037	02/08/16 02:15:38
Bi2230	223.061	clp_std5	blk	278.688	-.007878	02/08/16 02:15:38
Ca3179	317.933	clp_std1	blk	179.908	-.002486	02/08/16 02:15:38
Cd2265	226.502	clp_std3	blk	11.2470	.000070	02/08/16 02:15:38
Co2286	228.616	clp_std3	blk	64.1645	-.000178	02/08/16 02:15:38
Cr2677	267.716	clp_std2	blk	23.8057	.000309	02/08/16 02:15:38
Cu3247	324.753	clp_std2	blk	40.4097	-.007000	02/08/16 02:15:38
Fe2714	271.441	clp_std1	blk	502.643	.028658	02/08/16 02:15:38
K_7664	766.491	clp_std1	blk	219.573	.011340	02/08/16 02:15:38
La3988	398.853	clp_std6	blk	23.8097	.001751	02/08/16 02:15:38
Li6707	670.784	clp_std1	blk	1.99021	.000083	02/08/16 02:15:38
Mg2790	279.078	clp_std1	blk	201.862	-.001737	02/08/16 02:15:38
Mn2576	257.610	clp_std3	blk	13.5669	-.000066	02/08/16 02:15:38
Mo2020	202.030	clp_std5	blk	55.0854	.000188	02/08/16 02:15:38
Na3302	330.232	clp_std1	blk	4574.23	.886476	02/08/16 02:15:38
Na5889	588.991	clp_std1	blk	9.11583	.354991	02/08/16 02:15:38
Ni2316	231.604	clp_std2	blk	35.4157	-.000491	02/08/16 02:15:38
2203/1	220.353	clp_std4	blk	41.4051	-.002617	02/08/16 02:15:38
2203/2	220.354	clp_std4	blk	41.1670	-.001416	02/08/16 02:15:38
Pd3404	340.458	clp_std6	blk	49.8940	-.007394	02/08/16 02:15:38
S_1820	182.040	clp_std6	blk	1233.30	.062198	02/08/16 02:15:38
Sb2068	206.838	clp_std4	blk	139.715	.153816	02/08/16 02:15:38
Sc3613	361.384	blk	dark	.690363	-.087434	02/08/16 02:15:38
1960/1	196.026	clp_std4	blk	103.267	.004334	02/08/16 02:15:38
1960/2	196.027	clp_std4	blk	104.517	-.003426	02/08/16 02:15:38
Si2881	288.158	clp_std5	blk	56.6003	-.266988	02/08/16 02:15:38
Pb220	220.355	NONE	NONE	1.00000	.000000	*NOT STANDARDIZED
Se196	196.028	STD7	STD1-Blank	1.00000	.000000	*NOT STANDARDIZED
Sn1899	189.989	clp_std5	blk	103.140	-.002490	02/08/16 02:15:38
Sr4215	421.552	clp_std5	blk	4.37370	-.000015	02/08/16 02:15:38
Th2837	283.730	clp_std6	blk	112.420	-.005711	02/08/16 02:15:38
Ti3349	334.941	clp_std5	blk	3.59993	-.000069	02/08/16 02:15:38
Tl1908	190.864	clp_std4	blk	109.630	.000802	02/08/16 02:15:38
U_4090	409.014	clp_std6	blk	175.365	.111159	02/08/16 02:15:38
V_2924	292.402	clp_std3	blk	56.3265	.001569	02/08/16 02:15:38
W_2079	207.914	clp_std6	blk	63.0400	-.012258	02/08/16 02:15:38
Y_3710	371.030	clp_std6	blk	15.1963	-.000210	02/08/16 02:15:38
Zn2062	206.200	clp_std3	blk	39.4164	-.000150	02/08/16 02:15:38
Zr3496	349.621	clp_std6	blk	5.19846	.000017	02/08/16 02:15:38

Method: DAILY2

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Ag3280	328.068	blk	.000000	-.000000	.000000
		clp_std4	2.00000	2.00000	.000000
Al3082	308.215	blk	.000000	.000000	-.000000
		clp_std1	50.0000	50.0000	.000000
As1890	189.042	blk	.000000	-.000000	.000000
		clp_std3	10.0000	10.0002	-.000164
B_2496	249.678	blk	.000000	-.000000	.000000
		clp_std5	10.0000	9.99887	.001130
Ba4934	493.409	blk	.000000	.000000	-.000000
		clp_std2	10.0000	10.0000	.000000
Be3130	313.042	blk	.000000	.000000	-.000000
		clp_std2	1.00000	1.00000	.000000
Bi2230	223.061	blk	.000000	-.000000	.000000
		clp_std5	5.00000	4.95974	.040256
Ca3179	317.933	blk	.000000	-.000000	.000000
		clp_std1	50.0000	50.0000	.000000
Cd2265	226.502	blk	.000000	.000000	-.000000
		clp_std3	10.0000	9.99710	.002900
Co2286	228.616	blk	.000000	.000000	-.000000
		clp_std3	10.0000	10.0003	-.000299
Cr2677	267.716	blk	.000000	.000000	-.000000
		clp_std2	10.0000	10.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Cu3247	324.753	blk	.000000	.000000	-.000000
		clp_std2	10.0000	10.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Fe2714	271.441	blk	.000000	.000000	-.000000
		clp_std1	50.0000	50.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
K_7664	766.491	blk	.000000	-.000000	.000000
		clp_std1	50.0000	50.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
La3988	398.853	blk	.000000	-.000000	.000000
		clp_std6	10.0000	10.0059	-.005869

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Li6707	670.784	blk	.000000	.000000	-.000000
		clp_std1	10.0000	10.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Mg2790	279.078	blk	.000000	.000000	-.000000
		clp_std1	25.0000	24.9893	.010700

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Mn2576	257.610	blk	.000000	.000000	-.000000
		clp_std3	10.0000	9.99911	.000890

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Mo2020	202.030	blk	.000000	-.000000	.000000
		clp_std5	10.0000	10.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Na3302	330.232	blk	.000000	-.000000	.000000
		clp_std1	50.0000	49.9482	.051800

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Na5889	588.991	blk	.000000	-.000000	.000000
		clp_std1	50.0000	49.9955	.004452

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Ni2316	231.604	blk	.000000	-.000000	.000000
		clp_std2	10.0000	10.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
2203/1	220.353	blk	.000000	.000000	-.000000
		clp_std4	10.0000	10.0000	.000000
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
2203/2	220.354	blk	.000000	-.000000	.000000
		clp_std4	10.0000	9.99190	.008100
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Pd3404	340.458	blk	.000000	.000000	-.000000
		clp_std6	10.0000	10.2320	-.231961
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
S_1820	182.040	blk	.000000	.000000	-.000000
		clp_std6	10.0000	10.0070	-.007010
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Sb2068	206.838	blk	.000000	-.000000	.000000
		clp_std4	10.0000	10.0000	-.000001
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Sc3613	361.384	dark	.000000	-.000000	.000000
		blk	100.000	100.000	.000000
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
1960/1	196.026	blk	.000000	-.000000	.000000
		clp_std4	10.0000	10.0000	.000000
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
1960/2	196.027	blk	.000000	-.000000	.000000
		clp_std4	10.0000	10.0000	.000000
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Si2881	288.158	blk	.000000	-.000000	.000000
		clp_std5	10.0000	9.97467	.025331
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Pb220	220.355	NONE	.000000	.000000	.000000
		NONE	.000000	.000000	.000000
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Se196	196.028	STD1-Blank	.000000	.000000	.000000
		STD7	10.0000	.000000	10.0000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Sn1899	189.989	blk	.000000	.000000	-.000000
		clp_std5	10.0000	10.0221	-.022082

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Sr4215	421.552	blk	.000000	-.000000	.000000
		clp_std5	10.0000	10.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Th2837	283.730	blk	.000000	-.000000	.000000
		clp_std6	10.0000	10.4397	-.439739

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Ti3349	334.941	blk	.000000	.000000	-.000000
		clp_std5	10.0000	10.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Tl1908	190.864	blk	.000000	-.000000	.000000
		clp_std4	10.0000	9.99862	.001380

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
U_4090	409.014	blk	.000000	-.000000	.000000
		clp_std6	10.0000	10.9555	-.955464

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
V_2924	292.402	blk	.000000	-.000000	.000000
		clp_std3	10.0000	9.99981	.000190

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
W_2079	207.914	blk	.000000	-.000000	.000000
		clp_std6	5.00000	4.99842	.001580

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Y_3710	371.030	blk	.000000	-.000000	.000000
		clp_std6	10.0000	9.99947	.000530

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Zn2062	206.200	blk	.000000	.000000	-.000000
		clp_std3	10.0000	10.0005	-.000463

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Zr3496	349.621	blk	.000000	.000000	-.000000
		clp_std6	10.0000	10.6595	-.659513

Analysis Report 02/08/16 02:25:16 PM

Method: DAILY2 Sample Name: ICV Operator:
Run Time: 02/08/16 14:20:13
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.040	10.30	5.257	5.118	10.07	1.017	4.931
SDev	.001	.01	.019	.043	.00	.002	.008
%RSD	.1237	.1093	.3685	.8436	.0355	.1843	.1561
#1	1.041	10.29	5.244	5.087	10.07	1.016	4.926
#2	1.039	10.31	5.271	5.148	10.08	1.019	4.937
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.100	11.00	5.500	5.500	11.00	1.100	5.500
Low	.9000	9.000	4.500	4.500	9.000	.9000	4.500

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.57	1.033	5.064	1.989	2.023	10.04	19.59
SDev	.14	.001	.009	.002	.002	.02	.00
%RSD	.6727	.1229	.1797	.0814	.1013	.1500	.0013
#1	20.67	1.034	5.071	1.990	2.022	10.05	19.59
#2	20.47	1.032	5.058	1.987	2.025	10.03	19.59
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.00	1.100	5.500	2.200	2.200	11.00	22.00
Low	18.00	.9000	4.500	1.800	1.800	9.000	18.00

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.022	5.235	20.61	1.009	4.902	29.20	29.89
SDev	.006	.031	.06	.002	.000	.42	.18
%RSD	.1126	.5903	.3151	.1949	.0069	1.435	.5904
#1	5.018	5.257	20.65	1.010	4.901	28.91	30.01
#2	5.026	5.213	20.56	1.008	4.902	29.50	29.77
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.500	5.500	22.00	1.100	5.500	33.00	33.00
Low	4.500	4.500	18.00	.9000	4.500	27.00	27.00

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	4.969	4.971	4.961	.9700	1.017	1.010	101.3
SDev	.005	.007	.025	.0052	.008	.001	.6
%RSD	.0986	.1350	.5096	.5315	.8335	.0781	.5722
#1	4.973	4.967	4.979	.9736	1.023	1.010	100.9
#2	4.966	4.976	4.944	.9663	1.011	1.011	101.7
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	5.500			1.100	1.100	1.100	
Low	4.500			.9000	.9000	.9000	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

010677

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.234	5.253	4.722	4.960	5.241	4.983	4.949
SDev	.006	.001	.002	.015	.001	.001	.007
%RSD	.1137	.0154	.0321	.2944	.0275	.0210	.1360
#1	5.230	5.253	4.724	4.970	5.240	4.983	4.954
#2	5.238	5.252	4.721	4.949	5.242	4.984	4.945
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			5.500	5.500	5.500	5.500	5.500
Low			4.500	4.500	4.500	4.500	4.500

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.017	4.787	5.164	4.852	5.089	H1.103	5.053
SDev	.006	.003	.002	.102	.000	.000	.009
%RSD	.5435	.0566	.0454	2.100	.0056	.0021	.1813
#1	1.021	4.785	5.162	4.780	5.089	H1.103	5.059
#2	1.013	4.789	5.165	4.924	5.089	H1.103	5.047
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	1.100	5.500	5.500	5.500	5.500	1.100	5.500
Low	.9000	4.500	4.500	4.500	4.500	.9000	4.500

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	1.042	4.873
SDev	.002	.037
%RSD	.1476	.7625
#1	1.043	4.899
#2	1.041	4.847
Errors	LC Pass	LC Pass
High	1.100	5.500
Low	.9000	4.500

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1468146	10000	--	--	--	--	--
SDev	8400.429	.0000000	--	--	--	--	--
%RSD	.5721794	.0000000	--	--	--	--	--
#1	1462206	10000	--	--	--	--	--
#2	1474086	10000	--	--	--	--	--

Method: DAILY2 Sample Name: ICB Operator:
Run Time: 02/08/16 14:25:31
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0006	-.0089	-.0047	.0406	.0004	-.0000	-.0093
SDev	.0009	.0053	.0011	.0077	.0000	.0000	.0015
%RSD	162.1	59.31	23.97	19.06	11.33	172.2	16.06
#1	-.0012	-.0126	L-.0055	.0461	.0004	-.0000	L-.0103
#2	.0001	-.0052	-.0039	.0351	.0003	.0000	-.0082
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0050	.0500	.0050	.0500	.0050	.0050	.0100
Low	-.0050	-.0500	-.0050	-.0500	-.0050	-.0050	-.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0032	-.0000	-.0000	-.0006	.0005	.0083	-.0017
SDev	.0003	.0003	.0006	.0016	.0004	.0321	.0348
%RSD	8.889	1641.	7239.	244.0	94.12	386.4	2014.
#1	.0030	.0002	-.0004	-.0018	.0008	-.0144	-.0263
#2	.0034	-.0002	.0004	.0005	.0002	.0310	.0229
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0500	.0050	.0050	.0050	.0050	.0500	.1000
Low	-.0500	-.0050	-.0050	-.0050	-.0050	-.0500	-.1000

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0009	.0001	-.0018	.0002	.0007	L-.0537	.0096
SDev	.0027	.0001	.0015	.0001	.0009	.3907	.0091
%RSD	307.6	87.20	81.94	30.52	127.2	727.9	94.61
#1	-.0028	.0000	-.0028	.0002	.0014	L-.3300	.0032
#2	.0010	.0002	-.0008	.0001	.0001	H.2226	.0161
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass
High	.0050	.0050	.0500	.0050	.0050	.0500	.0500
Low	-.0050	-.0050	-.0500	-.0050	-.0050	-.0500	-.0500

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0008	.0003	-.0020	-.0021	.0053	.0018	102.4
SDev	.0007	.0029	.0025	.0075	.0169	.0005	.3
%RSD	90.91	1032.	126.3	351.3	317.8	25.36	.2943
#1	-.0003	.0024	-.0002	L-.0074	.0173	.0015	102.2
#2	-.0014	-.0018	-.0037	.0032	-.0066	.0021	102.6
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	.0050			.0050	.0200	.0100	
Low	-.0050			-.0050	-.0200	-.0100	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0078	-.0012	-.0009	-.0012	.0018	.0003	.0001
SDev	.0057	.0009	.0013	.0026	.0025	.0008	.0000
%RSD	74.11	81.04	149.7	219.0	140.0	233.6	10.99
#1	.0037	-.0018	-.0018	.0007	.0000	.0009	.0001
#2	.0118	-.0005	.0001	-.0031	.0036	-.0002	.0001
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			.0100	.0050	.0050	.0100	.0050
Low			-.0100	-.0050	-.0050	-.0100	-.0050

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0012	.0003	-.0037	-.0033	.0006	.0051	.0002
SDev	.0068	.0001	.0036	.0807	.0004	.0007	.0002
%RSD	570.1	32.74	99.19	2432.	69.92	13.59	110.8
#1	.0036	.0004	-.0062	-.0604	.0008	.0056	.0003
#2	-.0060	.0002	-.0011	.0537	.0003	.0047	.0000
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0100	.0050	.0100	.1000	.0050	.0100	.0050
Low	-.0100	-.0050	-.0100	-.1000	-.0050	-.0100	-.0050

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0001	-.0001
SDev	.0001	.0014
%RSD	79.58	2302.
#1	.0001	-.0010
#2	.0002	.0009
Errors	LC Pass	LC Pass
High	.0050	.0050
Low	-.0050	-.0050

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1484693	10000	--	--	--	--	--
SDev	4385.476	.0000000	--	--	--	--	--
%RSD	.2953793	.0000000	--	--	--	--	--
#1	1481592	10000	--	--	--	--	--
#2	1487794	10000	--	--	--	--	--

Method: DAILY2 Sample Name: CRI Operator:
Run Time: 02/08/16 14:30:48
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0081	.1122	.0092	H.1117	.0052	.0050	L.0028
SDev	.0013	.0077	.0008	.0032	.0000	.0001	.0089
%RSD	16.16	6.829	8.867	2.828	.1943	1.247	320.7
#1	.0072	.1068	.0086	H.1095	.0052	.0049	L-.0035
#2	.0090	.1176	.0097	H.1140	.0052	.0050	L.0091
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Low
High	.0150	.1500	.0150	.0600	.0075	.0075	.0300
Low	.0050	.0500	.0050	.0200	.0025	.0025	.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1037	.0052	.0038	.0040	.0040	.1233	.2852
SDev	.0014	.0001	.0007	.0033	.0005	.0526	.0563
%RSD	1.342	2.398	19.37	81.63	12.68	42.68	19.73
#1	.1027	.0051	.0033	L.0017	.0044	.0861	L.2454
#2	.1047	.0053	.0043	.0064	.0037	H.1605	.3250
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.1500	.0075	.0075	.0075	.0075	.1500	.7500
Low	.0500	.0025	.0025	.0025	.0025	.0500	.2500

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0082	.0083	.0437	.0050	.0052	.1331	.2437
SDev	.0056	.0002	.0066	.0000	.0005	.6644	.0167
%RSD	68.15	2.834	15.13	.3714	9.044	499.2	6.848
#1	L.0042	.0081	.0391	.0050	.0055	L-.3367	.2319
#2	.0121	.0085	.0484	.0050	.0048	H.6029	.2555
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0150	.0150	.1000	.0075	.0075	.5000	.5000
Low	.0050	.0050	.0250	.0025	.0025	.1250	.1250

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0042	.0029	.0058	.0160	.0628	.0139	103.7
SDev	.0003	.0086	.0014	.0052	.0034	.0170	.1
%RSD	7.877	297.5	24.36	32.71	5.327	122.1	.1015
#1	.0044	-.0032	.0068	.0123	.0604	L.0019	103.7
#2	.0039	.0089	.0048	.0197	.0652	.0259	103.6
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	.0075			.0300	.0750	.0300	
Low	.0025			.0100	.0250	.0100	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

010683

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0082	.0100	H.6258	.0048	.0094	.0112	.0050
SDev	.0065	.0025	.0055	.0019	.0005	.0020	.0001
%RSD	79.44	25.15	.8794	39.77	5.115	18.07	.9514
#1	.0036	.0118	H.6219	.0035	.0091	.0098	.0050
#2	.0128	.0082	H.6297	.0062	.0097	.0126	.0051
Errors	NOCHECK	NOCHECK	LC High	LC Pass	LC Pass	LC Pass	LC Pass
High			.1500	.0075	.0150	.0150	.0075
Low			.0500	.0025	.0050	.0050	.0025

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0187	.0047	.0144	.1334	.0040	.0193	.0050
SDev	.0022	.0002	.0067	.1824	.0002	.0052	.0000
%RSD	11.78	3.854	46.70	136.8	4.516	27.10	.2719
#1	.0203	.0049	L.0097	L.0044	.0042	.0156	.0050
#2	.0172	.0046	.0192	.2624	.0039	.0230	.0050
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0300	.0075	.0300	.3000	.0075	.0300	.0075
Low	.0100	.0025	.0100	.1000	.0025	.0100	.0025

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0051	.0056
SDev	.0001	.0029
%RSD	1.077	52.41
#1	.0052	.0035
#2	.0051	H.0076
Errors	LC Pass	LC Pass
High	.0075	.0075
Low	.0025	.0025

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1502826	10000	--	--	--	--	--
SDev	1550.685	.0000000	--	--	--	--	--
%RSD	.1031847	.0000000	--	--	--	--	--
#1	1503922	10000	--	--	--	--	--
#2	1501729	10000	--	--	--	--	--

Method: DAILY2 Sample Name: CRI-N Operator:
Run Time: 02/08/16 14:36:06
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0187	.2231	.0192	H.1714	.0104	.0100	.0304
SDev	.0004	.0056	.0020	.0012	.0000	.0000	.0025
%RSD	2.359	2.528	10.57	.7074	.3905	.1956	8.238
#1	.0184	.2191	.0177	H.1706	.0104	.0100	.0286
#2	.0191	.2271	.0206	H.1723	.0104	.0100	.0321
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass
High	.0260	.2600	.0260	.1040	.0130	.0130	.0520
Low	.0140	.1400	.0140	.0560	.0070	.0070	.0280

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2073	.0104	.0092	.0092	.0098	.2117	L.6067
SDev	.0009	.0002	.0002	.0011	.0001	.0318	.0216
%RSD	.4534	1.670	2.346	12.14	.9286	15.01	3.569
#1	.2080	.0105	.0091	.0084	.0099	.1892	L.5914
#2	.2066	.0103	.0094	.0099	.0098	.2341	L.6220
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low
High	.2600	.0130	.0130	.0130	.0130	.2600	1.300
Low	.1400	.0070	.0070	.0070	.0070	.1400	.7000

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0186	.0175	.1008	.0102	.0106	.3752	.4680
SDev	.0020	.0001	.0024	.0000	.0002	.2757	.0084
%RSD	10.93	.4408	2.384	.1298	1.544	73.49	1.788
#1	.0171	.0175	.1025	.0102	.0107	L.1802	.4621
#2	.0200	.0174	.0991	.0102	.0105	.5701	.4739
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0260	.0260	.1300	.0130	.0130	.6500	.6500
Low	.0140	.0140	.0700	.0070	.0070	.3500	.3500

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0095	.0113	.0058	.0363	.0930	.0431	103.4
SDev	.0003	.0001	.0000	.0066	.0137	.0037	.8
%RSD	3.030	1.315	.5102	18.29	14.69	8.649	.8007
#1	.0097	.0112	.0059	.0316	.0833	.0458	102.8
#2	.0093	.0114	.0058	.0410	.1027	.0405	104.0
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	.0130			.0520	.1300	.0520	
Low	.0070			.0280	.0700	.0280	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0282	.0193	H.9052	.0077	.0222	.0201	.0101
SDev	.0008	.0016	.0027	.0000	.0014	.0012	.0000
%RSD	2.889	8.448	.2936	.3861	6.099	6.062	.2076
#1	.0288	.0204	H.9033	.0076	.0232	.0192	.0101
#2	.0276	.0181	H.9071	.0077	.0213	.0210	.0101
Errors	NOCHECK	NOCHECK	LC High	LC Pass	LC Pass	LC Pass	LC Pass
High			.2600	.0130	.0260	.0260	.0130
Low			.1400	.0070	.0140	.0140	.0070

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0421	.0097	.0361	.3645	.0096	.0462	.0102
SDev	.0011	.0000	.0065	.0741	.0008	.0038	.0000
%RSD	2.696	.2810	18.05	20.32	8.043	8.273	.1368
#1	.0429	.0097	.0315	.3121	.0102	.0435	.0102
#2	.0413	.0097	.0407	.4168	.0091	.0489	.0102
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0520	.0130	.0520	.5200	.0130	.0520	.0130
Low	.0280	.0070	.0280	.2800	.0070	.0280	.0070

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0104	.0103
SDev	.0001	.0019
%RSD	.6921	18.07
#1	.0103	.0090
#2	.0104	.0116
Errors	LC Pass	LC Pass
High	.0130	.0130
Low	.0070	.0070

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1499092	10000	--	--	--	--	--
SDev	11976.98	.0000000	--	--	--	--	--
%RSD	.7989486	.0000000	--	--	--	--	--
#1	1490623	10000	--	--	--	--	--
#2	1507561	10000	--	--	--	--	--

Method: DAILY2 Sample Name: ICSA Operator:
Run Time: 02/08/16 14:41:23
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0029	480.6	-.0075	.1494	.0028	.0000	.0118
SDev	.0001	.4	.0015	.0240	.0000	.0000	.0033
%RSD	4.092	.0871	19.67	16.04	.7047	138.1	27.99
#1	-.0029	480.9	-.0064	.1664	.0028	.0000	.0095
#2	-.0028	480.3	-.0085	.1325	.0028	.0001	.0142
Errors	NOCHECK	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High		600.0					
Low		400.0					

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	456.3	-.0005	-.0038	-.0004	-.0030	195.4	-.0063
SDev	1.5	.0001	.0009	.0025	.0009	.6	.0654
%RSD	.3383	22.16	22.71	583.7	30.37	.3225	1039.
#1	457.4	-.0005	-.0044	-.0022	-.0024	195.8	-.0526
#2	455.2	-.0004	-.0032	.0013	-.0037	195.0	.0400
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	NOCHECK
High	600.0					240.0	
Low	400.0					160.0	

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0021	.0016	533.2	.0223	-.0009	.2177	.1308
SDev	.0034	.0001	.5	.0001	.0010	.6812	.0153
%RSD	160.0	8.602	.0985	.6237	108.8	312.9	11.69
#1	-.0046	.0015	533.5	.0222	-.0002	-.2640	.1200
#2	.0003	.0017	532.8	.0224	-.0016	.6994	.1416
Errors	NOCHECK	NOCHECK	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High			600.0				
Low			400.0				

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0030	.0975	-.0460	.1068	-.0462	-.0015	93.88
SDev	.0018	.0051	.0031	.0003	.0143	.0220	.31
%RSD	59.86	5.188	6.625	.3258	30.89	1474.	.3348
#1	-.0017	.1011	-.0482	.1065	-.0563	.0141	94.11
#2	-.0042	.0939	-.0439	.1070	-.0361	-.0171	93.66
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0004	-.0035	.7527	.0018	-.0022	-.0053	.0037
SDev	.0195	.0016	.0018	.0003	.0075	.0055	.0000
%RSD	4425.	44.00	.2428	19.02	341.9	104.3	.9666
#1	.0143	-.0024	.7540	.0016	.0031	-.0091	.0037
#2	-.0134	-.0046	.7514	.0021	-.0075	-.0014	.0037
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0100	.0028	.0097	.0528	-.0033	.0056	-.0003
SDev	.0076	.0001	.0123	.1522	.0004	.0056	.0001
%RSD	76.24	2.692	126.5	288.0	11.26	98.94	33.97
#1	.0153	.0028	.0010	-.0548	-.0030	.0096	-.0004
#2	.0046	.0027	.0183	.1604	-.0036	.0017	-.0002
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	-.0056	-.0004
SDev	.0005	.0025
%RSD	8.479	597.0
#1	-.0053	-.0022
#2	-.0060	.0013
Errors	NOCHECK	NOCHECK
High		
Low		

010690

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1361054	10000	--	--	--	--	--
SDev	4616.700	.0000000	--	--	--	--	--
%RSD	.3392002	.0000000	--	--	--	--	--
#1	1364319	10000	--	--	--	--	--
#2	1357790	10000	--	--	--	--	--

Method: DAILY2 Sample Name: ICSAB Operator:
Run Time: 02/08/16 14:46:40
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.074	476.5	1.056	1.118	.5225	.5056	.0142
SDev	.002	.3	.004	.002	.0002	.0008	.0032
%RSD	.1395	.0674	.3370	.1383	.0419	.1657	22.51
#1	1.073	476.3	1.058	1.119	.5226	.5050	.0120
#2	1.075	476.7	1.053	1.117	.5223	.5061	.0165
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK
High	1.200	600.0	1.200	1.200	.6000	.6000	
Low	.8000	400.0	.8000	.8000	.4000	.4000	

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	453.1	.9920	.4863	.4861	.5301	193.6	-.0012
SDev	1.8	.0020	.0005	.0028	.0016	1.0	.0700
%RSD	.3903	.2019	.1035	.5826	.3105	.4990	5950.
#1	451.8	.9906	.4860	.4841	.5290	192.9	-.0507
#2	454.3	.9935	.4867	.4882	.5313	194.3	.0483
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK
High	600.0	1.200	.6000	.6000	.6000	240.0	
Low	400.0	.8000	.4000	.4000	.4000	160.0	

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0019	1.160	529.0	.5171	1.034	.1866	.0911
SDev	.0045	.001	.8	.0003	.004	.7667	.0173
%RSD	241.4	.0782	.1573	.0589	.3631	410.9	18.95
#1	-.0051	1.159	528.4	.5169	1.032	-.3556	.0789
#2	.0013	1.160	529.6	.5173	1.037	.7288	.1033
Errors	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK	NOCHECK
High		1.200	600.0	.6000	1.200		
Low		.8000	400.0	.4000	.8000		

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.9659	1.076	.9276	.1055	-.0572	1.062	93.25
SDev	.0004	.007	.0060	.0018	.0056	.009	.22
%RSD	.0467	.6652	.6511	1.685	9.715	.8025	.2334
#1	.9662	1.071	.9233	.1068	-.0533	1.068	93.40
#2	.9656	1.081	.9319	.1043	-.0612	1.056	93.10
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	NOCHECK
High	1.200					1.200	
Low	.8000					.8000	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.049	1.031	1.338	.9761	1.036	.9909	1.019
SDev	.007	.005	.002	.0064	.006	.0004	.001
%RSD	.6478	.5283	.1174	.6563	.5686	.0359	.1168
#1	1.044	1.027	1.337	.9715	1.032	.9911	1.019
#2	1.054	1.035	1.339	.9806	1.040	.9906	1.018
Errors	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass
High				1.200	1.200	1.200	1.200
Low				.8000	.8000	.8000	.8000

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0115	.9524	.9884	1.010	.5013	.0083	-.0001
SDev	.0039	.0001	.0024	.193	.0018	.0024	.0001
%RSD	34.05	.0091	.2460	19.12	.3516	28.97	135.9
#1	.0142	.9523	.9901	.8736	.5001	.0099	-.0002
#2	.0087	.9524	.9867	1.147	.5026	.0066	-.0000
Errors	NOCHECK	LC Pass	LC Pass	NOCHECK	LC Pass	NOCHECK	NOCHECK
High		1.200	1.200		.6000		
Low		.8000	.8000		.4000		

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.9858	.9307
SDev	.0017	.0072
%RSD	.1770	.7732
#1	.9845	.9256
#2	.9870	.9358
Errors	LC Pass	NOCHECK
High	1.200	
Low	.8000	

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1351867	10000	--	--	--	--	--
SDev	3146.625	.0000000	--	--	--	--	--
%RSD	.2327614	.0000000	--	--	--	--	--
#1	1354092	10000	--	--	--	--	--
#2	1349642	10000	--	--	--	--	--

Method: DAILY2 Sample Name: UCL1 Operator:
Run Time: 02/08/16 14:51:57
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0043	562.0	-.0288	.1359	.0036	.0007	-.0296
SDev	.0017	.4	.0032	.0710	.0002	.0000	.0059
%RSD	38.49	.0663	11.23	52.26	4.489	2.812	19.98
#1	-.0031	561.7	-.0265	.1861	.0035	.0007	-.0254
#2	-.0055	562.3	-.0311	.0857	.0037	.0007	-.0338

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	229.9	.0023	-.0114	-.0183	.0050	575.2	117.8
SDev	.1	.0001	.0000	.0022	.0015	.2	.4
%RSD	.0367	3.200	.1342	12.28	29.55	.0364	.3449
#1	229.9	.0024	-.0114	-.0199	.0040	575.4	117.5
#2	229.8	.0023	-.0114	-.0167	.0061	575.1	118.1

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.3158	18.97	616.7	.0035	-.0035	276.8	S49.26
SDev	.0044	.01	1.6	.0000	.0004	.6	.01
%RSD	1.396	.0705	.2522	.0611	12.68	.2196	.0112
#1	-.3127	18.96	615.6	.0035	-.0032	276.4	S49.26
#2	-.3189	18.97	617.8	.0035	-.0039	277.3	S49.27

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0160	.1331	-.0500	.4461	-.0818	-.0445	86.63
SDev	.0002	.0007	.0048	.0046	.0040	.0052	.23
%RSD	1.232	.5521	9.603	1.026	4.894	11.66	.2675
#1	-.0162	.1326	-.0534	.4493	-.0790	-.0409	86.80
#2	-.0159	.1336	-.0466	.4428	-.0847	-.0482	86.47

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.2936	-.0097	-.1480	.0110	-.1042	.0083	.0146
SDev	.0102	.0040	.0015	.0034	.0061	.0014	.0001
%RSD	3.480	41.26	.9895	31.17	5.823	16.87	.4150
#1	-.2863	-.0069	-.1470	.0086	-.0999	.0073	.0146
#2	-.3008	-.0125	-.1490	.0135	-.1085	.0092	.0147

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	21.02	-.0369	.0456	.0875	.0051	.0073	-.0030
SDev	.01	.0002	.0117	.2057	.0009	.0094	.0003
%RSD	.0267	.4708	25.52	235.1	18.21	129.1	8.770
#1	21.03	-.0371	.0539	-.0580	.0044	.0139	-.0031
#2	21.02	-.0368	.0374	.2330	.0057	.0006	-.0028

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0941	-.0088
SDev	.0004	.0027
%RSD	.3780	30.54
#1	.0944	-.0107
#2	.0939	-.0069

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1256045	10000	--	--	--	--	--
SDev	3463.409	.0000000	--	--	--	--	--
%RSD	.2757392	.0000000	--	--	--	--	--
#1	1258494	10000	--	--	--	--	--
#2	1253596	10000	--	--	--	--	--

010696

Method: DAILY2 Sample Name: UCL-AL-500PPM Operator:
Run Time: 02/08/16 14:57:14
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0016	476.6	.0118	-.0221	.0005	.0001	-.0085
SDev	.0004	.3	.0030	.0028	.0000	.0000	.0027
%RSD	26.91	.0715	25.71	12.67	2.785	50.06	32.48
#1	-.0019	476.4	.0096	-.0241	.0005	.0001	-.0065
#2	-.0013	476.9	.0139	-.0201	.0005	.0001	-.0104

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0210	-.0020	-.0006	-.0018	.0026	.0212	-.0289
SDev	.0026	.0004	.0006	.0026	.0001	.0558	.0354
%RSD	12.21	19.46	105.8	148.2	4.616	262.9	122.2
#1	.0192	-.0023	-.0010	-.0036	.0027	-.0182	-.0539
#2	.0228	-.0017	-.0001	.0001	.0026	.0606	-.0039

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0020	.0007	.0123	.0041	-.0007	-.2929	-.0383
SDev	.0048	.0000	.0001	.0001	.0006	.6241	.0112
%RSD	237.6	4.176	.6222	2.175	79.91	213.1	29.29
#1	-.0055	.0006	.0124	.0042	-.0003	-.7342	-.0463
#2	.0014	.0007	.0122	.0041	-.0011	.1484	-.0304

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0012	.1185	-.0482	-.0004	-.0489	.0084	91.06
SDev	.0003	.0022	.0050	.0086	.0146	.0018	.18
%RSD	23.08	1.810	10.28	2231.	29.96	21.59	.1961
#1	-.0010	.1170	-.0447	-.0065	-.0592	.0097	90.94
#2	-.0014	.1201	-.0518	.0057	-.0385	.0071	91.19

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0017	-.0039	-.1993	.0074	-.0031	-.0073	-.0001
SDev	.0009	.0024	.0044	.0026	.0019	.0004	.0001
%RSD	53.25	62.50	2.222	35.17	60.99	5.504	83.36
#1	-.0010	-.0022	-.2024	.0092	-.0018	-.0070	-.0001
#2	-.0023	-.0056	-.1962	.0055	-.0045	-.0076	-.0000

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0043	.0000	.0011	-.0874	-.0008	.0072	-.0001
SDev	.0025	.0001	.0005	.1592	.0003	.0043	.0000
%RSD	58.61	461.9	41.41	182.1	33.86	60.05	15.47
#1	-.0025	.0001	.0015	-.2000	-.0010	.0042	-.0001
#2	-.0061	-.0000	.0008	.0252	-.0006	.0103	-.0001

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	-.0606	-.0005
SDev	.0001	.0037
%RSD	.2005	685.9
#1	-.0605	-.0032
#2	-.0607	.0021

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1320221	10000	--	--	--	--	--
SDev	2637.508	.0000000	--	--	--	--	--
%RSD	.1997778	.0000000	--	--	--	--	--
#1	1318356	10000	--	--	--	--	--
#2	1322086	10000	--	--	--	--	--

Method: DAILY2 Sample Name: UCL-2 Operator:
Run Time: 02/08/16 15:09:14
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.065	.0838	19.83	19.37	19.18	.9912	19.55
SDev	.002	.0009	.05	.06	.03	.0008	.04
%RSD	.1008	1.066	.2558	.3300	.1357	.0771	.2107
#1	2.067	.0832	19.79	19.32	19.17	.9917	19.58
#2	2.064	.0844	19.86	19.41	19.20	.9906	19.52

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1232	9.754	19.54	19.62	20.34	-.4569	.0085
SDev	.0019	.020	.02	.06	.03	.0110	.0695
%RSD	1.532	.2044	.0848	.3121	.1326	2.409	820.2
#1	.1219	9.768	19.55	19.67	20.36	-.4647	-.0407
#2	.1246	9.740	19.53	19.58	20.32	-.4491	.0577

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.26	.0003	.0127	19.23	19.88	1.170	-.0264
SDev	.01	.0002	.0029	.03	.02	.325	.0173
%RSD	.0410	65.77	22.74	.1396	.1164	27.74	65.43
#1	20.26	.0001	.0147	19.25	19.86	.9403	-.0387
#2	20.25	.0004	.0106	19.21	19.90	1.399	-.0142

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	19.28	19.44	19.41	20.19	19.39	20.33	96.58
SDev	.00	.02	.07	.03	.09	.01	.26
%RSD	.0074	.0939	.3850	.1675	.4747	.0652	.2681
#1	19.28	19.43	19.36	20.17	19.46	20.32	96.76
#2	19.28	19.45	19.46	20.21	19.33	20.34	96.39

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	19.87	19.76	14.81	19.40	19.78	19.69	19.32
SDev	.01	.09	.06	.06	.06	.03	.07
%RSD	.0340	.4495	.4336	.2879	.2877	.1534	.3758
#1	19.87	19.70	14.77	19.36	19.74	19.67	19.37
#2	19.86	19.82	14.86	19.44	19.82	19.71	19.26

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0248	21.09	19.41	20.08	19.85	22.40	19.63
SDev	.0081	.01	.00	.13	.01	.10	.01
%RSD	32.82	.0583	.0121	.6586	.0488	.4362	.0719
#1	-.0190	21.10	19.41	19.99	19.85	22.33	19.64
#2	-.0306	21.08	19.41	20.18	19.84	22.47	19.62

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	19.28	20.94
SDev	.02	.00
%RSD	.0838	.0151
#1	19.29	20.94
#2	19.26	20.95

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1400104	10000	--	--	--	--	--
SDev	3727.867	.0000000	--	--	--	--	--
%RSD	.2662564	.0000000	--	--	--	--	--
#1	1402740	10000	--	--	--	--	--
#2	1397468	10000	--	--	--	--	--

Method: DAILY2 Sample Name: ZZZZ Operator:
Run Time: 02/08/16 15:14:21
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0009	-.0056	-.0000	.0608	.0008	-.0000	-.0092
SDev	.0009	.0035	.0012	.0109	.0001	.0000	.0118
%RSD	100.9	62.83	151800.	17.96	6.298	88.14	127.5
#1	-.0016	-.0081	-.0008	.0685	.0007	-.0001	-.0175
#2	-.0003	-.0031	.0008	.0531	.0008	-.0000	-.0009

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0081	.0004	.0006	-.0000	.0003	-.0040	-.0114
SDev	.0013	.0000	.0012	.0018	.0004	.0247	.0404
%RSD	15.93	10.12	187.5	4285.	141.8	612.5	353.0
#1	.0071	.0004	-.0002	-.0013	-.0000	-.0215	-.0400
#2	.0090	.0004	.0015	.0012	.0005	.0134	.0171

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0010	.0001	.0019	.0004	.0020	-.0860	.0106
SDev	.0039	.0001	.0020	.0001	.0003	.5097	.0110
%RSD	403.9	91.28	107.8	19.27	16.61	592.5	104.1
#1	-.0037	.0000	.0004	.0005	.0018	-.4465	.0028
#2	.0018	.0002	.0033	.0004	.0023	.2744	.0183

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0004	-.0020	.0004	.0007	.0211	.0044	102.4
SDev	.0009	.0031	.0009	.0037	.0007	.0019	.0
%RSD	238.8	155.7	210.1	547.7	3.203	43.17	.0058
#1	-.0003	-.0042	.0010	-.0019	.0216	.0031	102.4
#2	.0010	.0002	-.0002	.0033	.0206	.0058	102.4

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0021	.0002	.0070	-.0004	-.0006	.0012	.0005
SDev	.0029	.0017	.0035	.0005	.0001	.0002	.0000
%RSD	139.4	857.7	50.15	119.4	26.91	19.36	.7307
#1	-.0041	.0014	.0045	-.0007	-.0004	.0010	.0005
#2	-.0000	-.0010	.0094	-.0001	-.0007	.0013	.0005

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0011	.0004	.0032	-.0475	-.0002	.0019	.0003
SDev	.0009	.0003	.0010	.1320	.0013	.0019	.0001
%RSD	80.97	74.12	32.64	277.7	881.0	98.59	32.87
#1	-.0005	.0002	.0024	-.1409	-.0011	.0006	.0003
#2	-.0017	.0006	.0039	.0458	.0008	.0032	.0004

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0007	.0001
SDev	.0000	.0016
%RSD	4.225	1515.
#1	.0007	-.0010
#2	.0007	.0013

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1484894	10000	--	--	--	--	--
SDev	92.63099	.0000000	--	--	--	--	--
%RSD	.0062382	.0000000	--	--	--	--	--
#1	1484828	10000	--	--	--	--	--
#2	1484959	10000	--	--	--	--	--

Analysis Report 02/08/16 03:24:19 PM 010702 page 1

Method: DAILY2 Sample Name: CCV Operator:
Run Time: 02/08/16 15:19:27
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0018	L-.0157	L-.0029	L.0229	L.0003	L-.0001	L-.0101
SDev	.0012	.0106	.0033	.0006	.0002	.0001	.0068
%RSD	64.87	67.34	114.0	2.384	54.80	91.30	67.62
#1	L-.0026	L-.0232	L-.0006	L.0233	L.0005	L-.0001	L-.0149
#2	L-.0010	L-.0082	L-.0053	L.0225	L.0002	L-.0000	L-.0053
Errors	LC Low	LC Low	LC Low	LC Low	LC Low	LC Low	LC Low
High	1.100	11.00	5.500	5.500	11.00	1.100	5.500
Low	.9000	9.000	4.500	4.500	9.000	.9000	4.500

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0048	L.0001	L-.0010	L-.0010	L.0004	L-.0002	L-.0208
SDev	.0040	.0003	.0003	.0019	.0006	.0618	.0510
%RSD	83.70	309.9	26.76	188.1	150.1	25100.	245.7
#1	L.0019	L-.0001	L-.0012	L-.0023	L.0008	L-.0439	L-.0568
#2	L.0076	L.0003	L-.0008	L.0003	L-.0000	L.0434	L.0153
Errors	LC Low	LC Low	LC Low	LC Low	LC Low	LC Low	LC Low
High	22.00	1.100	5.500	2.200	2.200	11.00	22.00
Low	18.00	.9000	4.500	1.800	1.800	9.000	18.00

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0016	L.0001	L-.0060	L.0002	L.0012	L-.2042	L.0106
SDev	.0039	.0001	.0085	.0001	.0008	.4971	.0141
%RSD	246.8	173.2	142.4	71.07	67.86	243.5	133.4
#1	L-.0043	L-.0000	L-.0120	L.0003	L.0018	L-.5557	L.0006
#2	L.0012	L.0002	L.0000	L.0001	L.0006	L.1473	L.0206
Errors	LC Low	LC Low	LC Low	LC Low	LC Low	LC Low	LC Low
High	5.500	5.500	22.00	1.100	5.500	33.00	33.00
Low	4.500	4.500	18.00	.9000	4.500	27.00	27.00

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	L-.0004	-.0000	-.0005	L-.0026	L-.0038	L-.0035	103.0
SDev	.0005	.0060	.0014	.0107	.0080	.0027	.5
%RSD	122.7	13980.	289.4	404.1	208.7	78.99	.4490
#1	L-.0001	.0042	-.0015	L-.0102	L.0018	L-.0054	102.7
#2	L-.0007	-.0043	.0005	L.0049	L-.0095	L-.0015	103.3
Errors	LC Low	NOCHECK	NOCHECK	LC Low	LC Low	LC Low	NOCHECK
High	5.500			1.100	1.100	1.100	
Low	4.500			.9000	.9000	.9000	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

in Collect Sample in Vial.
NV 2/9/16

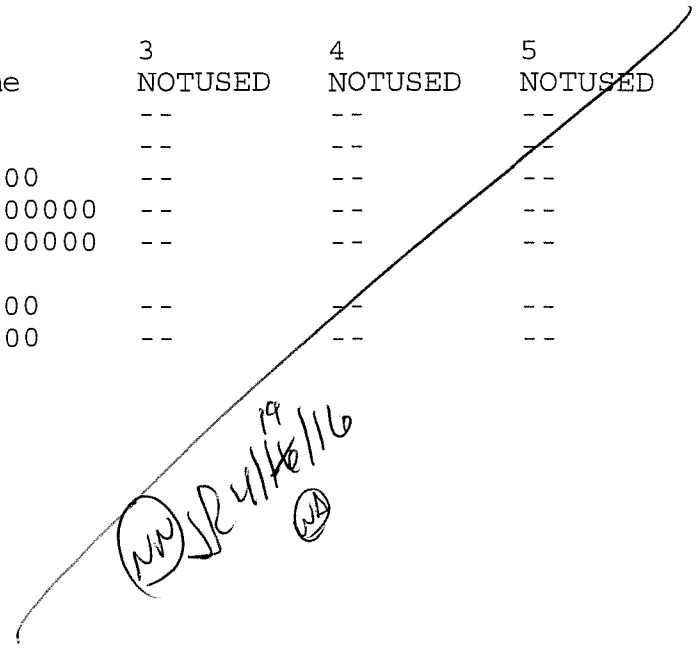
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0067	.0022	L-.0005	L-.0003	L.0037	L-.0022	L.0001
SDev	.0015	.0034	.0033	.0011	.0028	.0013	.0001
%RSD	21.93	159.8	704.3	312.2	75.73	57.72	57.94
#1	.0078	.0046	L-.0028	L.0004	L.0056	L-.0032	L.0001
#2	.0057	-.0003	L.0018	L-.0011	L.0017	L-.0013	L.0002
Errors	NOCHECK	NOCHECK	LC Low	LC Low	LC Low	LC Low	LC Low
High			5.500	5.500	5.500	5.500	5.500
Low			4.500	4.500	4.500	4.500	4.500

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0010	L.0002	L-.0056	L-.0420	L-.0004	L-.0011	L.0001
SDev	.0062	.0003	.0037	.1473	.0006	.0013	.0003
%RSD	646.6	192.7	64.80	351.0	143.6	113.7	258.2
#1	L.0034	L.0004	L-.0082	L-.1461	L.0000	L-.0020	L.0003
#2	L-.0053	L-.0001	L-.0031	L.0622	L-.0008	L-.0002	L-.0001
Errors	LC Low	LC Low	LC Low	LC Low	LC Low	LC Low	LC Low
High	1.100	5.500	5.500	5.500	5.500	1.100	5.500
Low	.9000	4.500	4.500	4.500	4.500	.9000	4.500

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	L.0003	L-.0001
SDev	.0004	.0026
%RSD	156.7	4403.
#1	L-.0000	L-.0019
#2	L.0005	L.0018
Errors	LC Low	LC Low
High	1.100	5.500
Low	.9000	4.500

WNP 9/19/16

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1493240	10000	--	--	--	--	--
SDev	6645.390	.0000000	--	--	--	--	--
%RSD	.4450316	.0000000	--	--	--	--	--
#1	1488541	10000	--	--	--	--	--
#2	1497939	10000	--	--	--	--	--



Method: DAILY2 Sample Name: CCV Operator:
Run Time: 02/08/16 15:30:18
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.035	10.27	5.286	5.087	9.915	1.023	4.926
SDev	.001	.00	.007	.050	.009	.000	.023
%RSD	.0643	.0156	.1415	.9741	.0870	.0122	.4728
#1	1.035	10.27	5.280	5.052	9.909	1.023	4.910
#2	1.036	10.27	5.291	5.122	9.921	1.023	4.943
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.100	11.00	5.500	5.500	11.00	1.100	5.500
Low	.9000	9.000	4.500	4.500	9.000	.9000	4.500

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.52	1.038	5.047	1.981	2.013	9.955	19.59
SDev	.03	.005	.007	.001	.002	.079	.04
%RSD	.1293	.5061	.1435	.0428	.1162	.7976	.1821
#1	20.50	1.042	5.052	1.980	2.012	9.899	19.56
#2	20.54	1.035	5.042	1.982	2.015	10.01	19.61
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.00	1.100	5.500	2.200	2.200	11.00	22.00
Low	18.00	.9000	4.500	1.800	1.800	9.000	18.00

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.978	5.222	20.53	1.006	4.952	29.14	30.01
SDev	.006	.008	.02	.000	.006	.56	.06
%RSD	.1292	.1579	.1098	.0310	.1185	1.920	.1904
#1	4.973	5.228	20.54	1.005	4.957	28.75	30.05
#2	4.982	5.216	20.51	1.006	4.948	29.54	29.97
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.500	5.500	22.00	1.100	5.500	33.00	33.00
Low	4.500	4.500	18.00	.9000	4.500	27.00	27.00

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	4.933	5.009	4.961	.9641	1.010	1.018	100.9
SDev	.001	.003	.008	.0094	.021	.000	.1
%RSD	.0182	.0678	.1670	.9722	2.102	.0202	.0980
#1	4.934	5.007	4.955	.9575	1.025	1.018	100.8
#2	4.932	5.011	4.967	.9708	.9952	1.018	101.0
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	5.500			1.100	1.100	1.100	
Low	4.500			.9000	.9000	.9000	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.283	5.245	4.716	4.972	5.252	5.013	4.874
SDev	.014	.009	.008	.007	.001	.005	.015
%RSD	.2742	.1752	.1675	.1337	.0247	.1027	.3090
#1	5.293	5.238	4.710	4.967	5.251	5.017	4.863
#2	5.273	5.251	4.721	4.977	5.253	5.010	4.884
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			5.500	5.500	5.500	5.500	5.500
Low			4.500	4.500	4.500	4.500	4.500

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.010	4.763	5.169	4.865	5.059	H1.118	4.969
SDev	.004	.001	.003	.127	.006	.006	.013
%RSD	.4384	.0170	.0638	2.608	.1283	.5588	.2528
#1	1.013	4.763	5.167	4.776	5.063	H1.113	4.977
#2	1.006	4.764	5.171	4.955	5.054	H1.122	4.960
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	1.100	5.500	5.500	5.500	5.500	1.100	5.500
Low	.9000	4.500	4.500	4.500	4.500	.9000	4.500

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	1.049	4.884
SDev	.001	.026
%RSD	.1225	.5332
#1	1.049	4.865
#2	1.050	4.902
Errors	LC Pass	LC Pass
High	1.100	5.500
Low	.9000	4.500

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1462952	10000	--	--	--	--	--
SDev	1347.039	.0000000	--	--	--	--	--
%RSD	.0920767	.0000000	--	--	--	--	--
#1	1462000	10000	--	--	--	--	--
#2	1463905	10000	--	--	--	--	--

Method: DAILY2 Sample Name: CCB Operator:
Run Time: 02/08/16 15:35:25
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0018	-.0170	-.0012	.0420	.0002	-.0001	L-.0163
SDev	.0021	.0079	.0069	.0076	.0000	.0000	.0117
%RSD	113.8	46.59	588.8	18.10	23.15	80.16	71.77
#1	-.0033	-.0225	L-.0060	.0474	.0002	-.0001	L-.0246
#2	-.0004	-.0114	.0037	.0367	.0001	-.0000	-.0080
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low
High	.0050	.0500	.0050	.0500	.0050	.0050	.0100
Low	-.0050	-.0500	-.0050	-.0500	-.0050	-.0050	-.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0033	-.0003	-.0005	-.0014	-.0008	.0184	-.0163
SDev	.0036	.0002	.0006	.0029	.0006	.0471	.0632
%RSD	107.5	90.31	103.2	203.6	71.92	256.2	387.4
#1	.0008	-.0004	-.0009	-.0034	-.0012	-.0149	-.0610
#2	.0058	-.0001	-.0001	.0006	-.0004	H.0517	.0284
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0500	.0050	.0050	.0050	.0050	.0500	.1000
Low	-.0500	-.0050	-.0050	-.0050	-.0050	-.0500	-.1000

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0017	.0001	-.0068	-.0000	-.0000	L-.2681	.0114
SDev	.0047	.0001	.0042	.0000	.0012	.5992	.0131
%RSD	270.3	103.4	62.04	119.5	8423.	223.5	115.0
#1	L-.0051	.0000	-.0098	-.0000	-.0008	L-.6918	.0021
#2	.0016	.0003	-.0038	-.0001	.0008	H.1556	.0207
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass
High	.0050	.0050	.0500	.0050	.0050	.0500	.0500
Low	-.0050	-.0050	-.0500	-.0050	-.0050	-.0500	-.0500

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0013	-.0013	-.0033	-.0001	-.0195	-.0005	103.1
SDev	.0006	.0011	.0017	.0099	.0082	.0029	.1
%RSD	41.74	84.74	52.02	7404.	42.16	564.0	.0967
#1	-.0009	-.0021	-.0021	L-.0072	-.0137	-.0026	103.0
#2	-.0017	-.0005	-.0045	H.0069	L-.0253	.0015	103.2
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	.0050			.0050	.0200	.0100	
Low	-.0050			-.0050	-.0200	-.0100	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0102	-.0007	-.0028	-.0026	.0029	.0001	.0001
SDev	.0088	.0053	.0048	.0008	.0064	.0013	.0001
%RSD	85.96	718.2	174.8	29.24	220.7	1238.	146.8
#1	.0040	-.0045	-.0062	-.0021	-.0016	-.0008	-.0000
#2	.0164	.0030	.0007	-.0032	H.0075	.0010	.0001
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			.0100	.0050	.0050	.0100	.0050
Low			-.0100	-.0050	-.0050	-.0100	-.0050

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0022	.0001	-.0029	-.0493	-.0011	.0015	-.0001
SDev	.0027	.0000	.0002	.1678	.0009	.0039	.0000
%RSD	122.2	71.68	7.489	340.0	83.48	267.8	6.161
#1	-.0003	.0001	-.0031	L-.1680	-.0018	-.0013	-.0001
#2	-.0041	.0000	-.0028	.0693	-.0005	.0042	-.0001
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0100	.0050	.0100	.1000	.0050	.0100	.0050
Low	-.0100	-.0050	-.0100	-.1000	-.0050	-.0100	-.0050

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	-.0000	.0008
SDev	.0003	.0024
%RSD	791.3	294.2
#1	-.0003	-.0009
#2	.0002	.0025
Errors	LC Pass	LC Pass
High	.0050	.0050
Low	-.0050	-.0050

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1494444	10000	--	--	--	--	--
SDev	1448.155	.0000000	--	--	--	--	--
%RSD	.0969026	.0000000	--	--	--	--	--
#1	1493420	10000	--	--	--	--	--
#2	1495468	10000	--	--	--	--	--

Method: DAILY2 Sample Name: PB16A27KE2 DF100 Operator:
Run Time: 02/08/16 15:40:31
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0005	-.0123	-.0008	33.85	.0004	-.0001	-.0073
SDev	.0007	.0029	.0000	.31	.0001	.0001	.0043
%RSD	146.8	23.57	.9877	.9047	12.01	81.67	58.42
#1	.0000	-.0102	-.0008	33.63	.0005	-.0001	-.0103
#2	-.0010	-.0143	-.0008	34.06	.0004	-.0000	-.0043

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0123	.0000	-.0001	-.0002	.0009	.0182	-.0003
SDev	.0001	.0000	.0002	.0015	.0001	.0527	.0439
%RSD	.3779	90.87	109.0	648.8	8.910	289.6	14050.
#1	.0123	.0000	-.0000	-.0013	.0009	-.0191	-.0314
#2	.0124	.0000	-.0003	.0008	.0010	.0555	.0307

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0003	12.26	-.0013	.0002	.0003	-.1005	.0230
SDev	.0040	.02	.0051	.0001	.0001	.5118	.0136
%RSD	1553.	.1713	392.9	45.79	36.35	509.5	58.91
#1	-.0031	12.27	.0023	.0002	.0004	-.4624	.0134
#2	.0026	12.24	-.0049	.0001	.0002	.2615	.0326

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0007	-.0056	.0001	.0006	-.0060	.0040	103.0
SDev	.0001	.0059	.0022	.0000	.0111	.0058	.1
%RSD	15.42	105.1	1506.	6.269	186.0	145.9	.1407
#1	-.0006	-.0014	-.0014	.0006	-.0138	.0080	102.9
#2	-.0008	-.0098	.0017	.0005	.0019	-.0001	103.1

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0047	-.0011	.0010	-.0018	.0008	.0006	.0001
SDev	.0058	.0017	.0026	.0005	.0008	.0028	.0001
%RSD	124.3	155.5	258.8	26.33	97.21	499.8	67.06
#1	.0087	-.0022	.0028	-.0014	.0014	.0025	.0001
#2	.0006	.0001	-.0008	-.0021	.0003	-.0014	.0000

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0005	.0003	-.0022	-.0040	.0006	.0013	.0001
SDev	.0033	.0002	.0008	.1233	.0001	.0035	.0001
%RSD	712.0	62.06	35.65	3107.	16.68	273.3	62.24
#1	.0028	.0004	-.0016	-.0911	.0007	.0037	.0002
#2	-.0019	.0002	-.0028	.0832	.0005	-.0012	.0001

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0002	.0009
SDev	.0001	.0025
%RSD	65.07	279.7
#1	.0001	-.0009
#2	.0003	.0026

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1492586	10000	--	--	--	--	--
SDev	2097.986	.0000000	--	--	--	--	--
%RSD	.1405605	.0000000	--	--	--	--	--
#1	1491102	10000	--	--	--	--	--
#2	1494069	10000	--	--	--	--	--

Method: DAILY2 Sample Name: LCS16A27KE3 DF100 Operator:
Run Time: 02/08/16 15:45:37
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0013	.7189	-.0010	37.06	.0089	-.0000	-.0068
SDev	.0006	.0130	.0029	.32	.0001	.0001	.0023
%RSD	48.32	1.807	291.2	.8560	1.177	211.7	34.19
#1	-.0018	.7097	-.0030	36.83	.0090	-.0001	-.0051
#2	-.0009	.7281	.0011	37.28	.0089	.0000	-.0084

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0722	-.0001	.0004	-.0001	.0001	.1557	.2734
SDev	.0019	.0003	.0002	.0031	.0000	.0674	.0618
%RSD	2.698	425.5	39.82	3070.	24.80	43.29	22.60
#1	.0708	-.0002	.0003	-.0023	.0001	.1080	.2297
#2	.0736	.0001	.0005	.0021	.0001	.2033	.3170

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0002	13.13	.0110	.0038	.0002	.2760	.3862
SDev	.0054	.01	.0037	.0001	.0005	.8412	.0185
%RSD	3104.	.0828	34.10	3.808	225.6	304.8	4.797
#1	-.0037	13.14	.0083	.0039	-.0001	-.3188	.3731
#2	.0040	13.13	.0136	.0037	.0006	.8709	.3993

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0003	-.0009	-.0015	-.0027	.0045	.0042	102.7
SDev	.0005	.0048	.0028	.0046	.0025	.0013	.6
%RSD	161.3	502.6	190.6	168.1	56.64	31.32	.5774
#1	.0000	-.0043	.0005	-.0060	.0027	.0052	102.3
#2	-.0006	.0024	-.0034	.0005	.0062	.0033	103.2

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0054	-.0023	2.617	-.0013	.0003	.0009	.0006
SDev	.0022	.0002	.134	.0003	.0006	.0014	.0000
%RSD	40.62	8.086	5.110	21.59	205.6	152.1	2.590
#1	.0070	-.0024	2.523	-.0011	.0007	-.0001	.0006
#2	.0039	-.0021	2.712	-.0015	-.0001	.0019	.0007

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0039	.0129	.0011	.0290	-.0004	.0011	.0004
SDev	.0057	.0002	.0016	.1770	.0002	.0034	.0002
%RSD	147.0	1.238	141.3	610.0	41.38	315.2	46.09
#1	.0002	.0130	.0022	-.0961	-.0003	-.0013	.0005
#2	-.0079	.0128	.0000	.1542	-.0005	.0034	.0003

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0004	.0025
SDev	.0001	.0033
%RSD	33.52	130.8
#1	.0005	.0002
#2	.0003	.0048

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1489330	10000	--	--	--	--	--
SDev	8555.285	.0000000	--	--	--	--	--
%RSD	.5744383	.0000000	--	--	--	--	--
#1	1483281	10000	--	--	--	--	--
#2	1495380	10000	--	--	--	--	--

Method: DAILY2 Sample Name: LCS16A27KE4 DF100 Operator:
Run Time: 02/08/16 15:50:43
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0006	.9067	.0009	41.38	.0020	-.0000	-.0110
SDev	.0007	.0011	.0009	.30	.0002	.0000	.0014
%RSD	113.5	.1213	103.2	.7311	12.17	123.6	12.43
#1	-.0001	.9059	.0016	41.17	.0022	-.0001	-.0120
#2	-.0011	.9075	.0002	41.60	.0018	-.0000	-.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.8743	.0001	.0013	.0025	.0015	.7312	.0169
SDev	.0015	.0001	.0002	.0008	.0008	.0326	.0199
%RSD	.1719	86.07	12.84	31.70	50.30	4.457	117.5
#1	.8754	.0001	.0014	.0020	.0020	.7082	.0029
#2	.8733	.0000	.0012	.0031	.0010	.7543	.0310

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0000	14.09	.5117	.0128	.0007	.1436	.1951
SDev	.0022	.11	.0048	.0000	.0007	.1175	.0095
%RSD	12150.	.7851	.9404	.0577	97.05	81.86	4.883
#1	-.0016	14.17	.5151	.0128	.0002	.0605	.1884
#2	.0016	14.01	.5083	.0128	.0012	.2267	.2018

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0013	.0001	-.0019	.0012	-.0153	.0050	102.6
SDev	.0005	.0002	.0025	.0036	.0027	.0005	1.2
%RSD	42.11	290.0	129.3	298.0	17.63	9.727	1.136
#1	.0016	-.0001	-.0002	-.0013	-.0134	.0047	101.8
#2	.0009	.0002	-.0037	.0037	-.0173	.0053	103.4

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0056	-.0051	1.883	-.0013	-.0015	-.0013	.0016
SDev	.0030	.0033	.037	.0016	.0012	.0005	.0001
%RSD	53.55	65.00	1.939	127.3	79.01	39.30	2.787
#1	.0035	-.0028	1.857	-.0001	-.0007	-.0010	.0017
#2	.0077	-.0075	1.908	-.0024	-.0024	-.0017	.0016

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0008	.0654	-.0035	.0232	.0024	-.0003	.0002
SDev	.0056	.0001	.0035	.0778	.0010	.0051	.0002
%RSD	683.0	.1370	99.04	335.0	41.14	1726.	95.07
#1	.0031	.0654	-.0060	-.0318	.0031	.0033	.0003
#2	-.0048	.0653	-.0011	.0783	.0017	-.0039	.0001

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0009	.0015
SDev	.0001	.0018
%RSD	10.13	116.7
#1	.0009	.0003
#2	.0010	.0028

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1486908	10000	--	--	--	--	--
SDev	16862.38	.0000000	--	--	--	--	--
%RSD	1.134056	.0000000	--	--	--	--	--
#1	1474985	10000	--	--	--	--	--
#2	1498832	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 588049F DF100 Operator:
Run Time: 02/08/16 15:55:49
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0016	.2364	-.0014	41.76	2.760	-.0001	-.0150
SDev	.0016	.0058	.0028	.38	.038	.0000	.0128
%RSD	100.2	2.454	202.3	.9154	1.364	70.51	85.51
#1	-.0027	.2323	-.0034	42.03	2.786	-.0001	-.0240
#2	-.0005	.2405	.0006	41.49	2.733	-.0000	-.0059

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.3745	.0000	.0084	-.0006	.0034	.1559	.0640
SDev	.0012	.0002	.0008	.0019	.0010	.0544	.0390
%RSD	.3323	637.4	9.964	305.6	28.40	34.88	60.86
#1	.3754	-.0001	.0078	-.0020	.0041	.1174	.0365
#2	.3737	.0002	.0090	.0007	.0028	.1943	.0916

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0013	14.08	.0704	.0041	.0029	-.1366	.0680
SDev	.0035	.22	.0059	.0002	.0001	.5673	.0120
%RSD	262.6	1.593	8.346	4.938	2.085	415.2	17.65
#1	-.0038	14.23	.0662	.0043	.0028	-.5378	.0595
#2	.0011	13.92	.0745	.0040	.0029	.2645	.0765

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0076	.0196	.0215	-.0027	.0077	.0011	102.8
SDev	.0002	.0015	.0008	.0118	.0015	.0002	.6
%RSD	2.716	7.877	3.793	432.5	19.95	14.49	.5473
#1	.0078	.0207	.0221	-.0111	.0088	.0010	102.4
#2	.0075	.0186	.0210	.0056	.0067	.0013	103.2

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0000	-.0011	1.325	.0209	-.0007	.0003	.0306
SDev	.0036	.0007	.019	.0011	.0017	.0022	.0002
%RSD	40480.	67.40	1.398	5.061	236.0	723.1	.6450
#1	.0025	-.0006	1.312	.0216	.0005	-.0013	.0307
#2	-.0025	-.0016	1.338	.0202	-.0019	.0019	.0304

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0000	.0178	-.0053	-.0276	.0021	-.0008	.0001
SDev	.0046	.0003	.0075	.1199	.0000	.0022	.0002
%RSD	149000.	1.982	140.5	434.3	1.665	276.0	182.4
#1	.0033	.0181	-.0106	-.1124	.0020	-.0024	.0003
#2	-.0033	.0176	-.0000	.0572	.0021	.0008	-.0000

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0012	.0027
SDev	.0001	.0024
%RSD	7.159	87.97
#1	.0011	.0010
#2	.0012	.0044

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1490707	10000	--	--	--	--	--
SDev	8148.699	.0000000	--	--	--	--	--
%RSD	.5466331	.0000000	--	--	--	--	--
#1	1484945	10000	--	--	--	--	--
#2	1496469	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 588556F DF100 Operator:
Run Time: 02/08/16 16:00:55
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0029	.2345	.0014	39.16	1.569	-.0001	-.0187
SDev	.0007	.0014	.0041	.16	.003	.0000	.0003
%RSD	23.14	.5898	298.2	.4034	.1801	58.89	1.783
#1	-.0034	.2335	-.0015	39.05	1.571	-.0001	-.0185
#2	-.0024	.2355	.0043	39.27	1.567	-.0000	-.0189

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.6373	.0000	.0096	-.0007	.0047	.2091	.0535
SDev	.0034	.0001	.0013	.0018	.0006	.0373	.0395
%RSD	.5359	120.1	13.29	246.7	12.44	17.84	73.83
#1	.6349	.0000	.0087	-.0020	.0043	.1828	.0256
#2	.6397	.0001	.0105	.0005	.0052	.2355	.0815

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0009	13.42	.0874	.0076	.0019	-.1120	.0543
SDev	.0040	.05	.0033	.0001	.0009	.4407	.0088
%RSD	462.5	.3780	3.789	.6771	48.85	393.3	16.17
#1	-.0037	13.39	.0851	.0077	.0012	-.4236	.0481
#2	.0020	13.46	.0897	.0076	.0025	.1996	.0605

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0118	.0279	.0262	-.0017	.0401	.0007	103.0
SDev	.0001	.0029	.0022	.0056	.0054	.0037	.2
%RSD	.5844	10.29	8.543	333.4	13.47	534.0	.2392
#1	.0118	.0258	.0278	-.0057	.0439	.0033	103.1
#2	.0119	.0299	.0246	.0023	.0363	-.0019	102.8

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0058	-.0033	1.122	.0267	-.0002	-.0004	.0191
SDev	.0004	.0029	.004	.0005	.0020	.0018	.0000
%RSD	6.599	88.55	.3901	2.005	906.3	414.1	.0458
#1	.0061	-.0012	1.119	.0271	.0012	-.0017	.0191
#2	.0055	-.0053	1.125	.0264	-.0017	.0009	.0192

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0038	.0161	-.0048	-.0240	.0007	-.0041	.0000
SDev	.0032	.0003	.0035	.1318	.0007	.0016	.0000
%RSD	85.82	1.625	73.07	550.2	97.97	39.96	84.90
#1	-.0061	.0159	-.0073	-.1171	.0002	-.0052	.0000
#2	-.0015	.0163	-.0023	.0692	.0012	-.0029	.0001

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0019	.0026
SDev	.0000	.0020
%RSD	1.753	76.60
#1	.0019	.0012
#2	.0019	.0041

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1492646	10000	--	--	--	--	--
SDev	3523.513	.0000000	--	--	--	--	--
%RSD	.2360581	.0000000	--	--	--	--	--
#1	1495138	10000	--	--	--	--	--
#2	1490155	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 588556FD DF100 Operator:
Run Time: 02/08/16 16:06:01
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0007	.2455	.0001	38.79	1.708	-.0001	-.0007
SDev	.0003	.0053	.0009	.22	.001	.0001	.0031
%RSD	37.31	2.136	678.1	.5785	.0562	106.2	427.5
#1	-.0009	.2418	.0008	38.63	1.708	-.0001	-.0029
#2	-.0005	.2493	-.0005	38.95	1.709	-.0000	.0015

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.5943	.0001	.0117	-.0001	.0056	.1807	.0572
SDev	.0025	.0001	.0003	.0029	.0002	.0489	.0575
%RSD	.4153	34.54	2.851	3856.	2.928	27.07	100.6
#1	.5925	.0001	.0115	-.0021	.0057	.1461	.0165
#2	.5960	.0002	.0119	.0020	.0055	.2153	.0979

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0005	13.32	.0994	.0074	.0021	-.0890	.0551
SDev	.0053	.02	.0003	.0001	.0002	.5582	.0150
%RSD	1068.	.1437	.2862	1.910	7.957	627.3	27.17
#1	-.0042	13.34	.0992	.0075	.0023	-.4837	.0445
#2	.0032	13.31	.0996	.0073	.0020	.3057	.0657

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0126	.0189	.0169	-.0004	.0289	.0010	102.8
SDev	.0005	.0038	.0007	.0035	.0082	.0092	.4
%RSD	4.162	19.90	4.335	892.9	28.31	915.3	.4023
#1	.0129	.0216	.0164	-.0029	.0347	.0075	102.5
#2	.0122	.0162	.0174	.0021	.0231	-.0055	103.1

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0072	.0007	1.145	.0176	.0029	.0008	.0204
SDev	.0126	.0095	.009	.0008	.0021	.0009	.0001
%RSD	175.6	1314.	.7896	4.349	74.13	117.8	.3064
#1	.0161	-.0060	1.139	.0181	.0014	.0001	.0204
#2	-.0017	.0075	1.151	.0170	.0044	.0015	.0205

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0022	.0169	-.0042	-.0100	.0016	.0006	.0002
SDev	.0086	.0001	.0007	.1817	.0002	.0028	.0001
%RSD	391.2	.7426	16.60	1818.	10.79	470.6	55.77
#1	.0039	.0170	-.0037	-.1385	.0015	-.0014	.0002
#2	-.0083	.0168	-.0047	.1185	.0018	.0026	.0001

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0021	.0017
SDev	.0001	.0029
%RSD	3.417	166.6
#1	.0021	-.0003
#2	.0020	.0038

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1490341	10000	--	--	--	--	--
SDev	6133.444	.0000000	--	--	--	--	--
%RSD	.4115464	.0000000	--	--	--	--	--
#1	1486004	10000	--	--	--	--	--
#2	1494678	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 588556FL DF500 Operator:
Run Time: 02/08/16 16:11:07
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0011	.0371	-.0003	8.213	.3202	-.0001	-.0090
SDev	.0013	.0085	.0018	.025	.0000	.0001	.0050
%RSD	118.2	22.87	565.0	.3063	.0006	60.60	55.60
#1	-.0020	.0311	-.0016	8.231	.3202	-.0001	-.0126
#2	-.0002	.0431	.0010	8.195	.3202	-.0000	-.0055

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1326	.0000	.0020	-.0002	.0009	.0511	.0122
SDev	.0011	.0002	.0008	.0022	.0011	.0236	.0318
%RSD	.8297	1462.	38.37	1002.	121.8	46.15	260.1
#1	.1318	-.0001	.0014	-.0018	.0017	.0344	-.0102
#2	.1334	.0002	.0025	.0014	.0001	.0677	.0347

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0007	3.021	.0136	.0015	.0003	-.0297	.0310
SDev	.0026	.011	.0061	.0002	.0006	.4961	.0114
%RSD	361.2	.3765	44.98	11.67	212.2	1668.	36.74
#1	-.0026	3.029	.0092	.0017	-.0001	-.3806	.0229
#2	.0011	3.013	.0179	.0014	.0007	.3211	.0390

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0021	.0045	.0036	-.0031	.0197	.0017	104.2
SDev	.0007	.0012	.0018	.0055	.0103	.0004	.5
%RSD	33.42	26.14	49.70	180.3	52.18	22.18	.4544
#1	.0016	.0054	.0049	-.0070	.0270	.0015	103.8
#2	.0026	.0037	.0024	.0008	.0124	.0020	104.5

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0090	-.0010	.2289	.0039	.0024	.0004	.0039
SDev	.0075	.0030	.0016	.0016	.0045	.0000	.0001
%RSD	83.53	301.5	.6961	40.59	191.0	7.948	1.744
#1	.0143	.0011	.2278	.0051	.0055	.0004	.0038
#2	.0037	-.0031	.2300	.0028	-.0008	.0004	.0039

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0012	.0034	-.0071	-.0003	-.0001	-.0022	.0001
SDev	.0066	.0004	.0018	.1172	.0006	.0048	.0003
%RSD	556.3	11.90	24.66	35070.	733.2	218.1	406.2
#1	.0035	.0037	-.0084	-.0832	.0004	-.0056	.0002
#2	-.0059	.0031	-.0059	.0825	-.0005	.0012	-.0001

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0007	.0004
SDev	.0002	.0017
%RSD	23.55	470.8
#1	.0006	-.0008
#2	.0008	.0016

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1510120	10000	--	--	--	--	--
SDev	6883.685	.0000000	--	--	--	--	--
%RSD	.4558371	.0000000	--	--	--	--	--
#1	1505252	10000	--	--	--	--	--
#2	1514987	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 588556FAS DF100 Operator:
Run Time: 02/08/16 16:17:26
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0485	2.282	2.083	39.32	3.531	.0511	-.0102
SDev	.0010	.001	.010	.27	.007	.0000	.0098
%RSD	2.049	.0517	.4939	.6925	.1928	.0658	95.82
#1	.0478	2.281	2.076	39.13	3.526	.0510	-.0171
#2	.0492	2.283	2.090	39.51	3.535	.0511	-.0033

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	21.10	.0502	.5154	.1939	.2563	1.257	20.31
SDev	.06	.0001	.0003	.0015	.0008	.031	.03
%RSD	.2797	.2511	.0493	.7959	.3110	2.502	.1350
#1	21.06	.0501	.5152	.1928	.2569	1.235	20.29
#2	21.14	.0503	.5155	.1950	.2558	1.280	20.33

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0003	13.90	20.49	.5102	.0019	19.14	21.35
SDev	.0025	.03	.02	.0002	.0003	.44	.02
%RSD	945.1	.2199	.0938	.0404	14.04	2.288	.0733
#1	-.0015	13.92	20.47	.5103	.0017	18.83	21.36
#2	.0020	13.88	20.50	.5101	.0021	19.45	21.34

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.5014	.5194	.5169	-.0030	.0441	.5285	100.5
SDev	.0010	.0021	.0004	.0000	.0031	.0009	.1
%RSD	.2008	.4044	.0701	1.396	6.906	.1671	.1096
#1	.5021	.5179	.5167	-.0029	.0463	.5291	100.4
#2	.5006	.5209	.5172	-.0030	.0420	.5279	100.6

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.103	2.091	1.129	.5172	2.093	.0012	.0192
SDev	.007	.004	.008	.0009	.005	.0013	.0000
%RSD	.3412	.1874	.7264	.1786	.2398	114.5	.1963
#1	2.098	2.088	1.123	.5166	2.089	.0021	.0192
#2	2.108	2.094	1.135	.5179	2.096	.0002	.0192

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0227	.0170	2.069	.0180	.5045	.0075	.0001
SDev	.0063	.0001	.008	.1080	.0003	.0087	.0002
%RSD	27.49	.6825	.3775	599.7	.0642	115.3	128.3
#1	-.0183	.0171	2.074	-.0584	.5042	.0014	.0003
#2	-.0272	.0169	2.063	.0944	.5047	.0136	.0000

010726

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.5211	-.0043
SDev	.0009	.0012
%RSD	.1826	27.61
#1	.5218	-.0051
#2	.5204	-.0034

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1456464	10000	--	--	--	--	--
SDev	1552.099	.0000000	--	--	--	--	--
%RSD	.1065663	.0000000	--	--	--	--	--
#1	1455366	10000	--	--	--	--	--
#2	1457561	10000	--	--	--	--	--

Analysis Report 02/08/16 04:27:25 PM page 1

Method: DAILY2 Sample Name: 590212F DF100 Operator:
Run Time: 02/08/16 16:22:33
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0014	.1319	-.0008	39.70	3.299	-.0001	-.0049
SDev	.0001	.0019	.0006	.19	.004	.0000	.0026
%RSD	6.254	1.448	76.59	.4711	.1087	67.66	52.32
#1	-.0013	.1305	-.0004	39.57	3.302	-.0001	-.0067
#2	-.0014	.1332	-.0013	39.83	3.297	-.0000	-.0031

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1299	-.0001	.0066	-.0001	.0042	.0932	.0448
SDev	.0006	.0001	.0002	.0014	.0004	.0307	.0436
%RSD	.4748	92.75	2.363	2016.	10.68	32.93	97.25
#1	.1294	-.0000	.0067	-.0011	.0045	.0715	.0140
#2	.1303	-.0001	.0065	.0009	.0038	.1149	.0756

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0002	13.67	.0312	.0020	.0020	-.0443	.0556
SDev	.0033	.01	.0015	.0002	.0005	.6105	.0119
%RSD	2027.	.1043	4.688	7.879	25.08	1378.	21.35
#1	-.0025	13.68	.0323	.0021	.0017	-.4759	.0472
#2	.0021	13.66	.0302	.0019	.0024	.3874	.0640

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0051	.0199	.0175	-.0043	.0062	-.0002	102.8
SDev	.0004	.0039	.0018	.0006	.0054	.0012	.5
%RSD	7.189	19.41	10.35	14.83	88.04	528.5	.4400
#1	.0048	.0226	.0162	-.0047	.0023	.0006	102.5
#2	.0054	.0171	.0188	-.0038	.0100	-.0010	103.2

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0038	-.0009	.8600	.0183	.0007	.0002	.0335
SDev	.0012	.0010	.0040	.0001	.0003	.0012	.0001
%RSD	30.22	108.6	.4605	.4168	39.79	646.1	.1681
#1	.0047	-.0016	.8572	.0184	.0005	.0010	.0335
#2	.0030	-.0002	.8628	.0182	.0009	-.0007	.0334

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0003	.0102	-.0031	.0141	.0006	-.0011	.0001
SDev	.0042	.0001	.0035	.1372	.0001	.0014	.0000
%RSD	1334.	.4689	113.3	971.8	8.719	127.4	35.11
#1	.0033	.0103	-.0006	-.0829	.0006	-.0001	.0001
#2	-.0027	.0102	-.0056	.1111	.0007	-.0020	.0001

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0011	.0016
SDev	.0000	.0023
%RSD	3.058	145.9
#1	.0011	-.0001
#2	.0011	.0032

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1490834	10000	--	--	--	--	--
SDev	6507.504	.0000000	--	--	--	--	--
%RSD	.4365008	.0000000	--	--	--	--	--
#1	1486233	10000	--	--	--	--	--
#2	1495436	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 590213F DF100 Operator:
Run Time: 02/08/16 16:27:39
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0010	.3097	-.0007	35.14	1.277	-.0000	-.0122
SDev	.0007	.0005	.0028	.18	.003	.0000	.0042
%RSD	68.28	.1725	414.9	.4995	.2060	83.35	34.25
#1	-.0015	.3094	.0013	35.02	1.275	-.0001	-.0152
#2	-.0005	.3101	-.0026	35.27	1.278	-.0000	-.0093

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.6264	.0002	.0025	-.0003	.0033	.1423	.0960
SDev	.0001	.0004	.0003	.0019	.0007	.0463	.0312
%RSD	.0130	282.5	12.43	624.0	21.66	32.52	32.56
#1	.6263	-.0002	.0023	-.0017	.0028	.1096	.0739
#2	.6264	.0005	.0027	.0011	.0038	.1751	.1181

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0002	12.17	.1245	.0042	.0008	.0506	.0895
SDev	.0040	.09	.0021	.0000	.0018	.5522	.0143
%RSD	1808.	.7767	1.704	.3984	227.0	1091.	16.02
#1	-.0026	12.24	.1230	.0042	-.0005	-.3398	.0793
#2	.0031	12.11	.1260	.0042	.0021	.4411	.0996

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0021	.0036	.0055	-.0056	.0655	-.0007	103.0
SDev	.0015	.0040	.0019	.0054	.0098	.0051	.7
%RSD	70.49	111.4	35.38	96.83	14.99	783.8	.6900
#1	.0010	.0008	.0068	-.0095	.0586	-.0043	102.5
#2	.0031	.0065	.0041	-.0018	.0724	.0030	103.5

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0032	.0000	1.666	.0049	.0011	.0013	.0136
SDev	.0003	.0014	.037	.0001	.0008	.0016	.0001
%RSD	9.778	3743.	2.199	1.087	75.35	121.2	.5880
#1	.0034	-.0010	1.640	.0048	.0005	.0002	.0135
#2	.0030	.0010	1.692	.0049	.0017	.0024	.0136

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0002	.0194	-.0013	.0215	.0005	.0004	.0001
SDev	.0006	.0003	.0017	.1151	.0009	.0030	.0000
%RSD	244.8	1.550	133.6	536.2	183.1	697.6	9.071
#1	.0002	.0192	-.0001	-.0599	-.0001	-.0017	.0001
#2	-.0007	.0196	-.0025	.1028	.0011	.0026	.0001

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0015	.0023
SDev	.0001	.0025
%RSD	6.190	107.8
#1	.0015	.0005
#2	.0016	.0040

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1492722	10000	--	--	--	--	--
SDev	10254.46	.0000000	--	--	--	--	--
%RSD	.6869640	.0000000	--	--	--	--	--
#1	1485471	10000	--	--	--	--	--
#2	1499973	10000	--	--	--	--	--

Method: DAILY2 Sample Name: CCV Operator:
Run Time: 02/08/16 16:32:46
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.035	10.28	5.289	5.481	9.919	1.025	4.951
SDev	.001	.01	.013	.043	.027	.001	.024
%RSD	.1169	.0507	.2411	.7857	.2725	.1329	.4763
#1	1.035	10.27	5.280	H5.511	9.938	1.026	4.935
#2	1.036	10.28	5.298	5.450	9.900	1.024	4.968
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.100	11.00	5.500	5.500	11.00	1.100	5.500
Low	.9000	9.000	4.500	4.500	9.000	.9000	4.500

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.44	1.038	5.057	1.982	2.014	9.943	19.62
SDev	.20	.001	.002	.000	.003	.123	.13
%RSD	.9686	.0615	.0298	.0220	.1589	1.237	.6855
#1	20.30	1.038	5.058	1.981	2.016	9.856	19.53
#2	20.58	1.039	5.056	1.982	2.011	10.03	19.72
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.00	1.100	5.500	2.200	2.200	11.00	22.00
Low	18.00	.9000	4.500	1.800	1.800	9.000	18.00

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.985	5.254	20.54	1.007	4.947	29.27	30.07
SDev	.002	.032	.05	.000	.020	.58	.12
%RSD	.0407	.6177	.2622	.0020	.4067	1.999	.4053
#1	4.987	5.231	20.51	1.007	4.933	28.85	29.99
#2	4.984	5.277	20.58	1.007	4.962	29.68	30.16
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.500	5.500	22.00	1.100	5.500	33.00	33.00
Low	4.500	4.500	18.00	.9000	4.500	27.00	27.00

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	4.948	4.999	4.972	.9636	1.007	1.019	101.2
SDev	.015	.040	.049	.0109	.011	.002	.6
%RSD	.3020	.7940	.9787	1.129	1.085	.1699	.6046
#1	4.937	4.971	4.937	.9559	.9998	1.018	101.6
#2	4.958	5.027	5.006	.9713	1.015	1.020	100.7
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	5.500			1.100	1.100	1.100	
Low	4.500			.9000	.9000	.9000	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.276	5.272	4.721	4.976	5.268	5.020	4.878
SDev	.068	.057	.001	.046	.060	.003	.006
%RSD	1.290	1.077	.0293	.9169	1.148	.0649	.1283
#1	5.228	5.232	4.722	4.943	5.225	5.018	4.882
#2	5.324	5.312	4.720	5.008	5.311	5.023	4.873
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			5.500	5.500	5.500	5.500	5.500
Low			4.500	4.500	4.500	4.500	4.500

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.018	4.765	5.173	4.920	5.061	H1.119	4.975
SDev	.001	.001	.013	.170	.004	.018	.019
%RSD	.1340	.0301	.2492	3.451	.0692	1.583	.3876
#1	1.019	4.766	5.164	4.800	5.064	H1.106	4.989
#2	1.017	4.764	5.182	5.040	5.059	H1.131	4.961
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	1.100	5.500	5.500	5.500	5.500	1.100	5.500
Low	.9000	4.500	4.500	4.500	4.500	.9000	4.500

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	1.052	4.874
SDev	.004	.053
%RSD	.3713	1.092
#1	1.049	4.837
#2	1.054	4.912
Errors	LC Pass	LC Pass
High	1.100	5.500
Low	.9000	4.500

010733

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1466495	10000	--	--	--	--	--
SDev	8838.835	.0000000	--	--	--	--	--
%RSD	.6027183	.0000000	--	--	--	--	--
#1	1472745	10000	--	--	--	--	--
#2	1460245	10000	--	--	--	--	--

Method: DAILY2 Sample Name: CCB Operator:
Run Time: 02/08/16 16:37:53
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0014	-.0181	-.0021	H.2425	.0015	.0001	L-.0128
SDev	.0002	.0039	.0016	.0350	.0013	.0001	.0043
%RSD	16.26	21.31	75.72	14.42	82.69	144.2	33.81
#1	-.0012	-.0154	-.0032	H.2672	.0024	.0001	L-.0158
#2	-.0015	-.0208	-.0010	H.2177	.0006	-.0000	-.0097
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Low
High	.0050	.0500	.0050	.0500	.0050	.0050	.0100
Low	-.0050	-.0500	-.0050	-.0500	-.0050	-.0050	-.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0012	.0001	-.0001	-.0002	.0009	.0110	.0079
SDev	.0003	.0001	.0003	.0014	.0009	.0163	.0315
%RSD	22.00	102.5	254.5	672.1	110.9	148.4	397.9
#1	.0010	.0000	.0001	-.0012	.0015	-.0005	-.0143
#2	.0014	.0002	-.0003	.0008	.0002	.0226	.0302
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0500	.0050	.0050	.0050	.0050	.0500	.1000
Low	-.0500	-.0050	-.0050	-.0050	-.0050	-.0500	-.1000

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0007	.0019	-.0018	.0002	.0025	H.0813	.0184
SDev	.0024	.0007	.0006	.0002	.0021	.4387	.0090
%RSD	351.6	37.62	33.60	96.17	85.33	539.9	49.12
#1	-.0010	.0024	-.0022	.0004	.0040	L-.2289	.0120
#2	.0024	.0014	-.0013	.0001	.0010	H.3915	.0248
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	.0050	.0050	.0500	.0050	.0050	.0500	.0500
Low	-.0050	-.0050	-.0500	-.0050	-.0050	-.0500	-.0500

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0008	-.0039	-.0010	-.0030	.0103	-.0007	102.5
SDev	.0021	.0012	.0001	.0036	.0032	.0011	.7
%RSD	251.4	31.01	15.19	119.4	31.05	148.9	.6876
#1	.0023	-.0031	-.0009	-.0005	.0081	.0000	102.0
#2	-.0006	-.0048	-.0011	L-.0056	.0126	-.0015	103.0
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	.0050			.0050	.0200	.0100	
Low	-.0050			-.0050	-.0200	-.0100	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0023	.0001	.0046	-.0019	.0008	-.0023	.0005
SDev	.0018	.0063	.0024	.0005	.0047	.0025	.0005
%RSD	78.20	8378.	51.43	25.90	585.1	109.0	93.93
#1	.0035	.0045	.0063	-.0016	.0042	-.0005	.0008
#2	.0010	-.0043	.0029	-.0023	-.0025	-.0041	.0002
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			.0100	.0050	.0050	.0100	.0050
Low			-.0100	-.0050	-.0050	-.0100	-.0050

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0011	.0010	-.0025	.0130	.0007	.0014	.0007
SDev	.0107	.0006	.0045	.1212	.0011	.0006	.0006
%RSD	1012.	59.27	182.1	929.8	152.7	38.29	84.06
#1	.0087	.0014	.0007	-.0727	.0015	.0018	.0012
#2	-.0065	.0006	-.0057	.0988	-.0001	.0011	.0003
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0100	.0050	.0100	.1000	.0050	.0100	.0050
Low	-.0100	-.0050	-.0100	-.1000	-.0050	-.0100	-.0050

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0002	.0006
SDev	.0002	.0007
%RSD	77.55	109.6
#1	.0003	.0001
#2	.0001	.0011
Errors	LC Pass	LC Pass
High	.0050	.0050
Low	-.0050	-.0050

010736

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1486290	10000	--	--	--	--	--
SDev	10183.75	.0000000	--	--	--	--	--
%RSD	.6851793	.0000000	--	--	--	--	--
#1	1479089	10000	--	--	--	--	--
#2	1493491	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 590214F DF100 Operator:
Run Time: 02/08/16 16:43:00
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0014	.4996	-.0009	41.83	.0445	-.0000	-.0190
SDev	.0012	.0103	.0044	.27	.0001	.0001	.0095
%RSD	81.45	2.067	462.4	.6383	.1290	176.7	49.93
#1	-.0023	.4923	-.0040	41.64	.0445	-.0001	-.0258
#2	-.0006	.5069	.0021	42.02	.0446	.0000	-.0123

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.3298	-.0001	.0128	.0000	.0060	.3033	.1411
SDev	.0014	.0002	.0010	.0029	.0008	.0487	.0559
%RSD	.4324	362.8	7.706	6678.	13.95	16.07	39.61
#1	.3288	-.0002	.0121	-.0020	.0054	.2688	.1016
#2	.3308	.0001	.0135	.0021	.0066	.3377	.1807

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0008	14.61	.1286	.0119	.0013	-.0671	.1226
SDev	.0047	.04	.0043	.0001	.0000	.7402	.0156
%RSD	566.3	.2656	3.321	.6759	3.418	1103.	12.71
#1	-.0042	14.64	.1255	.0118	.0012	-.5905	.1116
#2	.0025	14.58	.1316	.0119	.0013	.4563	.1337

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0174	-.0030	-.0001	-.0033	.0111	.0080	102.8
SDev	.0019	.0023	.0008	.0024	.0023	.0007	.3
%RSD	10.96	77.03	610.1	72.06	21.13	8.626	.2979
#1	.0187	-.0047	.0004	-.0050	.0127	.0085	102.5
#2	.0160	-.0014	-.0007	-.0016	.0094	.0075	103.0

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0095	-.0012	2.798	-.0011	.0023	-.0004	.0019
SDev	.0021	.0008	.074	.0003	.0013	.0024	.0001
%RSD	22.63	66.13	2.640	23.08	53.36	676.1	3.354
#1	.0080	-.0018	2.746	-.0013	.0015	.0013	.0019
#2	.0110	-.0007	2.850	-.0009	.0032	-.0020	.0020

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0021	.0370	-.0052	.0242	.0044	-.0045	.0005
SDev	.0052	.0003	.0025	.1862	.0003	.0041	.0001
%RSD	247.3	.8605	47.85	769.3	7.970	90.29	24.00
#1	.0016	.0368	-.0069	-.1075	.0042	-.0016	.0004
#2	-.0058	.0373	-.0034	.1559	.0047	-.0074	.0005

010738

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0012	.0305
SDev	.0001	.0027
%RSD	10.19	8.727
#1	.0011	.0286
#2	.0013	.0324

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1489556	10000	--	--	--	--	--
SDev	4347.292	.0000000	--	--	--	--	--
%RSD	.2918516	.0000000	--	--	--	--	--
#1	1486482	10000	--	--	--	--	--
#2	1492630	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 591000F DF100 Operator:
Run Time: 02/08/16 16:48:06
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0019	.5180	-.0007	41.03	1.050	-.0000	-.0090
SDev	.0017	.0096	.0009	.26	.000	.0001	.0047
%RSD	91.94	1.859	126.5	.6315	.0063	163.8	52.34
#1	-.0031	.5112	-.0001	40.85	1.050	-.0001	-.0123
#2	-.0007	.5249	-.0014	41.22	1.050	.0000	-.0057

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1560	.0000	.0020	.0002	.0010	.3117	.1415
SDev	.0021	.0001	.0011	.0024	.0005	.0305	.0501
%RSD	1.340	251.0	57.16	1518.	48.94	9.773	35.44
#1	.1545	-.0000	.0012	-.0015	.0006	.2901	.1060
#2	.1575	.0001	.0028	.0018	.0013	.3332	.1769

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0003	14.42	.0718	.0102	.0012	-.0820	.0912
SDev	.0037	.03	.0059	.0001	.0006	.5976	.0122
%RSD	1402.	.1890	8.263	.9001	49.57	728.9	13.35
#1	-.0024	14.40	.0676	.0101	.0008	-.5045	.0826
#2	.0029	14.44	.0760	.0103	.0016	.3406	.0999

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0015	.0209	.0199	-.0047	.0902	.0028	103.0
SDev	.0010	.0068	.0030	.0034	.0145	.0044	.0
%RSD	67.16	32.72	15.10	73.90	16.08	157.0	.0225
#1	.0008	.0160	.0221	-.0071	.0800	-.0003	103.0
#2	.0022	.0257	.0178	-.0022	.1005	.0059	103.0

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0089	-.0009	2.069	.0202	.0024	-.0020	.0096
SDev	.0051	.0019	.019	.0003	.0004	.0023	.0001
%RSD	57.95	210.5	.9370	1.329	18.66	115.6	1.084
#1	.0052	.0004	2.055	.0200	.0020	-.0036	.0096
#2	.0125	-.0023	2.082	.0204	.0027	-.0004	.0097

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0036	.0290	-.0025	.0178	.0005	-.0000	.0000
SDev	.0009	.0001	.0018	.1369	.0004	.0056	.0001
%RSD	24.05	.1807	69.62	771.1	81.12	25880.	269.6
#1	-.0030	.0290	-.0013	-.0790	.0002	-.0040	-.0000
#2	-.0043	.0291	-.0038	.1145	.0008	.0040	.0001

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0012	.0027
SDev	.0000	.0014
%RSD	.5061	51.19
#1	.0012	.0017
#2	.0012	.0036

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1493362	10000	--	--	--	--	--
SDev	366.9884	.0000000	--	--	--	--	--
%RSD	.0245746	.0000000	--	--	--	--	--
#1	1493621	10000	--	--	--	--	--
#2	1493102	10000	--	--	--	--	--

Method: DAILY2 Sample Name: CRI Operator:
Run Time: 02/08/16 16:53:13
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0096	.1071	.0069	H.5078	.0051	.0049	.0102
SDev	.0001	.0001	.0002	.0814	.0002	.0001	.0013
%RSD	1.089	.1054	2.833	16.02	4.535	1.122	12.62
#1	.0097	.1072	.0071	H.5654	.0052	.0049	L.0093
#2	.0096	.1070	.0068	H.4503	.0049	.0050	.0111
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass
High	.0150	.1500	.0150	.0600	.0075	.0075	.0300
Low	.0050	.0500	.0050	.0200	.0025	.0025	.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1020	.0051	.0041	.0040	.0041	.1094	.2887
SDev	.0002	.0000	.0005	.0025	.0007	.0505	.0451
%RSD	.1664	.3411	11.32	60.98	18.03	46.19	15.62
#1	.1022	.0051	.0044	L.0023	.0046	.0737	.2568
#2	.1019	.0051	.0037	.0058	.0035	.1452	.3206
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.1500	.0075	.0075	.0075	.0075	.1500	.7500
Low	.0500	.0025	.0025	.0025	.0025	.0500	.2500

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0082	.0102	.0475	.0050	.0047	L-.0366	.2435
SDev	.0037	.0008	.0035	.0001	.0006	.5314	.0139
%RSD	45.46	8.089	7.378	1.942	12.89	1452.	5.720
#1	.0056	.0107	.0500	.0051	.0051	L-.4124	.2336
#2	.0108	.0096	.0450	.0049	.0042	.3391	.2533
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass
High	.0150	.0150	.1000	.0075	.0075	.5000	.5000
Low	.0050	.0050	.0250	.0025	.0025	.1250	.1250

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0034	.0049	.0016	.0197	.0343	.0273	102.9
SDev	.0001	.0029	.0046	.0017	.0040	.0048	.5
%RSD	1.526	59.07	283.3	8.608	11.82	17.46	.4698
#1	.0034	.0028	.0049	.0185	.0372	.0240	102.6
#2	.0034	.0069	-.0016	.0209	.0314	H.0307	103.3
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	.0075			.0300	.0750	.0300	
Low	.0025			.0100	.0250	.0100	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0183	.0118	H.6394	.0027	.0140	.0091	.0050
SDev	.0008	.0041	.0039	.0021	.0024	.0012	.0001
%RSD	4.576	34.39	.6069	77.54	17.36	13.11	1.073
#1	.0177	.0147	H.6421	.0042	H.0157	.0100	.0050
#2	.0189	.0089	H.6366	L.0012	.0123	.0083	.0050
Errors	NOCHECK	NOCHECK	LC High	LC Pass	LC Pass	LC Pass	LC Pass
High			.1500	.0075	.0150	.0150	.0075
Low			.0500	.0025	.0050	.0050	.0025

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0173	.0047	.0198	.1402	.0046	.0196	.0048
SDev	.0067	.0004	.0048	.1310	.0004	.0039	.0001
%RSD	38.82	8.188	24.18	93.44	9.340	19.99	1.385
#1	.0221	.0050	.0164	L.0475	.0049	.0224	.0049
#2	.0126	.0044	.0232	.2328	.0043	.0168	.0048
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0300	.0075	.0300	.3000	.0075	.0300	.0075
Low	.0100	.0025	.0100	.1000	.0025	.0100	.0025

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0052	.0054
SDev	.0001	.0026
%RSD	1.581	48.60
#1	.0053	.0035
#2	.0051	.0072
Errors	LC Pass	LC Pass
High	.0075	.0075
Low	.0025	.0025

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1492286	10000	--	--	--	--	--
SDev	6951.567	.0000000	--	--	--	--	--
%RSD	.4658336	.0000000	--	--	--	--	--
#1	1487370	10000	--	--	--	--	--
#2	1497201	10000	--	--	--	--	--

010741

Method: DAILY2 Sample Name: CRI-N Operator:
Run Time: 02/08/16 16:58:19
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0189	.2179	.0190	H.3576	.0101	.0099	.0321
SDev	.0011	.0077	.0004	.0139	.0002	.0001	.0054
%RSD	5.835	3.518	1.947	3.892	2.081	.6924	16.85
#1	.0181	.2125	.0187	H.3674	.0100	.0099	.0283
#2	.0197	.2233	.0193	H.3477	.0103	.0100	.0359
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass
High	.0260	.2600	.0260	.1040	.0130	.0130	.0520
Low	.0140	.1400	.0140	.0560	.0070	.0070	.0280

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2054	.0106	.0097	.0095	.0094	.2171	L.5969
SDev	.0018	.0001	.0012	.0031	.0012	.0590	.0688
%RSD	.8602	1.222	12.70	32.96	12.91	27.19	11.53
#1	.2041	.0105	.0088	.0073	.0085	.1753	L.5483
#2	.2066	.0107	.0106	.0117	.0103	.2588	L.6456
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low
High	.2600	.0130	.0130	.0130	.0130	.2600	1.300
Low	.1400	.0070	.0070	.0070	.0070	.1400	.7000

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0177	.0185	.0988	.0101	.0092	L.2953	.4682
SDev	.0054	.0002	.0063	.0002	.0006	.8442	.0159
%RSD	30.30	.9839	6.389	2.025	6.344	285.9	3.393
#1	L.0139	.0184	.0943	.0100	.0088	L-.3017	.4569
#2	.0215	.0186	.1032	.0103	.0096	H.8922	.4794
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass
High	.0260	.0260	.1300	.0130	.0130	.6500	.6500
Low	.0140	.0140	.0700	.0070	.0070	.3500	.3500

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0094	.0087	.0083	.0406	.0891	.0456	103.1
SDev	.0015	.0020	.0013	.0017	.0153	.0000	.8
%RSD	15.88	22.56	15.15	4.173	17.13	.0865	.7405
#1	.0084	.0073	.0092	.0394	.0783	.0456	103.6
#2	.0105	.0101	.0074	.0418	.0999	.0456	102.5
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	.0130			.0520	.1300	.0520	
Low	.0070			.0280	.0700	.0280	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0259	.0183	H.9094	.0085	.0208	.0188	.0100
SDev	.0043	.0020	.0056	.0002	.0001	.0032	.0001
%RSD	16.68	10.75	.6136	2.192	.6092	16.81	.5092
#1	.0289	.0169	H.9055	.0086	.0209	.0165	.0099
#2	.0228	.0197	H.9134	.0083	.0207	.0210	.0100
Errors	NOCHECK	NOCHECK	LC High	LC Pass	LC Pass	LC Pass	LC Pass
High			.2600	.0130	.0260	.0260	.0130
Low			.1400	.0070	.0140	.0140	.0070

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0382	.0094	.0344	.3355	.0088	.0466	.0099
SDev	.0027	.0003	.0035	.1737	.0005	.0043	.0002
%RSD	7.091	2.882	10.25	51.78	5.836	9.243	2.233
#1	.0401	.0092	.0319	L.2126	.0085	.0436	.0097
#2	.0363	.0096	.0369	.4583	.0092	.0497	.0100
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0520	.0130	.0520	.5200	.0130	.0520	.0130
Low	.0280	.0070	.0280	.2800	.0070	.0280	.0070

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0104	.0108
SDev	.0003	.0023
%RSD	2.685	20.98
#1	.0102	.0092
#2	.0106	.0124
Errors	LC Pass	LC Pass
High	.0130	.0130
Low	.0070	.0070

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1494256	10000	--	--	--	--	--
SDev	11022.38	.0000000	--	--	--	--	--
%RSD	.7376501	.0000000	--	--	--	--	--
#1	1502050	10000	--	--	--	--	--
#2	1486462	10000	--	--	--	--	--

Method: DAILY2 Sample Name: ICSA Operator:
Run Time: 02/08/16 17:03:25
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0029	480.2	-.0006	.2712	.0031	-.0000	.0113
SDev	.0007	1.4	.0052	.0354	.0001	.0000	.0071
%RSD	25.62	.2841	803.6	13.04	4.538	227.6	62.68
#1	-.0024	481.2	.0030	.2962	.0032	-.0000	.0164
#2	-.0034	479.2	-.0043	.2462	.0030	.0000	.0063
Errors	NOCHECK	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High		600.0					
Low		400.0					

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	452.2	.0000	-.0042	-.0006	-.0017	192.8	-.0046
SDev	3.2	.0001	.0006	.0009	.0003	1.1	.0209
%RSD	.7087	904.9	14.08	154.4	19.11	.5808	457.9
#1	454.5	.0001	-.0038	-.0012	-.0015	193.6	-.0193
#2	449.9	-.0001	-.0046	.0001	-.0019	192.0	.0102
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	NOCHECK
High	600.0					240.0	
Low	400.0					160.0	

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0019	.0034	529.1	.0224	-.0012	.2189	.1295
SDev	.0024	.0000	.6	.0000	.0020	.3761	.0136
%RSD	123.8	.6278	.1064	.0880	169.2	171.8	10.50
#1	-.0037	.0034	529.5	.0224	.0002	-.0470	.1199
#2	-.0002	.0034	528.7	.0224	-.0026	.4848	.1391
Errors	NOCHECK	NOCHECK	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High			600.0				
Low			400.0				

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0013	.1028	-.0489	.1011	-.0282	.0049	93.40
SDev	.0008	.0016	.0000	.0005	.0020	.0095	.83
%RSD	64.63	1.567	.0044	.5223	7.196	192.8	.8939
#1	-.0007	.1017	-.0489	.1015	-.0296	-.0018	92.81
#2	-.0018	.1040	-.0489	.1007	-.0267	.0116	93.99
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0097	-.0042	.7564	.0017	.0004	-.0065	.0038
SDev	.0074	.0020	.0037	.0005	.0012	.0022	.0000
%RSD	76.12	46.38	.4956	31.50	269.5	34.26	1.139
#1	.0045	-.0028	.7590	.0013	-.0004	-.0081	.0038
#2	.0149	-.0056	.7537	.0021	.0012	-.0049	.0037
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0087	.0029	.0134	.0535	-.0023	.0019	-.0000
SDev	.0014	.0002	.0068	.0902	.0001	.0005	.0001
%RSD	16.02	8.093	51.09	168.7	6.176	25.01	780.7
#1	.0097	.0031	.0085	-.0103	-.0022	.0022	.0000
#2	.0077	.0028	.0182	.1173	-.0024	.0015	-.0001
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	-.0063	.0002
SDev	.0004	.0020
%RSD	5.824	994.4
#1	-.0061	-.0012
#2	-.0066	.0016
Errors	NOCHECK	NOCHECK
High		
Low		

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1354034	10000	--	--	--	--	--
SDev	12119.10	.0000000	--	--	--	--	--
%RSD	.8950365	.0000000	--	--	--	--	--
#1	1345465	10000	--	--	--	--	--
#2	1362604	10000	--	--	--	--	--

Method: DAILY2 Sample Name: ICSAB Operator:
Run Time: 02/08/16 17:08:32
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.070	476.1	1.051	1.187	.5181	.5072	.0090
SDev	.001	.8	.008	.038	.0011	.0002	.0026
%RSD	.1259	.1608	.7936	3.222	.2104	.0380	29.22
#1	1.069	476.7	1.057	H1.214	.5189	.5074	.0072
#2	1.071	475.6	1.045	1.160	.5174	.5071	.0109
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK
High	1.200	600.0	1.200	1.200	.6000	.6000	
Low	.8000	400.0	.8000	.8000	.4000	.4000	

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	448.0	.9919	.4837	.4835	.5288	191.0	-.0207
SDev	4.0	.0011	.0011	.0004	.0001	2.3	.0345
%RSD	.8937	.1089	.2344	.0746	.0139	1.218	166.7
#1	450.8	.9912	.4829	.4832	.5288	192.7	-.0451
#2	445.2	.9927	.4845	.4837	.5287	189.4	.0037
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK
High	600.0	1.200	.6000	.6000	.6000	240.0	
Low	400.0	.8000	.4000	.4000	.4000	160.0	

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0025	1.159	525.3	.5157	1.038	.0338	.0923
SDev	.0026	.002	.1	.0003	.000	.3550	.0116
%RSD	102.2	.1797	.0192	.0666	.0331	1051.	12.53
#1	-.0044	1.160	525.4	.5159	1.037	-.2173	.0841
#2	-.0007	1.157	525.3	.5154	1.038	.2848	.1005
Errors	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK	NOCHECK
High		1.200	600.0	.6000	1.200		
Low		.8000	400.0	.4000	.8000		

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.9562	1.066	.9218	.0966	-.0354	1.081	94.10
SDev	.0012	.019	.0064	.0022	.0348	.003	.35
%RSD	.1227	1.751	.6974	2.221	98.25	.2650	.3689
#1	.9570	1.079	.9172	.0951	-.0600	1.079	93.85
#2	.9553	1.053	.9263	.0982	-.0108	1.084	94.35
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	NOCHECK
High	1.200					1.200	
Low	.8000					.8000	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.039	1.021	1.332	.9688	1.026	.9900	1.005
SDev	.020	.011	.000	.0019	.001	.0055	.001
%RSD	1.920	1.123	.0165	.1996	.0971	.5597	.0755
#1	1.053	1.013	1.332	.9701	1.025	.9860	1.005
#2	1.025	1.029	1.332	.9674	1.027	.9939	1.006
Errors	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass
High				1.200	1.200	1.200	1.200
Low				.8000	.8000	.8000	.8000

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0110	.9501	.9809	.9832	.4995	.0125	-.0003
SDev	.0001	.0007	.0065	.1305	.0011	.0019	.0000
%RSD	.9270	.0766	.6574	13.28	.2182	15.44	14.89
#1	.0110	.9506	.9854	.8908	.4987	.0111	-.0003
#2	.0109	.9496	.9763	1.075	.5002	.0139	-.0004
Errors	NOCHECK	LC Pass	LC Pass	NOCHECK	LC Pass	NOCHECK	NOCHECK
High		1.200	1.200		.6000		
Low		.8000	.8000		.4000		

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.9869	.9287
SDev	.0001	.0112
%RSD	.0133	1.204
#1	.9870	.9366
#2	.9868	.9208
Errors	LC Pass	NOCHECK
High	1.200	
Low	.8000	

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1364214	10000	--	--	--	--	--
SDev	5062.177	.0000000	--	--	--	--	--
%RSD	.3710690	.0000000	--	--	--	--	--
#1	1360635	10000	--	--	--	--	--
#2	1367794	10000	--	--	--	--	--

Method: DAILY2 Sample Name: CCV Operator:
Run Time: 02/08/16 17:13:38
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.035	10.26	5.292	5.095	9.906	1.024	4.950
SDev	.001	.02	.006	.033	.004	.000	.004
%RSD	.1166	.1525	.1095	.6532	.0426	.0137	.0840
#1	1.036	10.27	5.288	5.071	9.909	1.025	4.947
#2	1.034	10.25	5.296	5.118	9.903	1.024	4.953
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.100	11.00	5.500	5.500	11.00	1.100	5.500
Low	.9000	9.000	4.500	4.500	9.000	.9000	4.500

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.47	1.038	5.048	1.978	2.013	9.949	19.65
SDev	.00	.001	.009	.000	.002	.044	.04
%RSD	.0199	.1000	.1803	.0077	.0773	.4456	.1870
#1	20.47	1.037	5.054	1.978	2.014	9.918	19.62
#2	20.46	1.038	5.041	1.978	2.012	9.981	19.67
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.00	1.100	5.500	2.200	2.200	11.00	22.00
Low	18.00	.9000	4.500	1.800	1.800	9.000	18.00

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.983	5.261	20.52	1.006	4.950	29.24	30.11
SDev	.008	.016	.04	.001	.016	.47	.07
%RSD	.1518	.3119	.1876	.1172	.3312	1.608	.2476
#1	4.989	5.272	20.55	1.007	4.938	28.91	30.17
#2	4.978	5.249	20.49	1.005	4.961	29.57	30.06
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.500	5.500	22.00	1.100	5.500	33.00	33.00
Low	4.500	4.500	18.00	.9000	4.500	27.00	27.00

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	4.939	5.008	4.984	.9652	.9796	1.019	101.0
SDev	.004	.022	.007	.0045	.0175	.007	.2
%RSD	.0845	.4439	.1451	.4630	1.785	.7120	.2140
#1	4.942	5.023	4.989	.9620	.9920	1.014	100.9
#2	4.936	4.992	4.979	.9683	.9673	1.024	101.2
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	5.500			1.100	1.100	1.100	
Low	4.500			.9000	.9000	.9000	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

010754

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.295	5.272	4.704	4.987	5.275	5.012	4.881
SDev	.039	.038	.001	.012	.013	.001	.012
%RSD	.7336	.7276	.0247	.2450	.2391	.0193	.2445
#1	5.323	5.245	4.703	4.995	5.266	5.012	4.890
#2	5.268	5.299	4.705	4.978	5.284	5.011	4.873
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			5.500	5.500	5.500	5.500	5.500
Low			4.500	4.500	4.500	4.500	4.500

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.014	4.765	5.168	4.901	5.056	H1.117	4.977
SDev	.004	.004	.002	.170	.005	.001	.013
%RSD	.4061	.0774	.0445	3.466	.0909	.0453	.2549
#1	1.017	4.768	5.170	4.781	5.059	H1.117	4.986
#2	1.011	4.763	5.167	5.021	5.052	H1.117	4.968
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	1.100	5.500	5.500	5.500	5.500	1.100	5.500
Low	.9000	4.500	4.500	4.500	4.500	.9000	4.500

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	1.049	4.888
SDev	.001	.001
%RSD	.0861	.0123
#1	1.049	4.887
#2	1.050	4.888
Errors	LC Pass	LC Pass
High	1.100	5.500
Low	.9000	4.500

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1464641	10000	--	--	--	--	--
SDev	3063.186	.0000000	--	--	--	--	--
%RSD	.2091425	.0000000	--	--	--	--	--
#1	1462475	10000	--	--	--	--	--
#2	1466807	10000	--	--	--	--	--

Analysis Report 02/08/16 05:23:36 PM page 1

Method: DAILY2 Sample Name: CCB Operator:
Run Time: 02/08/16 17:18:44
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0010	.0004	-.0028	H.0881	.0003	-.0000	-.0069
SDev	.0008	.0023	.0047	.0111	.0000	.0000	.0015
%RSD	83.77	597.5	169.2	12.56	10.17	86.63	22.07
#1	-.0015	-.0013	L-.0061	H.0959	.0004	-.0001	-.0080
#2	-.0004	.0020	.0005	H.0802	.0003	-.0000	-.0058
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass
High	.0050	.0500	.0050	.0500	.0050	.0050	.0100
Low	-.0050	-.0500	-.0050	-.0500	-.0050	-.0050	-.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0136	-.0001	-.0003	-.0011	-.0003	.0128	-.0098
SDev	.0013	.0002	.0003	.0021	.0001	.0510	.0323
%RSD	9.477	224.3	92.94	199.9	40.94	399.5	331.5
#1	.0127	-.0002	-.0005	-.0025	-.0003	-.0233	-.0326
#2	.0145	.0001	-.0001	.0004	-.0002	.0488	.0131
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0500	.0050	.0050	.0050	.0050	.0500	.1000
Low	-.0500	-.0050	-.0050	-.0050	-.0050	-.0500	-.1000

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0011	.0007	.0039	-.0000	.0013	-.0302	.0095
SDev	.0033	.0001	.0019	.0000	.0005	.2603	.0111
%RSD	294.9	9.146	49.44	3.457	38.24	862.0	117.3
#1	-.0034	.0007	.0052	-.0000	.0009	L-.2143	.0016
#2	.0012	.0007	.0025	-.0000	.0016	H.1539	.0174
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0050	.0050	.0500	.0050	.0050	.0500	.0500
Low	-.0050	-.0050	-.0500	-.0050	-.0050	-.0500	-.0500

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0006	.0003	-.0021	-.0010	.0006	.0031	102.2
SDev	.0018	.0003	.0037	.0066	.0037	.0026	.4
%RSD	305.7	76.22	180.2	640.3	579.9	86.49	.3594
#1	-.0019	.0002	.0006	L-.0057	-.0020	.0049	102.0
#2	.0007	.0005	-.0047	.0036	.0032	.0012	102.5
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	.0050			.0050	.0200	.0100	
Low	-.0050			-.0050	-.0200	-.0100	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0038	-.0011	-.0016	-.0013	.0006	.0008	.0001
SDev	.0025	.0004	.0001	.0024	.0011	.0000	.0001
%RSD	66.56	33.90	6.711	190.1	190.5	3.837	46.36
#1	.0020	-.0013	-.0017	.0004	-.0002	.0008	.0001
#2	.0056	-.0008	-.0015	-.0029	.0013	.0008	.0001
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			.0100	.0050	.0050	.0100	.0050
Low			-.0100	-.0050	-.0050	-.0100	-.0050

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0028	.0000	-.0046	-.0402	-.0007	.0012	-.0000
SDev	.0039	.0000	.0056	.1259	.0000	.0037	.0000
%RSD	141.4	124.1	121.1	313.1	3.583	309.4	184.3
#1	-.0000	.0001	-.0085	L-.1292	-.0007	.0038	-.0001
#2	-.0055	.0000	-.0007	.0488	-.0007	-.0014	.0000
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0100	.0050	.0100	.1000	.0050	.0100	.0050
Low	-.0100	-.0050	-.0100	-.1000	-.0050	-.0100	-.0050

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0001	.0002
SDev	.0001	.0026
%RSD	58.52	1116.
#1	.0001	-.0016
#2	.0001	.0020
Errors	LC Pass	LC Pass
High	.0050	.0050
Low	-.0050	-.0050

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1481891	10000	--	--	--	--	--
SDev	5347.142	.0000000	--	--	--	--	--
%RSD	.3608323	.0000000	--	--	--	--	--
#1	1478110	10000	--	--	--	--	--
#2	1485672	10000	--	--	--	--	--

Method: DAILY2 Sample Name: PB16A27KE2 DF10 Operator:
Run Time: 02/08/16 17:23:50
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0027	-.0030	.0034	339.1	.0005	.0000	-.0116
SDev	.0005	.0008	.0007	5.1	.0000	.0001	.0044
%RSD	17.53	26.41	21.02	1.499	3.423	414.2	38.31
#1	-.0031	-.0036	.0039	342.7	.0004	-.0000	-.0147
#2	-.0024	-.0024	.0029	335.5	.0005	.0001	-.0085

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0177	.0004	.0025	-.0002	.0009	.0234	.0031
SDev	.0016	.0003	.0001	.0031	.0008	.0693	.0575
%RSD	9.141	60.60	4.398	1630.	86.49	296.4	1885.
#1	.0166	.0006	.0025	-.0024	.0004	-.0256	-.0376
#2	.0189	.0003	.0024	.0020	.0015	.0724	.0437

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0024	30.19	.0016	.0001	.0030	-.1211	.0282
SDev	.0054	.18	.0049	.0000	.0006	.6705	.0206
%RSD	226.6	.5929	304.9	14.48	20.99	553.5	73.07
#1	-.0062	30.31	.0051	.0001	.0025	-.5953	.0136
#2	.0014	30.06	-.0019	.0001	.0034	.3530	.0428

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0005	-.0154	-.0042	-.0014	-.0322	.0056	99.17
SDev	.0008	.0006	.0014	.0053	.0005	.0045	.68
%RSD	160.9	4.076	32.97	383.1	1.604	80.43	.6814
#1	.0010	-.0149	-.0032	-.0052	-.0326	.0024	98.69
#2	-.0001	-.0158	-.0051	.0024	-.0319	.0088	99.64

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0105	.0038	.0394	-.0079	.0060	-.0001	.0002
SDev	.0034	.0024	.0005	.0011	.0027	.0007	.0000
%RSD	32.45	63.27	1.266	14.22	45.22	471.5	13.51
#1	.0081	.0021	.0397	-.0071	.0041	-.0006	.0002
#2	.0130	.0054	.0390	-.0087	.0079	.0003	.0002

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0048	.0002	-.0051	.1057	-.0005	.0008	-.0000
SDev	.0040	.0001	.0003	.1817	.0000	.0008	.0001
%RSD	84.05	29.38	5.401	171.9	5.237	96.51	147.8
#1	-.0019	.0002	-.0049	-.0228	-.0005	.0002	-.0001
#2	-.0076	.0002	-.0053	.2341	-.0005	.0013	.0000

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0004	.0015
SDev	.0003	.0037
%RSD	81.97	239.2
#1	.0006	-.0011
#2	.0002	.0041

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1437682	10000	--	--	--	--	--
SDev	9791.308	.0000000	--	--	--	--	--
%RSD	.6810480	.0000000	--	--	--	--	--
#1	1430759	10000	--	--	--	--	--
#2	1444606	10000	--	--	--	--	--

Method: DAILY2 Sample Name: LCS16A27KE3 DF10 Operator:
Run Time: 02/08/16 17:28:56
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0027	6.994	-.0005	334.2	.0853	.0002	-.0113
SDev	.0004	.178	.0030	6.7	.0023	.0000	.0109
%RSD	15.07	2.539	589.4	1.990	2.735	14.16	96.71
#1	-.0030	7.120	.0016	338.9	.0869	.0002	-.0036
#2	-.0024	6.869	-.0026	329.5	.0836	.0003	-.0190

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.6912	.0002	.0035	.0006	.0016	1.357	3.964
SDev	.0156	.0000	.0003	.0016	.0005	.005	.057
%RSD	2.259	22.75	9.224	252.3	30.79	.3649	1.433
#1	.7022	.0002	.0037	-.0005	.0020	1.360	4.004
#2	.6801	.0001	.0032	.0017	.0013	1.353	3.924

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0001	30.14	.1435	.0379	.0022	2.911	4.261
SDev	.0036	.15	.0066	.0009	.0016	.236	.092
%RSD	2582.	.4990	4.587	2.403	73.94	8.095	2.163
#1	-.0027	30.25	.1482	.0385	.0034	2.745	4.327
#2	.0024	30.04	.1389	.0372	.0011	3.078	4.196

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0011	-.0102	-.0025	-.0033	-.0174	.0057	99.29
SDev	.0009	.0038	.0011	.0006	.0195	.0003	.64
%RSD	75.90	37.03	44.44	18.71	112.0	6.061	.6467
#1	.0017	-.0128	-.0017	-.0028	-.0036	.0054	98.83
#2	.0005	-.0075	-.0033	-.0037	-.0311	.0059	99.74

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0075	.0004	28.76	-.0050	.0028	.0039	.0061
SDev	.0004	.0073	.56	.0005	.0050	.0007	.0001
%RSD	6.054	1649.	1.963	10.24	178.9	16.98	2.365
#1	.0078	.0056	29.16	-.0054	.0063	.0034	.0062
#2	.0072	-.0047	28.36	-.0047	-.0007	.0043	.0060

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0033	.1285	-.0029	.1032	-.0001	.0028	.0035
SDev	.0061	.0032	.0046	.1012	.0010	.0008	.0003
%RSD	184.0	2.517	157.8	98.14	1659.	29.09	9.284
#1	.0010	.1308	.0003	.0316	.0006	.0022	.0037
#2	-.0077	.1262	-.0062	.1747	-.0008	.0034	.0033

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0044	.0276
SDev	.0002	.0010
%RSD	3.786	3.599
#1	.0045	.0269
#2	.0042	.0283

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1439326	10000	--	--	--	--	--
SDev	9290.676	.0000000	--	--	--	--	--
%RSD	.6454877	.0000000	--	--	--	--	--
#1	1432757	10000	--	--	--	--	--
#2	1445896	10000	--	--	--	--	--

Method: DAILY2 Sample Name: LCS16A27KE4 DF10 Operator:
Run Time: 02/08/16 17:34:02
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0024	8.838	.0009	367.2	.0171	.0000	-.0097
SDev	.0003	.240	.0015	7.3	.0005	.0001	.0025
%RSD	10.51	2.715	161.1	1.998	3.082	132.1	25.88
#1	-.0022	9.008	.0019	372.4	.0175	.0000	-.0115
#2	-.0026	8.668	-.0001	362.0	.0168	.0001	-.0079

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	8.460	.0001	.0072	.0324	.0098	6.951	.2102
SDev	.168	.0001	.0002	.0018	.0004	.094	.0491
%RSD	1.982	132.2	2.960	5.693	3.893	1.359	23.36
#1	8.578	.0000	.0070	.0311	.0101	7.018	.1755
#2	8.341	.0002	.0073	.0337	.0096	6.884	.2449

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0037	29.90	4.960	.1261	.0018	1.344	2.061
SDev	.0049	.10	.139	.0032	.0004	.632	.042
%RSD	133.6	.3481	2.801	2.575	20.01	47.06	2.029
#1	-.0072	29.97	5.058	.1284	.0016	.8965	2.090
#2	-.0002	29.82	4.862	.1238	.0021	1.791	2.031

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0140	-.0081	-.0023	.0002	-.0022	-.0004	99.34
SDev	.0011	.0011	.0001	.0018	.0511	.0066	.45
%RSD	8.173	13.22	4.932	997.1	2314.	1722.	.4502
#1	.0148	-.0089	-.0024	-.0011	-.0384	.0043	99.03
#2	.0132	-.0074	-.0022	.0014	.0339	-.0050	99.66

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0186	.0001	19.75	-.0042	.0063	-.0024	.0162
SDev	.0068	.0049	.46	.0004	.0010	.0020	.0004
%RSD	36.73	5685.	2.308	10.25	15.39	82.27	2.650
#1	.0234	-.0034	20.07	-.0045	.0056	-.0038	.0165
#2	.0138	.0035	19.43	-.0039	.0069	-.0010	.0159

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0104	.6592	-.0036	.0994	.0240	.0057	.0015
SDev	.0071	.0181	.0038	.1734	.0014	.0056	.0001
%RSD	68.38	2.749	107.4	174.5	5.626	99.44	6.945
#1	-.0054	.6720	-.0009	-.0232	.0249	.0017	.0016
#2	-.0155	.6464	-.0063	.2220	.0230	.0097	.0014

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0090	.0064
SDev	.0001	.0023
%RSD	1.676	35.62
#1	.0091	.0048
#2	.0089	.0080

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1440139	10000	--	--	--	--	--
SDev	6612.863	.0000000	--	--	--	--	--
%RSD	.4591822	.0000000	--	--	--	--	--
#1	1435463	10000	--	--	--	--	--
#2	1444815	10000	--	--	--	--	--

Analysis Report 02/08/16 05:44:01 PM

Method: DAILY2 Sample Name: 588049F DF10 Operator:
Run Time: 02/08/16 17:39:09
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0023	2.420	.0095	365.2	25.52	.0001	-.0060
SDev	.0001	.003	.0031	.1	.04	.0000	.0009
%RSD	6.079	.1108	32.52	.0239	.1611	29.09	15.15
#1	-.0024	2.422	.0116	365.3	25.50	.0001	-.0067
#2	-.0022	2.419	.0073	365.2	25.55	.0001	-.0054

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.616	.0003	.0796	.0054	.0316	1.441	1.085
SDev	.012	.0000	.0002	.0023	.0013	.027	.033
%RSD	.3257	4.090	.2096	42.79	4.185	1.854	3.039
#1	3.624	.0003	.0795	.0038	.0326	1.422	1.061
#2	3.608	.0003	.0797	.0070	.0307	1.459	1.108

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0039	30.14	.7079	.0401	.0166	.2691	.6011
SDev	.0032	.28	.0045	.0001	.0010	.4290	.0121
%RSD	81.36	.9208	.6420	.3456	5.847	159.4	2.011
#1	.0017	30.34	.7111	.0402	.0159	-.0343	.5926
#2	.0061	29.94	.7047	.0400	.0173	.5724	.6096

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0790	.2175	.2226	-.0082	.1024	.0130	98.87
SDev	.0009	.0024	.0016	.0018	.0230	.0016	.68
%RSD	1.113	1.101	.7079	22.05	22.40	12.53	.6902
#1	.0784	.2192	.2238	-.0094	.1187	.0142	98.39
#2	.0796	.2158	.2215	-.0069	.0862	.0119	99.35

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0107	.0046	14.59	.2207	.0067	.0016	.2979
SDev	.0097	.0016	.28	.0019	.0021	.0003	.0000
%RSD	90.09	35.65	1.906	.8380	31.90	21.39	.0135
#1	.0176	.0035	14.39	.2220	.0082	.0019	.2979
#2	.0039	.0058	14.79	.2194	.0052	.0014	.2979

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0082	.1764	-.0069	.1834	.0190	.0018	.0018
SDev	.0109	.0003	.0033	.1041	.0019	.0040	.0003
%RSD	132.5	.1589	48.44	56.79	10.14	216.5	16.44
#1	.0159	.1766	-.0092	.1097	.0204	.0046	.0020
#2	.0005	.1762	-.0045	.2570	.0176	-.0010	.0016

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0117	.0230
SDev	.0001	.0021
%RSD	.5621	9.226
#1	.0116	.0215
#2	.0117	.0245

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1433358	10000	--	--	--	--	--
SDev	9928.486	.0000000	--	--	--	--	--
%RSD	.6926729	.0000000	--	--	--	--	--
#1	1426338	10000	--	--	--	--	--
#2	1440379	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 588556F DF10 Operator:
Run Time: 02/08/16 17:44:15
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0018	2.424	.0010	346.7	14.88	.0001	-.0107
SDev	.0020	.004	.0082	.2	.06	.0001	.0077
%RSD	106.1	.1617	808.6	.0589	.3716	50.48	72.45
#1	-.0032	2.427	-.0048	346.8	14.92	.0001	-.0162
#2	-.0005	2.421	.0068	346.5	14.84	.0002	-.0052

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	6.231	.0003	.1073	.0057	.0575	1.764	.9834
SDev	.032	.0003	.0009	.0037	.0007	.057	.0556
%RSD	.5135	84.57	.8228	65.22	1.140	3.235	5.650
#1	6.254	.0001	.1067	.0031	.0580	1.724	.9441
#2	6.208	.0005	.1079	.0083	.0571	1.804	1.023

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0030	30.59	.9178	.0764	.0162	.4567	.4260
SDev	.0056	.01	.0020	.0003	.0001	.7889	.0150
%RSD	186.5	.0435	.2159	.3270	.7824	172.7	3.528
#1	-.0010	30.58	.9164	.0766	.0161	-.1011	.4154
#2	.0069	30.60	.9192	.0763	.0163	1.015	.4366

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.1265	.2734	.2712	-.0033	.3645	-.0020	97.79
SDev	.0004	.0030	.0040	.0092	.0034	.0037	.14
%RSD	.3354	1.093	1.487	275.9	.9189	186.3	.1431
#1	.1268	.2713	.2740	-.0098	.3622	-.0046	97.89
#2	.1262	.2755	.2683	.0032	.3669	.0006	97.69

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0198	-.0018	11.79	.2716	.0054	.0042	.1880
SDev	.0078	.0028	.15	.0017	.0045	.0009	.0008
%RSD	39.21	154.7	1.278	.6219	83.31	20.32	.4025
#1	.0143	-.0039	11.69	.2728	.0022	.0036	.1885
#2	.0253	.0002	11.90	.2705	.0086	.0049	.1874

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0004	.1640	-.0089	.1806	.0173	.0008	.0018
SDev	.0053	.0009	.0017	.1660	.0008	.0018	.0002
%RSD	1281.	.5319	19.36	91.91	4.395	210.2	9.559
#1	.0041	.1646	-.0102	.0632	.0179	-.0004	.0019
#2	-.0033	.1634	-.0077	.2980	.0168	.0021	.0017

010763

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0207	.0216
SDev	.0002	.0030
%RSD	.9841	13.76
#1	.0206	.0195
#2	.0209	.0237

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1417627	10000	--	--	--	--	--
SDev	1972.828	.0000000	--	--	--	--	--
%RSD	.1391641	.0000000	--	--	--	--	--
#1	1419022	10000	--	--	--	--	--
#2	1416232	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 588556FD DF10 Operator:
Run Time: 02/08/16 17:49:22
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0024	2.459	.0040	344.2	16.22	.0001	-.0123
SDev	.0023	.011	.0005	1.3	.01	.0001	.0069
%RSD	96.26	.4648	11.41	.3709	.0432	40.36	56.40
#1	-.0040	2.451	.0044	343.3	16.23	.0001	-.0172
#2	-.0008	2.467	.0037	345.1	16.22	.0002	-.0074

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.788	.0004	.1136	.0051	.0551	1.754	.9263
SDev	.001	.0003	.0017	.0023	.0001	.049	.0494
%RSD	.0231	70.17	1.528	44.79	.1930	2.781	5.336
#1	5.787	.0002	.1124	.0035	.0551	1.719	.8914
#2	5.789	.0005	.1148	.0067	.0552	1.788	.9613

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0024	31.03	.9421	.0733	.0129	.2468	.4158
SDev	.0049	.07	.0057	.0000	.0002	.4922	.0144
%RSD	201.9	.2243	.6049	.0298	1.602	199.5	3.457
#1	-.0010	31.08	.9381	.0733	.0128	-.1013	.4056
#2	.0059	30.99	.9461	.0733	.0131	.5948	.4260

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.1278	.1898	.1931	-.0027	.2994	.0075	96.60
SDev	.0006	.0015	.0008	.0076	.0184	.0043	.07
%RSD	.4411	.7931	.4267	284.8	6.154	57.75	.0755
#1	.1282	.1888	.1936	-.0081	.3125	.0044	96.55
#2	.1274	.1909	.1925	.0027	.2864	.0105	96.65

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0119	-.0003	12.51	.1918	.0038	.0023	.1994
SDev	.0009	.0042	.29	.0001	.0025	.0009	.0003
%RSD	7.456	1384.	2.302	.0235	65.57	40.48	.1760
#1	.0126	-.0033	12.30	.1918	.0020	.0029	.1992
#2	.0113	.0026	12.71	.1918	.0055	.0016	.1997

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0041	.1672	-.0050	.1529	.0184	.0035	.0019
SDev	.0066	.0001	.0011	.1796	.0001	.0029	.0002
%RSD	159.7	.0315	22.05	117.4	.4698	82.20	9.087
#1	.0088	.1672	-.0042	.0259	.0184	.0015	.0020
#2	-.0005	.1672	-.0058	.2799	.0183	.0056	.0017

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0177	.0217
SDev	.0002	.0023
%RSD	1.007	10.55
#1	.0176	.0201
#2	.0178	.0234

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1400440	10000	--	--	--	--	--
SDev	1038.033	.0000000	--	--	--	--	--
%RSD	.0741219	.0000000	--	--	--	--	--
#1	1399706	10000	--	--	--	--	--
#2	1401174	10000	--	--	--	--	--

Analysis Report 02/08/16 05:59:21 PM page 1

Method: DAILY2 Sample Name: 588556FL DF50 Operator:
Run Time: 02/08/16 17:54:28
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0016	.4969	-.0019	78.50	3.102	-.0000	-.0070
SDev	.0011	.0066	.0050	.11	.002	.0000	.0087
%RSD	70.36	1.337	272.4	.1373	.0729	131.6	124.2
#1	-.0024	.4922	-.0054	78.57	3.100	-.0001	-.0131
#2	-.0008	.5016	.0017	78.42	3.103	-.0000	-.0009

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.288	.0002	.0215	.0007	.0113	.3650	.1515
SDev	.004	.0001	.0006	.0021	.0006	.0222	.0241
%RSD	.3171	66.86	2.933	318.0	5.321	6.091	15.91
#1	1.286	.0001	.0211	-.0008	.0117	.3492	.1344
#2	1.291	.0002	.0219	.0022	.0109	.3807	.1685

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0002	24.19	.1857	.0155	.0040	-.0038	.0803
SDev	.0024	.07	.0056	.0001	.0019	.3741	.0103
%RSD	1096.	.2941	3.013	.3962	46.48	9910.	12.77
#1	-.0015	24.24	.1817	.0156	.0054	-.2683	.0731
#2	.0019	24.14	.1896	.0155	.0027	.2607	.0876

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0253	.0495	.0542	-.0053	.0642	.0016	98.90
SDev	.0003	.0052	.0020	.0092	.0048	.0008	.12
%RSD	1.304	10.55	3.663	174.6	7.482	47.25	.1172
#1	.0251	.0458	.0556	-.0118	.0608	.0021	98.82
#2	.0255	.0532	.0528	.0012	.0676	.0011	98.98

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0032	-.0001	2.372	.0526	.0010	-.0000	.0382
SDev	.0007	.0029	.001	.0004	.0017	.0039	.0002
%RSD	22.48	1972.	.0264	.7912	173.0	7755.	.4124
#1	.0027	.0019	2.372	.0523	.0021	-.0028	.0381
#2	.0037	-.0022	2.373	.0529	-.0002	.0027	.0383

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0023	.0331	.0022	.0469	.0037	.0000	.0004
SDev	.0065	.0000	.0006	.0789	.0003	.0041	.0001
%RSD	279.4	.0518	25.23	168.2	6.851	8586.	19.60
#1	.0023	.0331	.0018	-.0089	.0039	-.0028	.0004
#2	-.0069	.0331	.0026	.1027	.0036	.0029	.0003

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0043	.0038
SDev	.0000	.0018
%RSD	.4560	47.53
#1	.0043	.0025
#2	.0043	.0051

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1433726	10000	--	--	--	--	--
SDev	1707.663	.0000000	--	--	--	--	--
%RSD	.1191066	.0000000	--	--	--	--	--
#1	1432519	10000	--	--	--	--	--
#2	1434934	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 588556FAS DF10 Operator:
Run Time: 02/08/16 17:59:35
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0472	4.368	2.126	345.6	16.76	.0510	-.0175
SDev	.0004	.005	.001	1.0	.01	.0001	.0010
%RSD	.8058	.1087	.0487	.2860	.0690	.2266	5.940
#1	.0474	4.365	2.125	344.9	16.75	.0509	-.0183
#2	.0469	4.372	2.127	346.3	16.77	.0511	-.0168

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	26.52	.0503	.6114	.1988	.3102	2.796	27.93
SDev	.08	.0001	.0003	.0016	.0005	.014	.07
%RSD	.3067	.1832	.0522	.8010	.1595	.4870	.2627
#1	26.58	.0502	.6112	.1976	.3106	2.786	27.88
#2	26.46	.0503	.6116	.1999	.3099	2.806	27.99

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0012	31.84	21.08	.5772	.0162	19.94	25.49
SDev	.0021	.19	.02	.0007	.0008	.30	.05
%RSD	176.2	.5992	.0833	.1219	4.684	1.516	.1787
#1	-.0003	31.97	21.07	.5767	.0167	19.72	25.52
#2	.0026	31.70	21.09	.5777	.0156	20.15	25.45

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.6131	.7612	.7658	-.0033	.3767	.5377	94.24
SDev	.0016	.0035	.0026	.0037	.0196	.0025	.41
%RSD	.2650	.4629	.3345	112.2	5.196	.4709	.4342
#1	.6119	.7637	.7676	-.0059	.3628	.5359	93.96
#2	.6142	.7588	.7640	-.0007	.3905	.5395	94.53

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.094	2.083	11.84	.7636	2.085	.0010	.1883
SDev	.013	.008	.22	.0029	.001	.0002	.0003
%RSD	.6214	.3614	1.897	.3768	.0327	18.70	.1673
#1	2.103	2.078	11.68	.7656	2.084	.0012	.1881
#2	2.085	2.088	12.00	.7615	2.085	.0009	.1886

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0214	.1644	2.049	.1262	.5212	.0077	.0017
SDev	.0066	.0004	.005	.1193	.0003	.0023	.0003
%RSD	30.96	.2558	.2320	94.59	.0619	29.48	18.58
#1	-.0167	.1647	2.046	.0418	.5209	.0093	.0019
#2	-.0260	.1641	2.053	.2106	.5214	.0061	.0014

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.5405	.0139
SDev	.0000	.0016
%RSD	.0044	11.78
#1	.5405	.0127
#2	.5405	.0151

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1366287	10000	--	--	--	--	--
SDev	5900.099	.0000000	--	--	--	--	--
%RSD	.4318345	.0000000	--	--	--	--	--
#1	1362115	10000	--	--	--	--	--
#2	1370459	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 590212F DF10 Operator:
Run Time: 02/08/16 18:04:41
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0033	1.380	.0044	349.2	30.39	.0000	-.0145
SDev	.0009	.000	.0034	.7	.00	.0001	.0075
%RSD	25.60	.0100	78.47	.2133	.0033	173.9	51.39
#1	-.0039	1.380	.0019	348.7	30.39	-.0000	-.0198
#2	-.0027	1.380	.0068	349.8	30.39	.0001	-.0092

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.249	.0001	.0642	.0023	.0384	.8627	.6412
SDev	.015	.0002	.0013	.0026	.0013	.0459	.0591
%RSD	1.186	342.0	2.036	112.4	3.386	5.326	9.218
#1	1.238	-.0001	.0633	.0005	.0375	.8302	.5994
#2	1.259	.0002	.0651	.0042	.0394	.8952	.6829

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0029	31.22	.3126	.0194	.0166	.1051	.3797
SDev	.0051	.02	.0123	.0001	.0003	.6029	.0145
%RSD	173.9	.0674	3.930	.6392	1.648	573.7	3.812
#1	-.0007	31.20	.3039	.0193	.0164	-.3212	.3695
#2	.0065	31.23	.3213	.0195	.0168	.5314	.3900

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0591	.1912	.1978	-.0062	.1423	.0083	95.87
SDev	.0010	.0019	.0017	.0026	.0017	.0024	.33
%RSD	1.691	1.008	.8572	41.76	1.207	29.25	.3489
#1	.0584	.1926	.1966	-.0044	.1435	.0100	96.11
#2	.0598	.1899	.1990	-.0081	.1411	.0066	95.63

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0131	-.0023	8.604	.1954	.0029	.0025	.3276
SDev	.0018	.0104	.008	.0005	.0075	.0016	.0010
%RSD	13.35	457.7	.0922	.2495	260.3	64.48	.3039
#1	.0119	-.0096	8.610	.1951	-.0024	.0014	.3268
#2	.0144	.0051	8.598	.1957	.0082	.0037	.3283

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0098	.1016	-.0079	.1434	.0066	.0015	.0010
SDev	.0028	.0005	.0007	.1720	.0001	.0011	.0002
%RSD	28.25	.4497	8.802	120.0	1.989	74.49	17.94
#1	.0118	.1013	-.0075	.0217	.0065	.0007	.0009
#2	.0079	.1020	-.0084	.2650	.0067	.0023	.0012

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0071	.0187
SDev	.0002	.0012
%RSD	2.239	6.603
#1	.0070	.0178
#2	.0072	.0195

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1389864	10000	--	--	--	--	--
SDev	4704.381	.0000000	--	--	--	--	--
%RSD	.3384777	.0000000	--	--	--	--	--
#1	1393191	10000	--	--	--	--	--
#2	1386538	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 590213F DF10 Operator:
Run Time: 02/08/16 18:09:48
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0024	3.111	.0014	312.3	12.13	.0001	-.0102
SDev	.0003	.003	.0046	.4	.01	.0001	.0079
%RSD	11.31	.0892	318.4	.1400	.0702	80.53	77.35
#1	-.0026	3.113	-.0018	312.0	12.13	.0000	-.0157
#2	-.0022	3.109	.0047	312.6	12.12	.0001	-.0046

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	6.104	.0003	.0285	.0052	.0318	1.293	1.335
SDev	.008	.0000	.0001	.0029	.0009	.051	.057
%RSD	.1320	14.42	.2130	55.92	2.797	3.919	4.276
#1	6.098	.0003	.0286	.0031	.0312	1.257	1.294
#2	6.110	.0003	.0285	.0073	.0324	1.329	1.375

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0010	31.42	1.219	.0424	.0064	.5579	.7890
SDev	.0051	.06	.004	.0001	.0011	.6725	.0131
%RSD	529.1	.2022	.2989	.2396	17.59	120.5	1.656
#1	-.0026	31.37	1.216	.0423	.0056	.0823	.7797
#2	.0046	31.46	1.221	.0425	.0072	1.033	.7982

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0265	.0513	.0565	-.0094	.6317	.0009	96.13
SDev	.0002	.0029	.0008	.0037	.0416	.0005	.28
%RSD	.6490	5.709	1.333	39.33	6.588	56.15	.2945
#1	.0264	.0492	.0570	-.0120	.6023	.0005	96.33
#2	.0267	.0533	.0560	-.0068	.6612	.0012	95.93

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0169	-.0002	17.72	.0547	.0055	.0018	.1327
SDev	.0035	.0101	.10	.0005	.0056	.0005	.0000
%RSD	20.52	4057.	.5455	.8709	101.7	25.01	.0205
#1	.0193	-.0074	17.65	.0544	.0015	.0015	.1327
#2	.0144	.0069	17.79	.0551	.0094	.0022	.1327

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0027	.1939	-.0075	.1358	.0054	-.0007	.0015
SDev	.0045	.0001	.0035	.1632	.0003	.0002	.0000
%RSD	164.7	.0497	46.87	120.2	5.899	31.14	2.248
#1	.0004	.1940	-.0050	.0204	.0057	-.0006	.0015
#2	-.0059	.1939	-.0100	.2511	.0052	-.0009	.0014

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0131	.0250
SDev	.0000	.0032
%RSD	.0312	12.77
#1	.0131	.0227
#2	.0131	.0273

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1393580	10000	--	--	--	--	--
SDev	4137.282	.0000000	--	--	--	--	--
%RSD	.2968814	.0000000	--	--	--	--	--
#1	1396506	10000	--	--	--	--	--
#2	1390655	10000	--	--	--	--	--

Method: DAILY2 Sample Name: CCV Operator:
Run Time: 02/08/16 18:14:54
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.033	10.30	5.271	H8.588	9.902	1.026	4.944
SDev	.003	.01	.014	.686	.001	.004	.010
%RSD	.2820	.1445	.2733	7.991	.0081	.3511	.2038
#1	1.031	10.29	5.261	H9.073	9.902	1.023	4.936
#2	1.035	10.31	5.281	H8.103	9.903	1.028	4.951
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass
High	1.100	11.00	5.500	5.500	11.00	1.100	5.500
Low	.9000	9.000	4.500	4.500	9.000	.9000	4.500

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.50	1.043	5.065	1.984	2.009	9.924	19.85
SDev	.07	.002	.003	.001	.004	.034	.03
%RSD	.3316	.1885	.0600	.0583	.1788	.3395	.1326
#1	20.45	1.041	5.063	1.985	2.006	9.900	19.83
#2	20.55	1.044	5.067	1.983	2.012	9.948	19.87
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.00	1.100	5.500	2.200	2.200	11.00	22.00
Low	18.00	.9000	4.500	1.800	1.800	9.000	18.00

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.961	5.440	20.59	1.009	4.932	29.76	30.74
SDev	.003	.068	.02	.000	.021	.60	.07
%RSD	.0626	1.243	.1180	.0152	.4228	2.007	.2307
#1	4.958	5.488	20.61	1.009	4.917	29.34	30.79
#2	4.963	5.392	20.57	1.009	4.946	30.18	30.69
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.500	5.500	22.00	1.100	5.500	33.00	33.00
Low	4.500	4.500	18.00	.9000	4.500	27.00	27.00

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	4.953	5.010	4.992	.9537	1.015	1.010	98.06
SDev	.003	.014	.044	.0072	.019	.010	.35
%RSD	.0665	.2818	.8837	.7575	1.826	.9845	.3606
#1	4.955	5.000	4.961	.9486	1.002	1.003	97.81
#2	4.951	5.020	5.023	.9588	1.028	1.017	98.31
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	5.500			1.100	1.100	1.100	
Low	4.500			.9000	.9000	.9000	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.238	5.244	4.715	4.993	5.237	5.022	4.871
SDev	.016	.067	.003	.034	.050	.004	.001
%RSD	.3100	1.286	.0561	.6826	.9608	.0793	.0109
#1	5.227	5.196	4.717	4.969	5.201	5.025	4.870
#2	5.250	5.292	4.714	5.017	5.273	5.019	4.871
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			5.500	5.500	5.500	5.500	5.500
Low			4.500	4.500	4.500	4.500	4.500

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.009	4.764	5.193	4.876	5.053	H1.116	4.962
SDev	.003	.009	.008	.136	.001	.004	.005
%RSD	.2845	.1785	.1492	2.780	.0237	.3152	.0991
#1	1.012	4.758	5.187	4.781	5.052	H1.114	4.965
#2	1.007	4.770	5.198	4.972	5.054	H1.119	4.958
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	1.100	5.500	5.500	5.500	5.500	1.100	5.500
Low	.9000	4.500	4.500	4.500	4.500	.9000	4.500

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	1.054	4.849
SDev	.000	.028
%RSD	.0089	.5840
#1	1.053	4.829
#2	1.054	4.869
Errors	LC Pass	LC Pass
High	1.100	5.500
Low	.9000	4.500

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1421552	10000	--	--	--	--	--
SDev	5226.933	.0000000	--	--	--	--	--
%RSD	.3676920	.0000000	--	--	--	--	--
#1	1417856	10000	--	--	--	--	--
#2	1425248	10000	--	--	--	--	--

Method: DAILY2 Sample Name: CCB Operator:
Run Time: 02/08/16 18:20:00
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0008	-.0193	.0015	H1.783	.0008	-.0001	L-.0108
SDev	.0020	.0073	.0013	.188	.0002	.0000	.0018
%RSD	246.5	37.72	85.95	10.57	23.65	60.62	16.75
#1	-.0023	-.0245	.0023	H1.916	.0006	-.0001	L-.0121
#2	.0006	-.0142	.0006	H1.650	.0009	-.0000	-.0095
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Low
High	.0050	.0500	.0050	.0500	.0050	.0050	.0100
Low	-.0050	-.0500	-.0050	-.0500	-.0050	-.0050	-.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0029	-.0000	-.0005	-.0008	-.0000	.0068	-.0053
SDev	.0019	.0002	.0012	.0031	.0011	.0401	.0707
%RSD	64.89	15760.	251.0	401.1	1640000.	586.1	1338.
#1	.0016	-.0002	-.0014	-.0029	-.0008	-.0215	-.0552
#2	.0042	.0002	.0004	.0014	.0008	.0352	.0447
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0500	.0050	.0050	.0050	.0050	.0500	.1000
Low	-.0500	-.0050	-.0050	-.0050	-.0050	-.0500	-.1000

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0006	H.0099	-.0029	-.0000	.0013	-.0373	.0180
SDev	.0049	.0005	.0055	.0001	.0007	.7625	.0151
%RSD	863.2	4.703	191.1	414.6	53.34	2046.	83.89
#1	-.0040	H.0102	-.0068	-.0001	.0008	L-.5764	.0073
#2	.0029	H.0095	.0010	.0000	.0018	H.5019	.0286
Errors	LC Pass	LC High	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0050	.0050	.0500	.0050	.0050	.0500	.0500
Low	-.0050	-.0050	-.0500	-.0050	-.0050	-.0500	-.0500

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0003	-.0012	-.0013	-.0016	-.0050	.0045	103.8
SDev	.0008	.0001	.0015	.0043	.0119	.0016	.3
%RSD	325.1	8.710	112.3	269.3	235.4	34.45	.2647
#1	-.0003	-.0013	-.0003	-.0047	.0034	.0034	104.0
#2	.0009	-.0011	-.0023	.0015	-.0134	.0056	103.6
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	.0050			.0050	.0200	.0100	
Low	-.0050			-.0050	-.0200	-.0100	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0007	-.0010	.0089	-.0013	-.0004	-.0017	.0001
SDev	.0076	.0043	.0005	.0009	.0003	.0038	.0001
%RSD	1137.	427.8	5.516	74.60	78.96	226.1	131.9
#1	-.0047	.0020	.0086	-.0006	-.0002	-.0043	.0000
#2	.0060	-.0040	.0092	-.0019	-.0007	.0010	.0002
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			.0100	.0050	.0050	.0100	.0050
Low			-.0100	-.0050	-.0050	-.0100	-.0050

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0020	.0002	-.0009	-.0056	-.0006	-.0000	.0000
SDev	.0011	.0004	.0036	.1658	.0011	.0057	.0003
%RSD	56.66	270.9	397.8	2945.	185.4	36110.	519.6
#1	-.0028	-.0001	-.0035	L-.1229	-.0013	-.0041	-.0001
#2	-.0012	.0004	.0016	H.1116	.0002	.0040	.0002
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0100	.0050	.0100	.1000	.0050	.0100	.0050
Low	-.0100	-.0050	-.0100	-.1000	-.0050	-.0100	-.0050

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0002	.0003
SDev	.0001	.0019
%RSD	72.04	705.8
#1	.0001	-.0011
#2	.0003	.0016
Errors	LC Pass	LC Pass
High	.0050	.0050
Low	-.0050	-.0050

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1504244	10000	--	--	--	--	--
SDev	3937.878	.0000000	--	--	--	--	--
%RSD	.2617844	.0000000	--	--	--	--	--
#1	1507029	10000	--	--	--	--	--
#2	1501460	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 590214F DF10 Operator:
Run Time: 02/08/16 18:25:07
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0009	4.934	.0064	364.8	.4308	.0002	-.0079
SDev	.0004	.106	.0019	4.8	.0079	.0001	.0032
%RSD	45.81	2.146	29.01	1.306	1.832	31.50	39.83
#1	-.0006	5.008	.0051	368.2	.4364	.0002	-.0057
#2	-.0012	4.859	.0077	361.4	.4252	.0002	-.0102

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.220	.0001	.1284	.0081	.0663	2.790	2.135
SDev	.021	.0000	.0021	.0014	.0008	.001	.001
%RSD	.6395	12.13	1.658	17.77	1.274	.0535	.0452
#1	3.234	.0002	.1299	.0071	.0669	2.791	2.136
#2	3.205	.0001	.1269	.0091	.0657	2.789	2.134

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0011	30.07	1.298	.1185	.0112	.8173	1.199
SDev	.0029	.05	.025	.0022	.0005	.5337	.012
%RSD	276.9	.1611	1.931	1.881	4.484	65.30	1.022
#1	-.0010	30.03	1.316	.1201	.0108	.4399	1.208
#2	.0031	30.10	1.280	.1169	.0116	1.195	1.190

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.1648	-.0005	.0046	-.0077	-.0076	.0062	98.36
SDev	.0037	.0016	.0017	.0033	.0050	.0040	.11
%RSD	2.270	313.0	38.01	43.50	65.50	64.45	.1154
#1	.1675	.0006	.0058	-.0053	-.0112	.0090	98.28
#2	.1622	-.0016	.0033	-.0100	-.0041	.0034	98.44

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0160	.0002	29.54	.0029	.0054	.0005	.0194
SDev	.0007	.0029	.51	.0017	.0017	.0014	.0003
%RSD	4.298	1777.	1.730	58.27	31.78	297.7	1.720
#1	.0155	.0022	29.90	.0041	.0067	.0014	.0196
#2	.0165	-.0019	29.18	.0017	.0042	-.0005	.0191

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0003	.3705	-.0027	.3964	.0449	.0045	.0050
SDev	.0003	.0071	.0028	.1143	.0004	.0023	.0002
%RSD	80.97	1.905	102.5	28.83	.9065	51.83	3.447
#1	-.0001	.3755	-.0046	.3156	.0451	.0028	.0049
#2	-.0005	.3655	-.0007	.4772	.0446	.0061	.0051

010783

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0123	.2998
SDev	.0001	.0008
%RSD	1.124	.2732
#1	.0124	.3004
#2	.0122	.2993

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1425970	10000	--	--	--	--	--
SDev	1670.186	.0000000	--	--	--	--	--
%RSD	.1171263	.0000000	--	--	--	--	--
#1	1424789	10000	--	--	--	--	--
#2	1427151	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 591000F DF10 Operator:
Run Time: 02/08/16 18:30:13
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0015	5.140	.0038	357.0	10.04	.0001	-.0052
SDev	.0009	.059	.0053	2.4	.12	.0001	.0081
%RSD	59.74	1.142	141.6	.6796	1.217	48.77	155.5
#1	-.0021	5.181	-.0000	358.7	10.12	.0001	-.0110
#2	-.0008	5.098	.0075	355.3	9.951	.0002	.0005

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.514	.0003	.0229	.0072	.0152	2.877	2.080
SDev	.004	.0001	.0014	.0036	.0015	.015	.053
%RSD	.2590	17.83	6.071	49.11	9.603	.5310	2.540
#1	1.517	.0002	.0220	.0047	.0142	2.866	2.043
#2	1.511	.0003	.0239	.0097	.0162	2.888	2.117

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0025	29.98	.7550	.1022	.0078	.6617	.8304
SDev	.0050	.00	.0040	.0010	.0007	.8152	.0076
%RSD	204.5	.0030	.5345	.9882	9.246	123.2	.9192
#1	-.0011	29.98	.7579	.1029	.0073	.0853	.8250
#2	.0060	29.98	.7522	.1014	.0084	1.238	.8358

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0193	.2068	.2114	-.0054	.8049	.0036	98.97
SDev	.0012	.0030	.0002	.0008	.0422	.0077	.04
%RSD	6.267	1.443	.0736	15.36	5.247	213.7	.0399
#1	.0185	.2047	.2115	-.0060	.8348	-.0018	98.94
#2	.0202	.2089	.2113	-.0048	.7751	.0091	99.00

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0125	-.0001	21.27	.2097	.0041	.0010	.0948
SDev	.0035	.0022	.23	.0009	.0003	.0004	.0010
%RSD	27.89	3666.	1.090	.4245	7.439	38.24	1.026
#1	.0150	-.0016	21.43	.2090	.0039	.0013	.0955
#2	.0100	.0015	21.10	.2103	.0044	.0007	.0941

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0018	.2913	.0021	.1888	.0117	.0012	.0021
SDev	.0017	.0030	.0043	.1754	.0010	.0023	.0004
%RSD	90.56	1.024	202.0	92.94	8.582	186.6	21.64
#1	.0007	.2934	.0051	.0647	.0109	-.0004	.0018
#2	.0030	.2892	-.0009	.3128	.0124	.0028	.0024

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0128	.0234
SDev	.0000	.0017
%RSD	.0812	7.421
#1	.0128	.0222
#2	.0128	.0247

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1434764	10000	--	--	--	--	--
SDev	424.9712	.0000000	--	--	--	--	--
%RSD	.0296196	.0000000	--	--	--	--	--
#1	1434463	10000	--	--	--	--	--
#2	1435064	10000	--	--	--	--	--

Analysis Report 02/08/16 06:40:12 PM

Method: DAILY2 Sample Name: CRI Operator:
Run Time: 02/08/16 18:35:19
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0095	.1075	.0087	H3.381	.0057	.0049	.0101
SDev	.0021	.0122	.0007	.611	.0003	.0000	.0081
%RSD	21.69	11.33	8.068	18.08	5.835	.8319	80.76
#1	.0080	.0989	.0092	H3.813	.0059	.0049	L.0043
#2	.0110	.1161	.0082	H2.949	.0055	.0050	.0158
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass
High	.0150	.1500	.0150	.0600	.0075	.0075	.0300
Low	.0050	.0500	.0050	.0200	.0025	.0025	.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1023	.0051	.0052	.0047	.0056	.1255	.3060
SDev	.0024	.0001	.0008	.0018	.0006	.0277	.0179
%RSD	2.342	2.603	16.28	37.34	11.41	22.06	5.847
#1	.1006	.0050	.0046	.0034	.0061	.1059	.2934
#2	.1040	.0052	.0058	.0059	.0052	.1451	.3187
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.1500	.0075	.0075	.0075	.0075	.1500	.7500
Low	.0500	.0025	.0025	.0025	.0025	.0500	.2500

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0100	H.0211	.0478	.0051	.0051	.3114	.2534
SDev	.0017	.0010	.0025	.0001	.0004	.2916	.0066
%RSD	17.18	4.728	5.145	2.893	7.402	93.64	2.617
#1	.0088	H.0218	.0461	.0052	.0053	L.1052	.2488
#2	.0112	H.0204	.0496	.0050	.0048	H.5175	.2581
Errors	LC Pass	LC High	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0150	.0150	.1000	.0075	.0075	.5000	.5000
Low	.0050	.0050	.0250	.0025	.0025	.1250	.1250

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0047	.0075	-.0000	.0189	.0574	.0287	103.5
SDev	.0019	.0032	.0006	.0079	.0030	.0018	.2
%RSD	39.73	42.12	3406.	41.81	5.147	6.092	.1715
#1	.0061	.0098	-.0005	.0133	.0595	.0274	103.4
#2	.0034	.0053	.0004	.0244	.0553	.0299	103.6
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	.0075			.0300	.0750	.0300	
Low	.0025			.0100	.0250	.0100	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0134	.0099	H.6468	.0025	.0111	.0091	.0050
SDev	.0037	.0004	.0034	.0006	.0015	.0007	.0001
%RSD	27.89	3.868	.5305	25.24	13.57	7.333	1.600
#1	.0108	.0096	H.6492	.0029	.0100	.0095	.0049
#2	.0161	.0102	H.6444	L.0021	.0121	.0086	.0050
Errors	NOCHECK	NOCHECK	LC High	LC Pass	LC Pass	LC Pass	LC Pass
High			.1500	.0075	.0150	.0150	.0075
Low			.0500	.0025	.0050	.0050	.0025

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0214	.0051	.0154	.2043	.0048	.0236	.0050
SDev	.0093	.0005	.0016	.0818	.0006	.0050	.0003
%RSD	43.70	10.14	10.44	40.05	11.64	21.10	6.155
#1	.0280	.0054	.0165	.1464	.0052	.0271	.0052
#2	.0148	.0047	.0143	.2621	.0044	.0201	.0047
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0300	.0075	.0300	.3000	.0075	.0300	.0075
Low	.0100	.0025	.0100	.1000	.0025	.0100	.0025

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0052	.0062
SDev	.0002	.0016
%RSD	4.642	26.16
#1	.0050	.0050
#2	.0054	.0073
Errors	LC Pass	LC Pass
High	.0075	.0075
Low	.0025	.0025

010791

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1500580	10000	--	--	--	--	--
SDev	2674.985	.0000000	--	--	--	--	--
%RSD	.1782633	.0000000	--	--	--	--	--
#1	1498689	10000	--	--	--	--	--
#2	1502472	10000	--	--	--	--	--

Method: DAILY2 Sample Name: CRI-N Operator:
Run Time: 02/08/16 18:40:26
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0189	.2161	.0153	H1.835	.0103	.0099	L.0278
SDev	.0011	.0061	.0035	.168	.0000	.0001	.0070
%RSD	5.760	2.818	22.86	9.138	.1146	.7177	25.25
#1	.0181	.2118	L.0128	H1.953	.0102	.0099	L.0229
#2	.0196	.2204	.0177	H1.716	.0103	.0100	.0328
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Low
High	.0260	.2600	.0260	.1040	.0130	.0130	.0520
Low	.0140	.1400	.0140	.0560	.0070	.0070	.0280

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2039	.0104	.0098	.0094	.0092	.2121	L.6111
SDev	.0024	.0001	.0006	.0017	.0004	.0291	.0343
%RSD	1.157	1.185	5.726	17.74	4.003	13.72	5.618
#1	.2022	.0103	.0094	.0083	.0090	.1915	L.5869
#2	.2055	.0105	.0102	.0106	.0095	.2327	L.6354
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low
High	.2600	.0130	.0130	.0130	.0130	.2600	1.300
Low	.1400	.0070	.0070	.0070	.0070	.1400	.7000

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0193	H.0271	.1025	.0101	.0105	.4921	.4717
SDev	.0032	.0003	.0047	.0001	.0001	.3402	.0050
%RSD	16.51	.9513	4.571	.8787	1.001	69.13	1.059
#1	.0170	H.0273	.0992	.0100	.0106	L.2516	.4682
#2	.0215	H.0269	.1058	.0101	.0105	H.7327	.4753
Errors	LC Pass	LC High	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0260	.0260	.1300	.0130	.0130	.6500	.6500
Low	.0140	.0140	.0700	.0070	.0070	.3500	.3500

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0089	.0041	.0111	.0347	.1023	.0403	102.9
SDev	.0007	.0034	.0012	.0029	.0024	.0028	.3
%RSD	8.266	83.00	10.90	8.354	2.328	7.044	.2775
#1	.0094	.0017	.0120	.0326	.1006	.0383	103.1
#2	.0084	.0064	.0102	.0367	.1040	.0423	102.7
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	.0130			.0520	.1300	.0520	
Low	.0070			.0280	.0700	.0280	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0243	.0216	H.9065	.0088	.0225	.0190	.0099
SDev	.0078	.0008	.0016	.0003	.0031	.0017	.0001
%RSD	32.32	3.492	.1791	3.582	13.87	8.736	.8136
#1	.0299	.0221	H.9053	.0085	.0247	.0178	.0099
#2	.0187	.0210	H.9076	.0090	.0203	.0202	.0100
Errors	NOCHECK	NOCHECK	LC High	LC Pass	LC Pass	LC Pass	LC Pass
High			.2600	.0130	.0260	.0260	.0130
Low			.1400	.0070	.0140	.0140	.0070

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0386	.0095	.0367	.3802	.0089	.0449	.0098
SDev	.0023	.0001	.0010	.0971	.0000	.0050	.0000
%RSD	6.061	.7763	2.762	25.54	.4393	11.17	.1109
#1	.0403	.0095	.0360	.3116	.0089	.0413	.0098
#2	.0369	.0094	.0374	.4489	.0089	.0484	.0098
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0520	.0130	.0520	.5200	.0130	.0520	.0130
Low	.0280	.0070	.0280	.2800	.0070	.0280	.0070

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0103	.0101
SDev	.0001	.0013
%RSD	.5734	12.84
#1	.0103	.0092
#2	.0102	.0110
Errors	LC Pass	LC Pass
High	.0130	.0130
Low	.0070	.0070

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1491120	10000	--	--	--	--	--
SDev	4070.814	.0000000	--	--	--	--	--
%RSD	.2730038	.0000000	--	--	--	--	--
#1	1493998	10000	--	--	--	--	--
#2	1488241	10000	--	--	--	--	--

Method: DAILY2 Sample Name: ICSA Operator:
Run Time: 02/08/16 18:45:32
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0025	479.2	-.0021	1.288	.0032	-.0000	.0083
SDev	.0024	.9	.0005	.135	.0000	.0000	.0053
%RSD	95.98	.1825	22.13	10.49	1.012	134.5	63.79
#1	-.0008	478.6	-.0025	1.383	.0033	-.0000	.0121
#2	-.0042	479.8	-.0018	1.192	.0032	-.0000	.0046
Errors	NOCHECK	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High		600.0					
Low		400.0					

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	453.6	.0000	-.0034	-.0003	-.0018	192.7	.0017
SDev	5.6	.0001	.0011	.0019	.0001	2.8	.0265
%RSD	1.235	1910.	33.35	556.7	4.899	1.452	1560.
#1	457.6	-.0001	-.0026	-.0017	-.0017	194.7	-.0170
#2	449.7	.0001	-.0041	.0010	-.0018	190.7	.0204
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	NOCHECK
High	600.0					240.0	
Low	400.0					160.0	

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0015	.0166	529.4	.0223	-.0014	.2907	.1296
SDev	.0022	.0003	1.0	.0000	.0001	.3674	.0125
%RSD	151.7	1.620	.1866	.1094	6.812	126.4	9.676
#1	-.0030	.0168	530.1	.0224	-.0015	.0309	.1207
#2	.0001	.0165	528.7	.0223	-.0013	.5505	.1384
Errors	NOCHECK	NOCHECK	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High			600.0				
Low			400.0				

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0033	.1055	-.0459	.1013	-.0499	.0102	92.83
SDev	.0008	.0030	.0034	.0009	.0241	.0081	.69
%RSD	25.02	2.884	7.409	.8463	48.27	79.96	.7479
#1	-.0038	.1076	-.0484	.1007	-.0669	.0044	92.34
#2	-.0027	.1033	-.0435	.1019	-.0329	.0159	93.32
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0110	-.0054	.7541	.0045	.0001	-.0058	.0036
SDev	.0039	.0034	.0052	.0013	.0035	.0019	.0001
%RSD	34.99	62.70	.6894	27.66	3917.	31.84	1.996
#1	.0138	-.0030	.7578	.0036	.0026	-.0071	.0036
#2	.0083	-.0078	.7505	.0054	-.0024	-.0045	.0035
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0133	.0030	.0089	.0795	-.0024	.0018	-.0000
SDev	.0010	.0001	.0028	.1155	.0002	.0039	.0001
%RSD	7.791	4.469	31.39	145.2	7.658	217.2	425.7
#1	.0140	.0029	.0109	-.0021	-.0026	-.0010	.0001
#2	.0125	.0031	.0069	.1612	-.0023	.0045	-.0001
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	-.0065	.0003
SDev	.0009	.0036
%RSD	13.39	1189.
#1	-.0059	-.0023
#2	-.0071	.0029
Errors	NOCHECK	NOCHECK
High		
Low		

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1345844	10000	--	--	--	--	--
SDev	10020.41	.0000000	--	--	--	--	--
%RSD	.7445445	.0000000	--	--	--	--	--
#1	1338759	10000	--	--	--	--	--
#2	1352930	10000	--	--	--	--	--

Method: DAILY2 Sample Name: ICSAB Operator:
Run Time: 02/08/16 18:50:38
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.069	475.9	1.055	H1.838	.5171	.5060	.0024
SDev	.001	.9	.006	.077	.0001	.0001	.0002
%RSD	.1104	.1822	.5619	4.167	.0156	.0211	8.401
#1	1.069	475.3	1.059	H1.892	.5172	.5059	.0023
#2	1.068	476.5	1.051	H1.783	.5171	.5061	.0026
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	NOCHECK
High	1.200	600.0	1.200	1.200	.6000	.6000	
Low	.8000	400.0	.8000	.8000	.4000	.4000	

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	450.0	.9914	.4852	.4844	.5287	191.3	-.0059
SDev	.6	.0043	.0006	.0010	.0003	.1	.0452
%RSD	.1364	.4351	.1141	.2074	.0490	.0778	761.2
#1	450.4	.9883	.4856	.4851	.5285	191.4	-.0379
#2	449.5	.9944	.4848	.4837	.5289	191.1	.0260
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK
High	600.0	1.200	.6000	.6000	.6000	240.0	
Low	400.0	.8000	.4000	.4000	.4000	160.0	

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0016	1.179	525.8	.5160	1.038	.1393	.0908
SDev	.0025	.002	.9	.0004	.002	.4645	.0147
%RSD	151.1	.1271	.1767	.0690	.1953	333.4	16.22
#1	-.0034	1.180	526.5	.5163	1.040	-.1891	.0804
#2	.0001	1.178	525.2	.5158	1.037	.4678	.1012
Errors	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK	NOCHECK
High		1.200	600.0	.6000	1.200		
Low		.8000	400.0	.4000	.8000		

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.9570	1.066	.9227	.0982	-.0522	1.075	93.25
SDev	.0082	.006	.0018	.0016	.0240	.003	.19
%RSD	.8526	.5346	.1979	1.677	45.96	.2757	.2000
#1	.9628	1.070	.9214	.0970	-.0692	1.073	93.12
#2	.9512	1.062	.9240	.0993	-.0353	1.077	93.38
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	NOCHECK
High	1.200					1.200	
Low	.8000					.8000	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.039	1.028	1.327	.9695	1.031	.9888	1.003
SDev	.006	.005	.001	.0007	.005	.0000	.001
%RSD	.5992	.5009	.0727	.0703	.5339	.0038	.1030
#1	1.043	1.032	1.328	.9700	1.034	.9888	1.002
#2	1.034	1.024	1.327	.9691	1.027	.9888	1.003
Errors	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass
High				1.200	1.200	1.200	1.200
Low				.8000	.8000	.8000	.8000

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0089	.9506	.9760	1.004	.4982	.0211	-.0002
SDev	.0037	.0006	.0027	.128	.0003	.0037	.0000
%RSD	42.27	.0678	.2763	12.76	.0551	17.49	6.173
#1	.0115	.9510	.9741	.9134	.4980	.0185	-.0003
#2	.0062	.9501	.9780	1.095	.4984	.0237	-.0002
Errors	NOCHECK	LC Pass	LC Pass	NOCHECK	LC Pass	NOCHECK	NOCHECK
High		1.200	1.200		.6000		
Low		.8000	.8000		.4000		

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.9862	.9313
SDev	.0043	.0027
%RSD	.4374	.2850
#1	.9893	.9294
#2	.9832	.9332
Errors	LC Pass	NOCHECK
High	1.200	
Low	.8000	

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1351902	10000	--	--	--	--	--
SDev	2786.001	.0000000	--	--	--	--	--
%RSD	.2060801	.0000000	--	--	--	--	--
#1	1349932	10000	--	--	--	--	--
#2	1353872	10000	--	--	--	--	--

Analysis Report 02/08/16 07:00:37 PM page 1

Method: DAILY2 Sample Name: CCV Operator:
Run Time: 02/08/16 18:55:45
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.032	10.26	5.282	5.372	9.862	1.022	4.950
SDev	.000	.01	.002	.009	.016	.002	.003
%RSD	.0236	.0526	.0306	.1651	.1603	.1558	.0572
#1	1.032	10.26	5.280	5.366	9.873	1.023	4.948
#2	1.031	10.26	5.283	5.378	9.851	1.021	4.952
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.100	11.00	5.500	5.500	11.00	1.100	5.500
Low	.9000	9.000	4.500	4.500	9.000	.9000	4.500

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.43	1.043	5.047	1.979	2.006	9.898	19.62
SDev	.13	.003	.003	.002	.003	.104	.11
%RSD	.6498	.2580	.0629	.1028	.1344	1.052	.5515
#1	20.34	1.041	5.050	1.981	2.008	9.824	19.54
#2	20.52	1.045	5.045	1.978	2.004	9.972	19.70
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.00	1.100	5.500	2.200	2.200	11.00	22.00
Low	18.00	.9000	4.500	1.800	1.800	9.000	18.00

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.969	5.299	20.51	1.006	4.941	29.03	30.09
SDev	.002	.019	.02	.000	.010	.74	.06
%RSD	.0478	.3649	.1032	.0213	.2104	2.533	.2063
#1	4.967	5.286	20.49	1.007	4.934	28.51	30.04
#2	4.971	5.313	20.52	1.006	4.948	29.55	30.13
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.500	5.500	22.00	1.100	5.500	33.00	33.00
Low	4.500	4.500	18.00	.9000	4.500	27.00	27.00

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	4.937	5.009	4.959	.9611	.9604	1.017	101.2
SDev	.003	.052	.003	.0124	.0192	.003	.2
%RSD	.0599	1.040	.0665	1.293	2.003	.3068	.1822
#1	4.939	4.973	4.956	.9523	.9740	1.015	101.3
#2	4.935	5.046	4.961	.9699	.9468	1.019	101.0
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	5.500			1.100	1.100	1.100	
Low	4.500			.9000	.9000	.9000	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.267	5.249	4.674	4.971	5.250	4.992	4.861
SDev	.079	.021	.004	.020	.040	.002	.001
%RSD	1.496	.4055	.0786	.3932	.7698	.0436	.0249
#1	5.212	5.234	4.676	4.957	5.221	4.993	4.862
#2	5.323	5.264	4.671	4.984	5.278	4.990	4.860
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			5.500	5.500	5.500	5.500	5.500
Low			4.500	4.500	4.500	4.500	4.500

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.016	4.762	5.182	4.853	5.051	H1.129	4.963
SDev	.007	.005	.001	.164	.008	.013	.003
%RSD	.6606	.1040	.0126	3.388	.1519	1.152	.0673
#1	1.020	4.766	5.183	4.737	5.056	H1.120	4.965
#2	1.011	4.759	5.182	4.970	5.045	H1.139	4.960
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	1.100	5.500	5.500	5.500	5.500	1.100	5.500
Low	.9000	4.500	4.500	4.500	4.500	.9000	4.500

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	1.050	4.864
SDev	.003	.037
%RSD	.2690	.7569
#1	1.048	4.838
#2	1.052	4.890
Errors	LC Pass	LC Pass
High	1.100	5.500
Low	.9000	4.500

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1466437	10000	--	--	--	--	--
SDev	2747.817	.0000000	--	--	--	--	--
%RSD	.1873805	.0000000	--	--	--	--	--
#1	1468380	10000	--	--	--	--	--
#2	1464494	10000	--	--	--	--	--

Method: DAILY2 Sample Name: CCB Operator:
Run Time: 02/08/16 19:00:51
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0007	-.0114	-.0009	H.4437	.0004	-.0001	-.0064
SDev	.0004	.0020	.0040	.0268	.0001	.0001	.0033
%RSD	64.02	17.89	449.7	6.038	13.95	89.96	51.21
#1	-.0010	-.0129	-.0037	H.4627	.0005	-.0001	-.0087
#2	-.0004	-.0100	.0019	H.4248	.0004	-.0000	-.0041
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass
High	.0050	.0500	.0050	.0500	.0050	.0050	.0100
Low	-.0050	-.0500	-.0050	-.0500	-.0050	-.0050	-.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0139	.0001	-.0003	-.0005	.0002	.0193	-.0063
SDev	.0010	.0002	.0011	.0027	.0000	.0574	.0629
%RSD	7.260	248.6	378.3	524.0	19.02	296.9	992.7
#1	.0131	-.0001	-.0011	-.0024	.0002	-.0212	-.0508
#2	.0146	.0002	.0005	.0014	.0002	H.0599	.0381
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0500	.0050	.0050	.0050	.0050	.0500	.1000
Low	-.0500	-.0050	-.0050	-.0050	-.0050	-.0500	-.1000

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0007	H.0051	.0080	.0001	.0001	-.0302	.0101
SDev	.0054	.0000	.0037	.0000	.0008	.6832	.0162
%RSD	722.3	.3564	46.35	19.54	1082.	2260.	161.1
#1	-.0045	H.0052	.0054	.0001	-.0005	L-.5133	-.0014
#2	.0031	H.0051	.0107	.0001	.0007	H.4529	.0216
Errors	LC Pass	LC High	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0050	.0050	.0500	.0050	.0050	.0500	.0500
Low	-.0050	-.0050	-.0500	-.0050	-.0050	-.0500	-.0500

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0003	-.0013	-.0020	.0031	-.0110	.0050	102.3
SDev	.0013	.0004	.0000	.0032	.0060	.0027	.1
%RSD	425.0	30.23	.6628	104.8	54.99	53.94	.0532
#1	-.0012	-.0010	-.0020	.0008	-.0067	.0031	102.3
#2	.0006	-.0016	-.0020	H.0054	-.0152	.0069	102.3
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	.0050			.0050	.0200	.0100	
Low	-.0050			-.0050	-.0200	-.0100	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0031	-.0000	.0011	-.0018	.0010	.0014	.0001
SDev	.0021	.0027	.0011	.0001	.0011	.0017	.0001
%RSD	66.34	63910.	98.52	7.980	110.0	123.7	42.14
#1	.0016	.0019	.0003	-.0017	.0018	.0002	.0001
#2	.0046	-.0019	.0019	-.0019	.0002	.0026	.0001
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			.0100	.0050	.0050	.0100	.0050
Low			-.0100	-.0050	-.0050	-.0100	-.0050

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0001	.0003	-.0052	-.0178	-.0002	.0019	.0001
SDev	.0074	.0000	.0031	.1754	.0009	.0001	.0000
%RSD	6108.	15.14	59.96	987.3	464.9	3.309	61.85
#1	.0051	.0002	-.0074	L-.1418	.0004	.0019	.0001
#2	-.0053	.0003	-.0030	H.1063	-.0008	.0020	.0000
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0100	.0050	.0100	.1000	.0050	.0100	.0050
Low	-.0100	-.0050	-.0100	-.1000	-.0050	-.0100	-.0050

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0001	.0009
SDev	.0002	.0028
%RSD	138.4	313.0
#1	.0000	-.0011
#2	.0003	.0029
Errors	LC Pass	LC Pass
High	.0050	.0050
Low	-.0050	-.0050

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1482982	10000	--	--	--	--	--
SDev	744.5834	.0000000	--	--	--	--	--
%RSD	.0502085	.0000000	--	--	--	--	--
#1	1483508	10000	--	--	--	--	--
#2	1482455	10000	--	--	--	--	--

010807

Southwest Research Institute

QC STD. ID's		ICP CAL. STD.	
CCV	66611	ID's	
CRI	66656	std-0	66862
ICSA	66658	Std-1	65782
ICSAB	66659	Std-2	65783
		Std-3	65784
UCL1	66865	Std-4	65056
UCL2	65793	Std-5	65785
NIH CRI	66657	Std-6	65048

☐ 200.7 TAP No. 01-0406-028 Rev10/Jun15

☑ 6010B TAP No. 01-0406-130 Rev11/Jun15

☐ 6010C TAP No. 01-0406-130 Rev11/Jun15

☐ SWRI TAP No. 01-0406-148 Rev4/May15

☐ OTHER _____

Internal Standard (Sc) @10ppm Added in **Prep lab: YES** (NO)
Internal Standard (Sc) @10ppm Added in **ICP lab**: Inorg#61567 Exp: 9/22/16

IDL run date: **06/03/15**

IEC run date: 07/17/15

QC Earliest Expiration Date 3/21/2016

PROJ. NO.	PROJECT	TO#	DATE	MATRIX	LOGBOOK PG
21431.01.001	TETRA TECH	160115-1	2/8/16	Solid, T.B.	20160126-P004

INSTRUMENT: PE OPTIMA 7300 DV

FILENAME: C1160208

2/9/16
ANALYST/DATE

Analytical Batch # 20160209-A001

File converted to wsl? ☐

Sample ID,Date,Time
Calib Blank 1,2/8/2016,5:55:14 PM
STD 1,2/8/2016,5:56:45 PM
ICV,2/8/2016,5:58:42 PM
ICB,2/8/2016,6:00:32 PM
CRI,2/8/2016,6:01:57 PM
CRI-N,2/8/2016,6:03:23 PM
ICSA,2/8/2016,6:04:49 PM
ICSAB,2/8/2016,6:06:45 PM
UCL-1,2/8/2016,6:08:40 PM
CCV,2/8/2016,6:10:43 PM
CCB,2/8/2016,6:12:35 PM
PB16A26KE3,2/8/2016,6:13:58 PM
LCS16A26KE3,2/8/2016,6:15:22 PM
LCS16A26KE4,2/8/2016,6:17:09 PM
LCS16A26KE7,2/8/2016,6:18:34 PM
LCS16A26KE8,2/8/2016,6:20:19 PM
588049TF DF10,2/8/2016,6:22:08 PM
588556TF DF10,2/8/2016,6:24:04 PM
588556TFD DF10,2/8/2016,6:25:51 PM
588556TFL DF50,2/8/2016,6:27:36 PM
588556TFMS3 DF10,2/8/2016,6:29:20 PM
CCV,2/8/2016,6:31:16 PM
CCB,2/8/2016,6:33:08 PM
588556TFMS4 DF10,2/8/2016,6:34:31 PM
*588556TFAS DF10,2/8/2016,6:36:18 PM
590212TF DF10,2/8/2016,6:38:17 PM
590213TF DF10,2/8/2016,6:40:04 PM
590214TF DF10,2/8/2016,6:41:54 PM
591000TF DF10,2/8/2016,6:43:51 PM
CRI,2/8/2016,6:45:39 PM
CRI-N,2/8/2016,6:47:05 PM
ICSA,2/8/2016,6:48:29 PM
ICSAB,2/8/2016,6:50:25 PM
CCV,2/8/2016,6:52:20 PM
CCB,2/8/2016,6:54:12 PM
588049TF ,2/8/2016,6:55:37 PM
588556TF ,2/8/2016,6:57:20 PM
588556TFD ,2/8/2016,6:59:12 PM
588556TFL DF5,2/8/2016,7:01:04 PM
588556TFMS3 ,2/8/2016,7:03:16 PM
588556TFMS4 ,2/8/2016,7:05:08 PM
*588556TFAS ,2/8/2016,7:07:00 PM
590212TF ,2/8/2016,7:08:52 PM
590213TF ,2/8/2016,7:10:51 PM
590214TF ,2/8/2016,7:13:05 PM
CCV,2/8/2016,7:15:16 PM
CCB,2/8/2016,7:17:08 PM
591000TF ,2/8/2016,7:18:33 PM
CRI,2/8/2016,7:20:44 PM
CRI-N,2/8/2016,7:22:10 PM
ICSA,2/8/2016,7:23:34 PM
ICSAB,2/8/2016,7:25:30 PM
CCV,2/8/2016,7:27:26 PM
CCB,2/8/2016,7:29:18 PM

2/9/16

* Spiked 50 ul Spike I (#60136)
20 ul ICAL I (#58932)
IN 5mL f.V.

2/9/16

2/8/2016 5:31:44 PM Hg ReAlign... Actual peak offset (nm): -0.003 010809
Drift (nm): -0.000 Slit adjustment: 2

Align View X Radial for analyte Mn 257.610

X-position	Y-position	Intensity
-7.0	15.0	122.9
-6.5	15.0	179.4
-6.0	15.0	161.5
-5.5	15.0	103.1
-5.0	15.0	86.8
-4.5	15.0	100.2
-4.0	15.0	131.9
-3.5	15.0	154.2
-3.0	15.0	169.7
-2.5	15.0	171.2
-2.0	15.0	384.1
-1.5	15.0	3463.4
-1.0	15.0	12759.9
-0.5	15.0	31044.4
0.0	15.0	34010.3
0.5	15.0	32199.6
1.0	15.0	27570.0
1.5	15.0	20238.3
2.0	15.0	14111.1
2.5	15.0	7824.0
3.0	15.0	3159.8
3.5	15.0	275.6
4.0	15.0	109.0
4.5	15.0	114.9
5.0	15.0	151.8
5.5	15.0	250.1
6.0	15.0	372.9
6.5	15.0	456.7
7.0	15.0	483.6

2/9/16

2/8/2016 5:37:43 PM aligned for analyte Mn 257.610
X viewing position set to 0.0 mm having Peak intensity 34010.3 for Radial viewing

Analysis Begun

Start Time: 2/8/2016 5:55:06 PM **Plasma On Time: 2/8/2016 4:51:25 PM**
Logged In Analyst: optima **Technique: ICP Continuous**
Spectrometer Model: Optima 7300 DV, S/N 077C0100201Autosampler Model: AS-93plus

Sample Information File: C:\pe\optima\Sample Information\C160208.sif
Batch ID:
Results Data Set: Y16FEB
Results Library: C:\pe\optima\Results\Results.mdb

2/9/16

Sequence No.: 1 **Autosampler Location: 1**
Sample ID: Calib Blank 1 **Date Collected: 2/8/2016 5:55:14 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.020	250	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.200	25	5.000

Replicate Data: Calib Blank 1

010810

Repl#	Analyte	Net Intensity	Corrected Intensity	Conc.	Calib. Units	Analysis Time
1	Sc361-radial	1157694.4	1157694.4	99.02	mg/L	17:56:11
1	K_766-radial†	-504.2	-509.2	[0.00]	mg/L	17:56:17
1	Li670-radial†	1430.9	1445.1	[0.00]	mg/L	17:56:17
1	Na589-radial†	2722.2	2749.0	[0.00]	mg/L	17:56:17
2	Sc361-radial	1180525.2	1180525.2	101.0	mg/L	17:56:27
2	K_766-radial†	-452.5	-448.1	[0.00]	mg/L	17:56:33
2	Li670-radial†	1594.2	1578.8	[0.00]	mg/L	17:56:33
2	Na589-radial†	2733.1	2706.6	[0.00]	mg/L	17:56:33

Mean Data: Calib Blank 1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Sc361-radial	1169109.8	16143.81	1.38%	100.0	mg/L
K_766-radial†	-478.7	43.21	9.03%	[0.00]	mg/L
Li670-radial†	1511.9	94.56	6.25%	[0.00]	mg/L
Na589-radial†	2727.8	29.96	1.10%	[0.00]	mg/L

010811

Sequence No.: 2
Sample ID: STD 1
Analyst:
Initial Sample Wt:
Dilution:
Autosampler Location: 2
Date Collected: 2/8/2016 5:56:45 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.010	500	5.000
Li670-radial	0.010	500	5.000
Na589-radial	0.010	500	5.000

Replicate Data: STD 1

Repl#	Analyte	Net Intensity	Corrected Intensity	Conc.	Calib. Units	Analysis Time
1	Sc361-radial	1151407.3	1151407.3	98.49	mg/L	17:57:51
1	K_766-radial†	250974.7	255312.0	[50]	mg/L	17:57:51
1	Li670-radial†	2240766.6	2273705.7	[10]	mg/L	17:57:51
1	Na589-radial†	735334.1	743911.8	[50]	mg/L	17:57:51
2	Sc361-radial	1149343.0	1149343.0	98.31	mg/L	17:58:24
2	K_766-radial†	250383.9	255168.7	[50]	mg/L	17:58:24
2	Li670-radial†	2234229.3	2271142.4	[10]	mg/L	17:58:24
2	Na589-radial†	731911.4	741771.2	[50]	mg/L	17:58:24

Mean Data: STD 1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc.	Units
Sc361-radial	1150375.2	1459.67	0.13%	98.40	mg/L
K_766-radial†	255240.4	101.32	0.04%	[50]	mg/L
Li670-radial†	2272424.0	1812.54	0.08%	[10]	mg/L
Na589-radial†	742841.5	1513.60	0.20%	[50]	mg/L

010812

Sequence No.: 3
Sample ID: ICV
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 101
Date Collected: 2/8/2016 5:58:42 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.010	500	5.000
Na589-radial	0.010	500	5.000

Replicate Data: ICV

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1144188.8	1144188.8	97.87	mg/L			17:59:45
1	K_766-radial†	100292.6	102955.6	20.17	mg/L	20.17	mg/L	17:59:51
1	Li670-radial†	1132572.9	1155729.0	5.086	mg/L	5.086	mg/L	17:59:45
1	Na589-radial†	446666.5	453667.3	30.54	mg/L	30.54	mg/L	17:59:45
2	Sc361-radial	1140234.4	1140234.4	97.53	mg/L			18:00:14
2	K_766-radial†	100316.3	103335.3	20.24	mg/L	20.24	mg/L	18:00:20
2	Li670-radial†	1129473.5	1156564.5	5.090	mg/L	5.090	mg/L	18:00:14
2	Na589-radial†	444859.3	453397.1	30.52	mg/L	30.52	mg/L	18:00:14

Mean Data: ICV

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1142211.6	97.70	mg/L	0.239				0.24%
K_766-radial†	103145.5	20.21	mg/L	0.053	20.21	mg/L	0.053	0.26%
Li670-radial†	1156146.8	5.088	mg/L	0.0026	5.088	mg/L	0.0026	0.05%
Na589-radial†	453532.2	30.53	mg/L	0.013	30.53	mg/L	0.013	0.04%

010813

Sequence No.: 4
Sample ID: ICB
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 102
Date Collected: 2/8/2016 6:00:32 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.200	25	5.000

Replicate Data: ICB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1146195.5	1146195.5	98.04	mg/L			18:01:22
1	K_766-radial†	-353.5	118.1	0.0231	mg/L	0.0231	mg/L	18:01:27
1	Li670-radial†	1888.8	414.6	0.0018	mg/L	0.0018	mg/L	18:01:27
1	Na589-radial†	3091.2	425.2	0.0286	mg/L	0.0286	mg/L	18:01:27
2	Sc361-radial	1155468.0	1155468.0	98.83	mg/L			18:01:39
2	K_766-radial†	-358.6	115.8	0.0227	mg/L	0.0227	mg/L	18:01:44
2	Li670-radial†	1883.1	393.4	0.0017	mg/L	0.0017	mg/L	18:01:44
2	Na589-radial†	3145.7	455.0	0.0306	mg/L	0.0306	mg/L	18:01:44

Mean Data: ICB

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1150831.8	98.44	mg/L	0.561				0.57%
K_766-radial†	117.0	0.0229	mg/L	0.00032	0.0229	mg/L	0.00032	1.39%
Li670-radial†	404.0	0.0018	mg/L	0.00007	0.0018	mg/L	0.00007	3.72%
Na589-radial†	440.1	0.0296	mg/L	0.00142	0.0296	mg/L	0.00142	4.80%

010814

Sequence No.: 5
Sample ID: CRI
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 103
Date Collected: 2/8/2016 6:01:57 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.200	25	5.000

Replicate Data: CRI

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1161543.0	1161543.0	99.35	mg/L			18:02:48
1	K_766-radial†	2043.0	2535.0	0.4966	mg/L	0.4966	mg/L	18:02:53
1	Li670-radial†	3620.5	2132.2	0.0094	mg/L	0.0094	mg/L	18:02:53
1	Na589-radial†	7163.4	4482.2	0.3017	mg/L	0.3017	mg/L	18:02:53
2	Sc361-radial	1153296.9	1153296.9	98.65	mg/L			18:03:05
2	K_766-radial†	1962.7	2468.3	0.4835	mg/L	0.4835	mg/L	18:03:11
2	Li670-radial†	3645.6	2183.7	0.0096	mg/L	0.0096	mg/L	18:03:11
2	Na589-radial†	7192.5	4563.3	0.3071	mg/L	0.3071	mg/L	18:03:11

Mean Data: CRI

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1157419.9	99.00	mg/L	0.499				0.50%
K_766-radial†	2501.7	0.4901	mg/L	0.00924	0.4901	mg/L	0.00924	1.88%
Li670-radial†	2157.9	0.0095	mg/L	0.00016	0.0095	mg/L	0.00016	1.69%
Na589-radial†	4522.8	0.3044	mg/L	0.00386	0.3044	mg/L	0.00386	1.27%

010815

Sequence No.: 6
Sample ID: CRI-N
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 104
Date Collected: 2/8/2016 6:03:23 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.200	25	5.000

Replicate Data: CRI-N

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1142340.8	1142340.8	97.71	mg/L			18:04:14
1	K_766-radial†	4354.9	4935.7	0.9669	mg/L	0.9669	mg/L	18:04:19
1	Li670-radial†	5898.8	4525.1	0.0199	mg/L	0.0199	mg/L	18:04:19
1	Na589-radial†	11086.2	8618.2	0.5801	mg/L	0.5801	mg/L	18:04:19
2	Sc361-radial	1152207.9	1152207.9	98.55	mg/L			18:04:31
2	K_766-radial†	4434.3	4978.0	0.9752	mg/L	0.9752	mg/L	18:04:37
2	Li670-radial†	6101.5	4679.1	0.0206	mg/L	0.0206	mg/L	18:04:37
2	Na589-radial†	11177.6	8613.8	0.5798	mg/L	0.5798	mg/L	18:04:37

Mean Data: CRI-N

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1147274.3	98.13	mg/L	0.597				0.61%
K_766-radial†	4956.8	0.9710	mg/L	0.00586	0.9710	mg/L	0.00586	0.60%
Li670-radial†	4602.1	0.0203	mg/L	0.00048	0.0203	mg/L	0.00048	2.37%
Na589-radial†	8616.0	0.5799	mg/L	0.00021	0.5799	mg/L	0.00021	0.04%

010816

Sequence No.: 7
Sample ID: ICSA
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 105
Date Collected: 2/8/2016 6:04:49 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.200	25	5.000

Replicate Data: ICSA

Rep1#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Units	Sample Conc.	Units	Analysis Time
1	Sc361-radial	1057911.5	1057911.5	90.49	mg/L			18:05:54
1	K_766-radial†	-417.2	17.6	0.0035	mg/L	0.0035	mg/L	18:06:00
1	Li670-radial†	2263.9	989.9	0.0044	mg/L	0.0044	mg/L	18:06:00
1	Na589-radial†	4397.8	2132.2	0.1435	mg/L	0.1435	mg/L	18:06:00
2	Sc361-radial	1063907.7	1063907.7	91.00	mg/L			18:06:27
2	K_766-radial†	-332.2	113.6	0.0223	mg/L	0.0223	mg/L	18:06:32
2	Li670-radial†	2358.5	1079.8	0.0048	mg/L	0.0048	mg/L	18:06:32
2	Na589-radial†	4407.8	2115.8	0.1424	mg/L	0.1424	mg/L	18:06:32

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Sc361-radial	1060909.6	90.75	mg/L	0.363				0.40%
K_766-radial†	65.6	0.0129	mg/L	0.01329	0.0129	mg/L	0.01329	103.43%
Li670-radial†	1034.8	0.0046	mg/L	0.00028	0.0046	mg/L	0.00028	6.14%
Na589-radial†	2124.0	0.1430	mg/L	0.00078	0.1430	mg/L	0.00078	0.55%

010817

Sequence No.: 8
Sample ID: ICSAB
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 106
Date Collected: 2/8/2016 6:06:45 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.200	25	5.000

Replicate Data: ICSAB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1072657.5	1072657.5	91.75	mg/L			18:07:50
1	K_766-radial†	-389.3	54.3	0.0106	mg/L	0.0106	mg/L	18:07:56
1	Li670-radial†	227896.9	246877.2	1.086	mg/L	1.086	mg/L	18:07:56
1	Na589-radial†	3956.1	1584.0	0.1066	mg/L	0.1066	mg/L	18:07:56
2	Sc361-radial	1067089.0	1067089.0	91.27	mg/L			18:08:23
2	K_766-radial†	-375.5	67.3	0.0132	mg/L	0.0132	mg/L	18:08:28
2	Li670-radial†	228718.9	249074.1	1.096	mg/L	1.096	mg/L	18:08:28
2	Na589-radial†	3997.0	1651.4	0.1112	mg/L	0.1112	mg/L	18:08:28

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1069873.3	91.51	mg/L	0.337				0.37%
K_766-radial†	60.8	0.0119	mg/L	0.00180	0.0119	mg/L	0.00180	15.08%
Li670-radial†	247975.7	1.091	mg/L	0.0068	1.091	mg/L	0.0068	0.63%
Na589-radial†	1617.7	0.1089	mg/L	0.00320	0.1089	mg/L	0.00320	2.94%

010813

Sequence No.: 9
Sample ID: UCL-1
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 107
Date Collected: 2/8/2016 6:08:40 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.010	500	5.000
Li670-radial	0.010	500	5.000
Na589-radial	0.001	5000	5.000

Replicate Data: UCL-1

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Units	Sample Conc.	Units	Analysis Time
1	Sc361-radial	991130.0	991130.0	84.78	mg/L			18:09:49
1	K_766-radial†	447515.9	528356.2	103.5	mg/L	103.5	mg/L	18:09:49
1	Li670-radial†	4039135.1	4762941.3	20.96	mg/L	20.96	mg/L	18:09:49
1	Na589-radial†	3319202.8	3912512.9	263.3	mg/L	263.3	mg/L	18:09:39
2	Sc361-radial	994315.6	994315.6	85.05	mg/L			18:10:25
2	K_766-radial†	449748.7	529290.3	103.7	mg/L	103.7	mg/L	18:10:25
2	Li670-radial†	4062413.2	4775046.9	21.01	mg/L	21.01	mg/L	18:10:25
2	Na589-radial†	3347407.2	3933131.6	264.7	mg/L	264.7	mg/L	18:10:15

Mean Data: UCL-1

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Sc361-radial	992722.8	84.91	mg/L	0.193				0.23%
K_766-radial†	528823.2	103.6	mg/L	0.13	103.6	mg/L	0.13	0.12%
Li670-radial†	4768994.1	20.99	mg/L	0.038	20.99	mg/L	0.038	0.18%
Na589-radial†	3922822.3	264.0	mg/L	0.98	264.0	mg/L	0.98	0.37%

010819

Sequence No.: 10
Sample ID: CCV
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 108
Date Collected: 2/8/2016 6:10:43 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.010	500	5.000
Na589-radial	0.010	500	5.000

Replicate Data: CCV

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1146490.0	1146490.0	98.07	mg/L			18:11:46
1	K_766-radial†	100531.5	102993.6	20.18	mg/L	20.18	mg/L	18:11:52
1	Li670-radial†	1138369.6	1159317.3	5.102	mg/L	5.102	mg/L	18:11:46
1	Na589-radial†	449324.1	455461.3	30.66	mg/L	30.66	mg/L	18:11:46
2	Sc361-radial	1139324.3	1139324.3	97.45	mg/L			18:12:17
2	K_766-radial†	99779.3	102866.5	20.15	mg/L	20.15	mg/L	18:12:23
2	Li670-radial†	1135729.0	1163908.6	5.122	mg/L	5.122	mg/L	18:12:17
2	Na589-radial†	448658.0	457659.5	30.80	mg/L	30.80	mg/L	18:12:17

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1142907.1	97.76	mg/L	0.433				0.44%
K_766-radial†	102930.1	20.16	mg/L	0.018	20.16	mg/L	0.018	0.09%
Li670-radial†	1161612.9	5.112	mg/L	0.0143	5.112	mg/L	0.0143	0.28%
Na589-radial†	456560.4	30.73	mg/L	0.105	30.73	mg/L	0.105	0.34%

010820

Sequence No.: 11
Sample ID: CCB
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 109
Date Collected: 2/8/2016 6:12:35 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.020	250	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.200	25	5.000

Replicate Data: CCB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Units	Sample Conc.	Units	Analysis Time
1	Sc361-radial	1155988.4	1155988.4	98.88	mg/L			18:13:24
1	K_766-radial†	-363.4	111.1	0.0218	mg/L	0.0218	mg/L	18:13:30
1	Li670-radial†	1714.9	222.5	0.0010	mg/L	0.0010	mg/L	18:13:30
1	Na589-radial†	3137.5	445.3	0.0300	mg/L	0.0300	mg/L	18:13:30
2	Sc361-radial	1176791.1	1176791.1	100.7	mg/L			18:13:41
2	K_766-radial†	-381.6	99.5	0.0195	mg/L	0.0195	mg/L	18:13:46
2	Li670-radial†	1736.5	213.2	0.0009	mg/L	0.0009	mg/L	18:13:46
2	Na589-radial†	3128.1	379.9	0.0256	mg/L	0.0256	mg/L	18:13:46

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Sc361-radial	1166389.7	99.77	mg/L	1.258				1.26%
K_766-radial†	105.3	0.0206	mg/L	0.00161	0.0206	mg/L	0.00161	7.79%
Li670-radial†	217.9	0.0010	mg/L	0.00003	0.0010	mg/L	0.00003	3.01%
Na589-radial†	412.6	0.0278	mg/L	0.00311	0.0278	mg/L	0.00311	11.21%

010821

Sequence No.: 12
Sample ID: PB16A26KE3
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 110
Date Collected: 2/8/2016 6:13:58 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.020	250	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.200	25	5.000

Replicate Data: PB16A26KE3

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1149084.7	1149084.7	98.29	mg/L			18:14:48
1	K_766-radial†	-288.5	185.1	0.0363	mg/L	0.0363	mg/L	18:14:53
1	Li670-radial†	1887.3	408.2	0.0018	mg/L	0.0018	mg/L	18:14:53
1	Na589-radial†	5134.4	2496.0	0.1680	mg/L	0.1680	mg/L	18:14:53
2	Sc361-radial	1150242.7	1150242.7	98.39	mg/L			18:15:04
2	K_766-radial†	-318.9	154.5	0.0303	mg/L	0.0303	mg/L	18:15:10
2	Li670-radial†	1976.1	496.6	0.0022	mg/L	0.0022	mg/L	18:15:10
2	Na589-radial†	5206.3	2563.9	0.1726	mg/L	0.1726	mg/L	18:15:10

Mean Data: PB16A26KE3

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1149663.7	98.34	mg/L	0.070				0.07%
K_766-radial†	169.8	0.0333	mg/L	0.00424	0.0333	mg/L	0.00424	12.75%
Li670-radial†	452.4	0.0020	mg/L	0.00028	0.0020	mg/L	0.00028	13.82%
Na589-radial†	2529.9	0.1703	mg/L	0.00323	0.1703	mg/L	0.00323	1.90%

010822

Sequence No.: 13
Sample ID: LCS16A26KE3
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 111
Date Collected: 2/8/2016 6:15:22 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.010	500	5.000

Replicate Data: LCS16A26KE3

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1120050.8	1120050.8	95.80	mg/L			18:16:23
1	K_766-radial†	98476.6	103268.6	20.23	mg/L	20.23	mg/L	18:16:29
1	Li670-radial†	1795.2	361.9	0.0016	mg/L	0.0016	mg/L	18:16:29
1	Na589-radial†	298379.5	308720.9	20.78	mg/L	20.78	mg/L	18:16:23
2	Sc361-radial	1121318.4	1121318.4	95.91	mg/L			18:16:52
2	K_766-radial†	99292.3	104002.9	20.37	mg/L	20.37	mg/L	18:16:57
2	Li670-radial†	1798.5	363.2	0.0016	mg/L	0.0016	mg/L	18:16:57
2	Na589-radial†	297961.5	307933.0	20.73	mg/L	20.73	mg/L	18:16:52

Mean Data: LCS16A26KE3

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1120684.6	95.86	mg/L	0.077				0.08%
K_766-radial†	103635.8	20.30	mg/L	0.102	20.30	mg/L	0.102	0.50%
Li670-radial†	362.6	0.0016	mg/L	0.00000	0.0016	mg/L	0.00000	0.25%
Na589-radial†	308326.9	20.75	mg/L	0.037	20.75	mg/L	0.037	0.18%

010823

Sequence No.: 14
Sample ID: LCS16A26KE4
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 112
Date Collected: 2/8/2016 6:17:09 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.020	250	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.200	25	5.000

Replicate Data: LCS16A26KE4

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1178667.0	1178667.0	100.8	mg/L			18:17:59
1	K_766-radial†	931.1	1402.2	0.2747	mg/L	0.2747	mg/L	18:18:04
1	Li670-radial†	58750.3	56762.0	0.2498	mg/L	0.2498	mg/L	18:18:04
1	Na589-radial†	10182.1	7371.7	0.4962	mg/L	0.4962	mg/L	18:18:04
2	Sc361-radial	1190718.7	1190718.7	101.8	mg/L			18:18:16
2	K_766-radial†	948.8	1410.3	0.2763	mg/L	0.2763	mg/L	18:18:21
2	Li670-radial†	59190.9	56604.8	0.2491	mg/L	0.2491	mg/L	18:18:21
2	Na589-radial†	10299.3	7384.6	0.4970	mg/L	0.4970	mg/L	18:18:21

Mean Data: LCS16A26KE4

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1184692.8	101.3	mg/L	0.73				0.72%
K_766-radial†	1406.3	0.2755	mg/L	0.00112	0.2755	mg/L	0.00112	0.40%
Li670-radial†	56683.4	0.2494	mg/L	0.00049	0.2494	mg/L	0.00049	0.20%
Na589-radial†	7378.2	0.4966	mg/L	0.00061	0.4966	mg/L	0.00061	0.12%

010824

Sequence No.: 15
Sample ID: LCS16A26KE7
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 113
Date Collected: 2/8/2016 6:18:34 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.020	250	5.000
K_766-radial	0.020	250	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.020	250	5.000

Replicate Data: LCS16A26KE7

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1148302.5	1148302.5	98.22	mg/L			18:19:34
1	K_766-radial†	335371.3	341926.9	66.98	mg/L	66.98	mg/L	18:19:34
1	Li670-radial†	21243.1	20116.1	0.0885	mg/L	0.0885	mg/L	18:19:40
1	Na589-radial†	1048071.7	1064335.0	71.64	mg/L	71.64	mg/L	18:19:34
2	Sc361-radial	1156832.9	1156832.9	98.95	mg/L			18:20:01
2	K_766-radial†	337044.8	341100.3	66.82	mg/L	66.82	mg/L	18:20:01
2	Li670-radial†	21344.4	20059.0	0.0883	mg/L	0.0883	mg/L	18:20:07
2	Na589-radial†	1053173.1	1061622.1	71.46	mg/L	71.46	mg/L	18:20:01

Mean Data: LCS16A26KE7

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1152567.7	98.59	mg/L	0.516				0.52%
K_766-radial†	341513.6	66.90	mg/L	0.114	66.90	mg/L	0.114	0.17%
Li670-radial†	20087.6	0.0884	mg/L	0.00018	0.0884	mg/L	0.00018	0.20%
Na589-radial†	1062978.5	71.55	mg/L	0.129	71.55	mg/L	0.129	0.18%

010825

Sequence No.: 16
Sample ID: LCS16A26KE8
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 114
Date Collected: 2/8/2016 6:20:19 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.010	500	5.000

Replicate Data: LCS16A26KE8

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1091781.9	1091781.9	93.39	mg/L			18:21:22
1	K_766-radial†	15510.8	17088.1	3.347	mg/L	3.347	mg/L	18:21:27
1	Li670-radial†	5019.2	3862.8	0.0170	mg/L	0.0170	mg/L	18:21:27
1	Na589-radial†	489748.2	521707.9	35.12	mg/L	35.12	mg/L	18:21:22
2	Sc361-radial	1098931.3	1098931.3	94.00	mg/L			18:21:51
2	K_766-radial†	15748.3	17232.7	3.376	mg/L	3.376	mg/L	18:21:56
2	Li670-radial†	4971.7	3777.3	0.0166	mg/L	0.0166	mg/L	18:21:56
2	Na589-radial†	492295.0	521005.5	35.07	mg/L	35.07	mg/L	18:21:51

Mean Data: LCS16A26KE8

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1095356.6	93.69	mg/L	0.432				0.46%
K_766-radial†	17160.4	3.362	mg/L	0.0200	3.362	mg/L	0.0200	0.60%
Li670-radial†	3820.1	0.0168	mg/L	0.00027	0.0168	mg/L	0.00027	1.58%
Na589-radial†	521356.7	35.09	mg/L	0.033	35.09	mg/L	0.033	0.10%

010826

Sequence No.: 17
Sample ID: 588049TF DF10
Analyst: BV
Initial Sample Wt:
Dilution:

Autosampler Location: 115
Date Collected: 2/8/2016 6:22:08 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.020	250	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.200	25	5.000

Replicate Data: 588049TF DF10

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1164841.2	1164841.2	99.63	mg/L			18:23:14
1	K_766-radial†	30690.4	31281.6	6.128	mg/L	6.128	mg/L	18:23:19
1	Li670-radial†	4189.2	2692.6	0.0118	mg/L	0.0118	mg/L	18:23:19
1	Na589-radial†	63497.8	61002.7	4.106	mg/L	4.106	mg/L	18:23:19
2	Sc361-radial	1158142.6	1158142.6	99.06	mg/L			18:23:46
2	K_766-radial†	30718.6	31488.2	6.168	mg/L	6.168	mg/L	18:23:52
2	Li670-radial†	4218.3	2746.3	0.0121	mg/L	0.0121	mg/L	18:23:52
2	Na589-radial†	63528.5	61402.2	4.133	mg/L	4.133	mg/L	18:23:52

Mean Data: 588049TF DF10

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1161491.9	99.35	mg/L	0.405				0.41%
K_766-radial†	31384.9	6.148	mg/L	0.0286	6.148	mg/L	0.0286	0.47%
Li670-radial†	2719.4	0.0120	mg/L	0.00017	0.0120	mg/L	0.00017	1.40%
Na589-radial†	61202.5	4.119	mg/L	0.0190	4.119	mg/L	0.0190	0.46%

010827

Sequence No.: 18
Sample ID: 588556TF DF10
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 116
Date Collected: 2/8/2016 6:24:04 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.200	25	5.000

Replicate Data: 588556TF DF10

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1153903.7	1153903.7	98.70	mg/L			18:25:05
1	K_766-radial†	29257.8	30122.0	5.901	mg/L	5.901	mg/L	18:25:11
1	Li670-radial†	6347.8	4919.5	0.0216	mg/L	0.0216	mg/L	18:25:11
1	Na589-radial†	48060.1	45965.6	3.094	mg/L	3.094	mg/L	18:25:11
2	Sc361-radial	1167616.0	1167616.0	99.87	mg/L			18:25:33
2	K_766-radial†	29103.6	29619.5	5.802	mg/L	5.802	mg/L	18:25:39
2	Li670-radial†	6348.4	4844.6	0.0213	mg/L	0.0213	mg/L	18:25:39
2	Na589-radial†	47729.5	45062.7	3.033	mg/L	3.033	mg/L	18:25:39

Mean Data: 588556TF DF10

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1160759.9	99.29	mg/L	0.829				0.84%
K_766-radial†	29870.8	5.851	mg/L	0.0696	5.851	mg/L	0.0696	1.19%
Li670-radial†	4882.1	0.0215	mg/L	0.00023	0.0215	mg/L	0.00023	1.09%
Na589-radial†	45514.2	3.064	mg/L	0.0430	3.064	mg/L	0.0430	1.40%

010828

Sequence No.: 19
Sample ID: 588556TFD DF10
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 117
Date Collected: 2/8/2016 6:25:51 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.020	250	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.200	25	5.000

Replicate Data: 588556TFD DF10

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1166070.6	1166070.6	99.74	mg/L			18:26:51
1	K_766-radial†	31242.7	31802.8	6.230	mg/L	6.230	mg/L	18:26:57
1	Li670-radial†	6343.7	4848.3	0.0213	mg/L	0.0213	mg/L	18:26:57
1	Na589-radial†	51249.9	48655.7	3.275	mg/L	3.275	mg/L	18:26:57
2	Sc361-radial	1158822.4	1158822.4	99.12	mg/L			18:27:18
2	K_766-radial†	31116.6	31871.5	6.243	mg/L	6.243	mg/L	18:27:24
2	Li670-radial†	6412.6	4957.6	0.0218	mg/L	0.0218	mg/L	18:27:24
2	Na589-radial†	51082.7	48808.3	3.285	mg/L	3.285	mg/L	18:27:24

Mean Data: 588556TFD DF10

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1162446.5	99.43	mg/L	0.438				0.44%
K_766-radial†	31837.2	6.237	mg/L	0.0095	6.237	mg/L	0.0095	0.15%
Li670-radial†	4903.0	0.0216	mg/L	0.00034	0.0216	mg/L	0.00034	1.58%
Na589-radial†	48732.0	3.280	mg/L	0.0073	3.280	mg/L	0.0073	0.22%

010829

Sequence No.: 20
Sample ID: 588556TFL DF50
Analyst: BV
Initial Sample Wt:
Dilution:

Autosampler Location: 118
Date Collected: 2/8/2016 6:27:36 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.200	25	5.000

Replicate Data: 588556TFL DF50

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1151464.9	1151464.9	98.49	mg/L			18:28:36
1	K_766-radial†	5602.7	6167.3	1.208	mg/L	1.208	mg/L	18:28:41
1	Li670-radial†	2311.9	835.4	0.0037	mg/L	0.0037	mg/L	18:28:41
1	Na589-radial†	11683.7	9134.9	0.6149	mg/L	0.6149	mg/L	18:28:41
2	Sc361-radial	1161310.3	1161310.3	99.33	mg/L			18:29:03
2	K_766-radial†	5707.6	6224.6	1.219	mg/L	1.219	mg/L	18:29:08
2	Li670-radial†	2408.3	912.6	0.0040	mg/L	0.0040	mg/L	18:29:08
2	Na589-radial†	11770.3	9121.6	0.6140	mg/L	0.6140	mg/L	18:29:08

Mean Data: 588556TFL DF50

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1156387.6	98.91	mg/L	0.595				0.60%
K_766-radial†	6195.9	1.214	mg/L	0.0079	1.214	mg/L	0.0079	0.65%
Li670-radial†	874.0	0.0038	mg/L	0.00024	0.0038	mg/L	0.00024	6.24%
Na589-radial†	9128.2	0.6144	mg/L	0.00063	0.6144	mg/L	0.00063	0.10%

010830

Sequence No.: 21
Sample ID: 588556TFMS3 DF10
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 119
Date Collected: 2/8/2016 6:29:20 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.020	250	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.200	25	5.000

Replicate Data: 588556TFMS3 DF10

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1167589.4	1167589.4	99.87	mg/L			18:30:26
1	K_766-radial†	36656.4	37182.8	7.284	mg/L	7.284	mg/L	18:30:31
1	Li670-radial†	6578.1	5074.8	0.0223	mg/L	0.0223	mg/L	18:30:31
1	Na589-radial†	66599.5	63958.4	4.305	mg/L	4.305	mg/L	18:30:31
2	Sc361-radial	1175483.6	1175483.6	100.5	mg/L			18:30:58
2	K_766-radial†	36586.0	36866.3	7.222	mg/L	7.222	mg/L	18:31:04
2	Li670-radial†	6618.9	5071.1	0.0223	mg/L	0.0223	mg/L	18:31:04
2	Na589-radial†	66457.9	63369.7	4.265	mg/L	4.265	mg/L	18:31:04

Mean Data: 588556TFMS3 DF10

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1171536.5	100.2	mg/L	0.48				0.48%
K_766-radial†	37024.5	7.253	mg/L	0.0438	7.253	mg/L	0.0438	0.60%
Li670-radial†	5073.0	0.0223	mg/L	0.00001	0.0223	mg/L	0.00001	0.05%
Na589-radial†	63664.0	4.285	mg/L	0.0280	4.285	mg/L	0.0280	0.65%

010831

Sequence No.: 22
Sample ID: CCV
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 120
Date Collected: 2/8/2016 6:31:16 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.010	500	5.000
Na589-radial	0.010	500	5.000

Replicate Data: CCV

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1175546.7	1175546.7	100.6	mg/L			18:32:19
1	K_766-radial†	102653.2	102569.8	20.09	mg/L	20.09	mg/L	18:32:25
1	Li670-radial†	1160891.2	1153022.7	5.074	mg/L	5.074	mg/L	18:32:19
1	Na589-radial†	458975.4	453734.4	30.54	mg/L	30.54	mg/L	18:32:19
2	Sc361-radial	1163972.5	1163972.5	99.56	mg/L			18:32:50
2	K_766-radial†	102063.0	102992.1	20.18	mg/L	20.18	mg/L	18:32:56
2	Li670-radial†	1152241.0	1155814.6	5.086	mg/L	5.086	mg/L	18:32:50
2	Na589-radial†	455604.3	454887.4	30.62	mg/L	30.62	mg/L	18:32:50

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1169759.6	100.1	mg/L	0.70				0.70%
K_766-radial†	102780.9	20.13	mg/L	0.058	20.13	mg/L	0.058	0.29%
Li670-radial†	1154418.7	5.080	mg/L	0.0087	5.080	mg/L	0.0087	0.17%
Na589-radial†	454310.9	30.58	mg/L	0.055	30.58	mg/L	0.055	0.18%

010832

Sequence No.: 23
Sample ID: CCB
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 121
Date Collected: 2/8/2016 6:33:08 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.020	250	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.200	25	5.000

Replicate Data: CCB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1190999.0	1190999.0	101.9	mg/L			18:33:57
1	K_766-radial†	-386.3	99.5	0.0195	mg/L	0.0195	mg/L	18:34:03
1	Li670-radial†	1279.1	-256.4	-0.0011	mg/L	-0.0011	mg/L	18:34:03
1	Na589-radial†	2770.2	-8.5	-0.0006	mg/L	-0.0006	mg/L	18:34:03
2	Sc361-radial	1192731.8	1192731.8	102.0	mg/L			18:34:14
2	K_766-radial†	-393.8	92.7	0.0182	mg/L	0.0182	mg/L	18:34:19
2	Li670-radial†	1287.1	-250.3	-0.0011	mg/L	-0.0011	mg/L	18:34:19
2	Na589-radial†	2794.2	11.0	0.0007	mg/L	0.0007	mg/L	18:34:19

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1191865.4	101.9	mg/L	0.10				0.10%
K_766-radial†	96.1	0.0188	mg/L	0.00095	0.0188	mg/L	0.00095	5.03%
Li670-radial†	-253.3	-0.0011	mg/L	0.00002	-0.0011	mg/L	0.00002	1.69%
Na589-radial†	1.2	0.0001	mg/L	0.00093	0.0001	mg/L	0.00093	>999.9%

010833

Sequence No.: 24
Sample ID: 588556TFMS4 DF10
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 122
Date Collected: 2/8/2016 6:34:31 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.200	25	5.000

Replicate Data: 588556TFMS4 DF10

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1163809.5	1163809.5	99.55	mg/L			18:35:32
1	K_766-radial†	33474.5	34105.6	6.681	mg/L	6.681	mg/L	18:35:38
1	Li670-radial†	9544.8	8076.4	0.0355	mg/L	0.0355	mg/L	18:35:38
1	Na589-radial†	52972.2	50485.6	3.398	mg/L	3.398	mg/L	18:35:38
2	Sc361-radial	1161715.4	1161715.4	99.37	mg/L			18:36:00
2	K_766-radial†	33504.6	34196.5	6.699	mg/L	6.699	mg/L	18:36:06
2	Li670-radial†	9527.3	8076.0	0.0355	mg/L	0.0355	mg/L	18:36:06
2	Na589-radial†	53253.6	50864.8	3.424	mg/L	3.424	mg/L	18:36:06

Mean Data: 588556TFMS4 DF10

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1162762.4	99.46	mg/L	0.127				0.13%
K_766-radial†	34151.1	6.690	mg/L	0.0126	6.690	mg/L	0.0126	0.19%
Li670-radial†	8076.2	0.0355	mg/L	0.00000	0.0355	mg/L	0.00000	0.00%
Na589-radial†	50675.2	3.411	mg/L	0.0180	3.411	mg/L	0.0180	0.53%

010834

Sequence No.: 25
Sample ID: 588556TFAS DF10
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 123
Date Collected: 2/8/2016 6:36:18 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.010	500	5.000

Replicate Data: 588556TFAS DF10

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Units	Sample Conc.	Units	Analysis Time
1	Sc361-radial	1130494.2	1130494.2	96.70	mg/L			18:37:25
1	K_766-radial†	133376.9	138411.5	27.11	mg/L	27.11	mg/L	18:37:31
1	Li670-radial†	6093.4	4789.6	0.0211	mg/L	0.0211	mg/L	18:37:31
1	Na589-radial†	348708.8	357892.2	24.09	mg/L	24.09	mg/L	18:37:25
2	Sc361-radial	1128142.4	1128142.4	96.50	mg/L			18:37:59
2	K_766-radial†	132397.5	137684.0	26.97	mg/L	26.97	mg/L	18:38:05
2	Li670-radial†	6134.4	4845.2	0.0213	mg/L	0.0213	mg/L	18:38:05
2	Na589-radial†	346920.1	356790.4	24.02	mg/L	24.02	mg/L	18:37:59

Mean Data: 588556TFAS DF10

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Sc361-radial	1129318.3	96.60	mg/L	0.142				0.15%
K_766-radial†	138047.8	27.04	mg/L	0.101	27.04	mg/L	0.101	0.37%
Li670-radial†	4817.4	0.0212	mg/L	0.00017	0.0212	mg/L	0.00017	0.82%
Na589-radial†	357341.3	24.05	mg/L	0.052	24.05	mg/L	0.052	0.22%

010835

Sequence No.: 26
Sample ID: 590212TF DF10
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 124
Date Collected: 2/8/2016 6:38:17 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.200	25	5.000

Replicate Data: 590212TF DF10

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1167091.4	1167091.4	99.83	mg/L			18:39:18
1	K_766-radial†	19413.6	19925.9	3.903	mg/L	3.903	mg/L	18:39:24
1	Li670-radial†	3033.9	1527.2	0.0067	mg/L	0.0067	mg/L	18:39:24
1	Na589-radial†	44481.7	41830.8	2.816	mg/L	2.816	mg/L	18:39:24
2	Sc361-radial	1164356.0	1164356.0	99.59	mg/L			18:39:46
2	K_766-radial†	19555.3	20113.8	3.940	mg/L	3.940	mg/L	18:39:52
2	Li670-radial†	3183.5	1684.6	0.0074	mg/L	0.0074	mg/L	18:39:52
2	Na589-radial†	44676.6	42131.2	2.836	mg/L	2.836	mg/L	18:39:52

Mean Data: 590212TF DF10

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1165723.7	99.71	mg/L	0.165				0.17%
K_766-radial†	20019.8	3.922	mg/L	0.0260	3.922	mg/L	0.0260	0.66%
Li670-radial†	1605.9	0.0071	mg/L	0.00049	0.0071	mg/L	0.00049	6.93%
Na589-radial†	41981.0	2.826	mg/L	0.0143	2.826	mg/L	0.0143	0.51%

010836

Sequence No.: 27
Sample ID: 590213TF DF10
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 125
Date Collected: 2/8/2016 6:40:04 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.200	25	5.000

Replicate Data: 590213TF DF10

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1172622.4	1172622.4	100.3	mg/L			18:41:07
1	K_766-radial†	48384.6	48718.4	9.544	mg/L	9.544	mg/L	18:41:12
1	Li670-radial†	5001.7	3474.8	0.0153	mg/L	0.0153	mg/L	18:41:12
1	Na589-radial†	93960.1	90950.8	6.122	mg/L	6.122	mg/L	18:41:12
2	Sc361-radial	1165266.0	1165266.0	99.67	mg/L			18:41:37
2	K_766-radial†	48226.5	48864.2	9.572	mg/L	9.572	mg/L	18:41:42
2	Li670-radial†	5024.7	3529.4	0.0155	mg/L	0.0155	mg/L	18:41:42
2	Na589-radial†	93530.7	91111.4	6.133	mg/L	6.133	mg/L	18:41:42

Mean Data: 590213TF DF10

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1168944.2	99.99	mg/L	0.445				0.44%
K_766-radial†	48791.3	9.558	mg/L	0.0202	9.558	mg/L	0.0202	0.21%
Li670-radial†	3502.1	0.0154	mg/L	0.00017	0.0154	mg/L	0.00017	1.10%
Na589-radial†	91031.1	6.127	mg/L	0.0076	6.127	mg/L	0.0076	0.12%

010837

Sequence No.: 28
Sample ID: 590214TF DF10
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 126
Date Collected: 2/8/2016 6:41:54 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.200	25	5.000

Replicate Data: 590214TF DF10

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Units	Sample Conc.	Units	Analysis Time
1	Sc361-radial	1181841.5	1181841.5	101.1	mg/L			18:43:00
1	K_766-radial†	80374.6	79987.4	15.67	mg/L	15.67	mg/L	18:43:06
1	Li670-radial†	6853.5	5267.8	0.0232	mg/L	0.0232	mg/L	18:43:06
1	Na589-radial†	132917.6	128757.9	8.667	mg/L	8.667	mg/L	18:43:06
2	Sc361-radial	1170346.1	1170346.1	100.1	mg/L			18:43:33
2	K_766-radial†	81024.1	81417.2	15.95	mg/L	15.95	mg/L	18:43:39
2	Li670-radial†	6997.4	5478.1	0.0241	mg/L	0.0241	mg/L	18:43:39
2	Na589-radial†	133908.7	131039.5	8.820	mg/L	8.820	mg/L	18:43:39

Mean Data: 590214TF DF10

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Sc361-radial	1176093.8	100.6	mg/L	0.70				0.69%
K_766-radial†	80702.3	15.81	mg/L	0.198	15.81	mg/L	0.198	1.25%
Li670-radial†	5372.9	0.0236	mg/L	0.00065	0.0236	mg/L	0.00065	2.77%
Na589-radial†	129898.7	8.743	mg/L	0.1086	8.743	mg/L	0.1086	1.24%

010838

Sequence No.: 29
Sample ID: 591000TF DF10
Analyst: BV
Initial Sample Wt:
Dilution:

Autosampler Location: 127
Date Collected: 2/8/2016 6:43:51 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.200	25	5.000

Replicate Data: 591000TF DF10

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1181437.7	1181437.7	101.1	mg/L			18:44:52
1	K_766-radial†	69949.3	69698.1	13.65	mg/L	13.65	mg/L	18:44:58
1	Li670-radial†	7015.3	5430.2	0.0239	mg/L	0.0239	mg/L	18:44:58
1	Na589-radial†	84192.4	80586.1	5.424	mg/L	5.424	mg/L	18:44:58
2	Sc361-radial	1177594.1	1177594.1	100.7	mg/L			18:45:21
2	K_766-radial†	69795.3	69771.1	13.67	mg/L	13.67	mg/L	18:45:26
2	Li670-radial†	6975.2	5413.0	0.0238	mg/L	0.0238	mg/L	18:45:26
2	Na589-radial†	84062.1	80728.7	5.434	mg/L	5.434	mg/L	18:45:26

Mean Data: 591000TF DF10

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1179515.9	100.9	mg/L	0.23				0.23%
K_766-radial†	69734.6	13.66	mg/L	0.010	13.66	mg/L	0.010	0.07%
Li670-radial†	5421.6	0.0239	mg/L	0.00005	0.0239	mg/L	0.00005	0.22%
Na589-radial†	80657.4	5.429	mg/L	0.0068	5.429	mg/L	0.0068	0.12%

010839

Sequence No.: 30
Sample ID: CRI
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 128
Date Collected: 2/8/2016 6:45:39 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.200	25	5.000

Replicate Data: CRI

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1178498.2	1178498.2	100.8	mg/L			18:46:30
1	K_766-radial†	2095.9	2557.9	0.5011	mg/L	0.5011	mg/L	18:46:35
1	Li670-radial†	3133.4	1596.6	0.0070	mg/L	0.0070	mg/L	18:46:35
1	Na589-radial†	7058.4	4274.3	0.2877	mg/L	0.2877	mg/L	18:46:35
2	Sc361-radial	1182037.9	1182037.9	101.1	mg/L			18:46:47
2	K_766-radial†	2084.9	2540.8	0.4977	mg/L	0.4977	mg/L	18:46:53
2	Li670-radial†	3185.1	1638.3	0.0072	mg/L	0.0072	mg/L	18:46:53
2	Na589-radial†	6976.4	4172.3	0.2808	mg/L	0.2808	mg/L	18:46:53

Mean Data: CRI

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1180268.1	101.0	mg/L	0.21				0.21%
K_766-radial†	2549.3	0.4994	mg/L	0.00236	0.4994	mg/L	0.00236	0.47%
Li670-radial†	1617.5	0.0071	mg/L	0.00013	0.0071	mg/L	0.00013	1.83%
Na589-radial†	4223.3	0.2843	mg/L	0.00486	0.2843	mg/L	0.00486	1.71%

010840

Sequence No.: 31
Sample ID: CRI-N
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 129
Date Collected: 2/8/2016 6:47:05 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.020	250	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.200	25	5.000

Replicate Data: CRI-N

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1160309.4	1160309.4	99.25	mg/L			18:47:55
1	K_766-radial†	4443.7	4956.1	0.9709	mg/L	0.9709	mg/L	18:48:00
1	Li670-radial†	5486.3	4015.9	0.0177	mg/L	0.0177	mg/L	18:48:00
1	Na589-radial†	10852.5	8207.0	0.5524	mg/L	0.5524	mg/L	18:48:00
2	Sc361-radial	1164209.9	1164209.9	99.58	mg/L			18:48:11
2	K_766-radial†	4446.7	4944.1	0.9685	mg/L	0.9685	mg/L	18:48:17
2	Li670-radial†	5465.7	3976.8	0.0175	mg/L	0.0175	mg/L	18:48:17
2	Na589-radial†	10892.8	8210.8	0.5527	mg/L	0.5527	mg/L	18:48:17

Mean Data: CRI-N

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1162259.7	99.41	mg/L	0.236				0.24%
K_766-radial†	4950.1	0.9697	mg/L	0.00165	0.9697	mg/L	0.00165	0.17%
Li670-radial†	3996.3	0.0176	mg/L	0.00012	0.0176	mg/L	0.00012	0.69%
Na589-radial†	8208.9	0.5525	mg/L	0.00018	0.5525	mg/L	0.00018	0.03%

010841

Sequence No.: 32
Sample ID: ICSA
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 130
Date Collected: 2/8/2016 6:48:29 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.200	25	5.000

Replicate Data: ICSA

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1071637.6	1071637.6	91.66	mg/L			18:49:35
1	K_766-radial†	-373.6	71.1	0.0139	mg/L	0.0139	mg/L	18:49:40
1	Li670-radial†	1697.7	340.2	0.0015	mg/L	0.0015	mg/L	18:49:40
1	Na589-radial†	3886.1	1511.8	0.1018	mg/L	0.1018	mg/L	18:49:40
2	Sc361-radial	1074268.1	1074268.1	91.89	mg/L			18:50:07
2	K_766-radial†	-340.5	108.1	0.0212	mg/L	0.0212	mg/L	18:50:13
2	Li670-radial†	1612.4	242.9	0.0011	mg/L	0.0011	mg/L	18:50:13
2	Na589-radial†	3966.3	1588.6	0.1069	mg/L	0.1069	mg/L	18:50:13

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1072952.8	91.78	mg/L	0.159				0.17%
K_766-radial†	89.6	0.0175	mg/L	0.00513	0.0175	mg/L	0.00513	29.24%
Li670-radial†	291.5	0.0013	mg/L	0.00030	0.0013	mg/L	0.00030	23.61%
Na589-radial†	1550.2	0.1043	mg/L	0.00366	0.1043	mg/L	0.00366	3.50%

010842

Sequence No.: 33 Autosampler Location: 131
Sample ID: ICSAB Date Collected: 2/8/2016 6:50:25 PM
Analyst: BV Data Type: Original
Initial Sample Wt: Initial Sample Vol:
Dilution: Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.200	25	5.000

Replicate Data: ICSAB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1083635.9	1083635.9	92.69	mg/L			18:51:30
1	K_766-radial†	-457.5	-14.9	-0.0029	mg/L	-0.0029	mg/L	18:51:36
1	Li670-radial†	228790.3	245324.7	1.080	mg/L	1.080	mg/L	18:51:36
1	Na589-radial†	3492.9	1040.6	0.0700	mg/L	0.0700	mg/L	18:51:36
2	Sc361-radial	1074380.9	1074380.9	91.90	mg/L			18:52:03
2	K_766-radial†	-413.0	29.2	0.0057	mg/L	0.0057	mg/L	18:52:08
2	Li670-radial†	228902.9	247573.5	1.089	mg/L	1.089	mg/L	18:52:08
2	Na589-radial†	3541.4	1125.8	0.0758	mg/L	0.0758	mg/L	18:52:08

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1079008.4	92.29	mg/L	0.560				0.61%
K_766-radial†	7.1	0.0014	mg/L	0.00611	0.0014	mg/L	0.00611	436.66%
Li670-radial†	246449.1	1.085	mg/L	0.0070	1.085	mg/L	0.0070	0.65%
Na589-radial†	1083.2	0.0729	mg/L	0.00405	0.0729	mg/L	0.00405	5.56%

010843

Sequence No.: 34
Sample ID: CCV
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 132
Date Collected: 2/8/2016 6:52:20 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.010	500	5.000
Na589-radial	0.010	500	5.000

Replicate Data: CCV

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1164253.1	1164253.1	99.58	mg/L			18:53:23
1	K_766-radial†	102479.8	103386.0	20.25	mg/L	20.25	mg/L	18:53:29
1	Li670-radial†	1152719.0	1156015.7	5.087	mg/L	5.087	mg/L	18:53:23
1	Na589-radial†	455351.7	454523.4	30.59	mg/L	30.59	mg/L	18:53:23
2	Sc361-radial	1168919.3	1168919.3	99.98	mg/L			18:53:54
2	K_766-radial†	102863.1	103358.5	20.25	mg/L	20.25	mg/L	18:54:00
2	Li670-radial†	1156690.8	1155367.5	5.084	mg/L	5.084	mg/L	18:53:54
2	Na589-radial†	456912.9	454259.6	30.58	mg/L	30.58	mg/L	18:53:54

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1166586.2	99.78	mg/L	0.282				0.28%
K_766-radial†	103372.2	20.25	mg/L	0.004	20.25	mg/L	0.004	0.02%
Li670-radial†	1155691.6	5.086	mg/L	0.0020	5.086	mg/L	0.0020	0.04%
Na589-radial†	454391.5	30.58	mg/L	0.013	30.58	mg/L	0.013	0.04%

010844

Sequence No.: 35
Sample ID: CCB
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 133
Date Collected: 2/8/2016 6:54:12 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.200	25	5.000

Replicate Data: CCB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1182832.2	1182832.2	101.2	mg/L			18:55:02
1	K_766-radial†	-385.8	97.3	0.0191	mg/L	0.0191	mg/L	18:55:07
1	Li670-radial†	951.1	-571.9	-0.0025	mg/L	-0.0025	mg/L	18:55:07
1	Na589-radial†	2668.4	-90.4	-0.0061	mg/L	-0.0061	mg/L	18:55:07
2	Sc361-radial	1184259.3	1184259.3	101.3	mg/L			18:55:19
2	K_766-radial†	-399.6	84.1	0.0165	mg/L	0.0165	mg/L	18:55:24
2	Li670-radial†	1073.4	-452.3	-0.0020	mg/L	-0.0020	mg/L	18:55:24
2	Na589-radial†	2660.7	-101.2	-0.0068	mg/L	-0.0068	mg/L	18:55:24

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1183545.8	101.2	mg/L	0.09				0.09%
K_766-radial†	90.7	0.0178	mg/L	0.00183	0.0178	mg/L	0.00183	10.27%
Li670-radial†	-512.1	-0.0023	mg/L	0.00037	-0.0023	mg/L	0.00037	16.51%
Na589-radial†	-95.8	-0.0064	mg/L	0.00051	-0.0064	mg/L	0.00051	7.93%

010845

Sequence No.: 36
Sample ID: 588049TF
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 134
Date Collected: 2/8/2016 6:55:37 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.020	250	5.000
K_766-radial	0.020	250	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.020	250	5.000

Replicate Data: 588049TF

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Units	Sample Conc.	Units	Analysis Time
1	Sc361-radial	1110799.7	1110799.7	95.01	mg/L			18:56:37
1	K_766-radial†	311791.9	328637.7	64.38	mg/L	64.38	mg/L	18:56:37
1	Li670-radial†	27970.7	27927.1	0.1229	mg/L	0.1229	mg/L	18:56:42
1	Na589-radial†	602896.0	631816.5	42.53	mg/L	42.53	mg/L	18:56:37
2	Sc361-radial	1099670.0	1099670.0	94.06	mg/L			18:57:03
2	K_766-radial†	309507.9	329530.7	64.55	mg/L	64.55	mg/L	18:57:03
2	Li670-radial†	27955.2	28208.6	0.1241	mg/L	0.1241	mg/L	18:57:08
2	Na589-radial†	598384.4	633442.2	42.64	mg/L	42.64	mg/L	18:57:03

Mean Data: 588049TF

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Sc361-radial	1105234.8	94.54	mg/L	0.673				0.71%
K_766-radial†	329084.2	64.47	mg/L	0.124	64.47	mg/L	0.124	0.19%
Li670-radial†	28067.8	0.1235	mg/L	0.00088	0.1235	mg/L	0.00088	0.71%
Na589-radial†	632629.3	42.58	mg/L	0.077	42.58	mg/L	0.077	0.18%

010846

Sequence No.: 37
Sample ID: 588556TF
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 135
Date Collected: 2/8/2016 6:57:20 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.020	250	5.000
K_766-radial	0.020	250	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.020	250	5.000

Replicate Data: 588556TF

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1078044.4	1078044.4	92.21	mg/L			18:58:24
1	K_766-radial†	304921.6	331157.9	64.87	mg/L	64.87	mg/L	18:58:24
1	Li670-radial†	50596.1	53358.2	0.2348	mg/L	0.2348	mg/L	18:58:29
1	Na589-radial†	461424.2	497674.1	33.50	mg/L	33.50	mg/L	18:58:24
2	Sc361-radial	1076194.1	1076194.1	92.05	mg/L			18:58:54
2	K_766-radial†	305085.9	331904.9	65.02	mg/L	65.02	mg/L	18:58:54
2	Li670-radial†	51150.1	54054.3	0.2379	mg/L	0.2379	mg/L	18:58:59
2	Na589-radial†	462192.8	499369.4	33.61	mg/L	33.61	mg/L	18:58:54

Mean Data: 588556TF

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1077119.3	92.13	mg/L	0.112				0.12%
K_766-radial†	331531.4	64.94	mg/L	0.103	64.94	mg/L	0.103	0.16%
Li670-radial†	53706.3	0.2363	mg/L	0.00217	0.2363	mg/L	0.00217	0.92%
Na589-radial†	498521.8	33.56	mg/L	0.081	33.56	mg/L	0.081	0.24%

010847

Sequence No.: 38
Sample ID: 588556TFD
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 136
Date Collected: 2/8/2016 6:59:12 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.020	250	5.000
K_766-radial	0.020	250	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.020	250	5.000

Replicate Data: 588556TFD

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1079487.0	1079487.0	92.33	mg/L			19:00:16
1	K_766-radial†	324727.5	352166.2	68.99	mg/L	68.99	mg/L	19:00:16
1	Li670-radial†	52466.5	55310.5	0.2434	mg/L	0.2434	mg/L	19:00:21
1	Na589-radial†	495299.2	533692.9	35.92	mg/L	35.92	mg/L	19:00:16
2	Sc361-radial	1091115.5	1091115.5	93.33	mg/L			19:00:46
2	K_766-radial†	328160.0	352095.9	68.97	mg/L	68.97	mg/L	19:00:46
2	Li670-radial†	53091.5	55374.7	0.2437	mg/L	0.2437	mg/L	19:00:51
2	Na589-radial†	499677.1	532666.9	35.85	mg/L	35.85	mg/L	19:00:46

Mean Data: 588556TFD

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1085301.3	92.83	mg/L	0.703				0.76%
K_766-radial†	352131.0	68.98	mg/L	0.010	68.98	mg/L	0.010	0.01%
Li670-radial†	55342.6	0.2435	mg/L	0.00020	0.2435	mg/L	0.00020	0.08%
Na589-radial†	533179.9	35.89	mg/L	0.049	35.89	mg/L	0.049	0.14%

010848

Sequence No.: 39
Sample ID: 588556TFL DF5
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 137
Date Collected: 2/8/2016 7:01:04 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.200	25	5.000

Replicate Data: 588556TFL DF5

Rep1#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Units	Sample Conc.	Units	Analysis Time
1	Sc361-radial	1146853.9	1146853.9	98.10	mg/L			19:02:17
1	K_766-radial†	62000.5	63682.3	12.47	mg/L	12.47	mg/L	19:02:23
1	Li670-radial†	11365.8	10074.5	0.0443	mg/L	0.0443	mg/L	19:02:23
1	Na589-radial†	97475.1	96638.9	6.505	mg/L	6.505	mg/L	19:02:23
2	Sc361-radial	1144830.5	1144830.5	97.92	mg/L			19:02:58
2	K_766-radial†	61848.5	63638.8	12.47	mg/L	12.47	mg/L	19:03:03
2	Li670-radial†	11313.0	10041.1	0.0442	mg/L	0.0442	mg/L	19:03:03
2	Na589-radial†	97085.6	96416.7	6.490	mg/L	6.490	mg/L	19:03:03

Mean Data: 588556TFL DF5

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Sc361-radial	1145842.2	98.01	mg/L	0.122				0.12%
K_766-radial†	63660.6	12.47	mg/L	0.006	12.47	mg/L	0.006	0.05%
Li670-radial†	10057.8	0.0443	mg/L	0.00010	0.0443	mg/L	0.00010	0.24%
Na589-radial†	96527.8	6.497	mg/L	0.0106	6.497	mg/L	0.0106	0.16%

010849

Sequence No.: 40
Sample ID: 588556TFMS3
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 138
Date Collected: 2/8/2016 7:03:16 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.020	250	5.000
K_766-radial	0.020	250	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.020	250	5.000

Replicate Data: 588556TFMS3

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1055480.8	1055480.8	90.28	mg/L			19:04:20
1	K_766-radial†	364950.3	404718.1	79.28	mg/L	79.28	mg/L	19:04:20
1	Li670-radial†	51904.2	55980.1	0.2463	mg/L	0.2463	mg/L	19:04:25
1	Na589-radial†	624696.5	689221.1	46.39	mg/L	46.39	mg/L	19:04:20
2	Sc361-radial	1063910.5	1063910.5	91.00	mg/L			19:04:50
2	K_766-radial†	368036.0	404906.0	79.32	mg/L	79.32	mg/L	19:04:50
2	Li670-radial†	52964.0	56689.1	0.2495	mg/L	0.2495	mg/L	19:04:55
2	Na589-radial†	630385.0	689989.6	46.44	mg/L	46.44	mg/L	19:04:50

Mean Data: 588556TFMS3

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1059695.6	90.64	mg/L	0.510				0.56%
K_766-radial†	404812.1	79.30	mg/L	0.026	79.30	mg/L	0.026	0.03%
Li670-radial†	56334.6	0.2479	mg/L	0.00221	0.2479	mg/L	0.00221	0.89%
Na589-radial†	689605.3	46.42	mg/L	0.037	46.42	mg/L	0.037	0.08%

010850

Sequence No.: 41
Sample ID: 588556TFMS4
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 139
Date Collected: 2/8/2016 7:05:08 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.020	250	5.000
K_766-radial	0.020	250	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.020	250	5.000

Replicate Data: 588556TFMS4

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1092583.8	1092583.8	93.45	mg/L			19:06:12
1	K_766-radial†	341880.6	366305.0	71.76	mg/L	71.76	mg/L	19:06:12
1	Li670-radial†	83321.4	87645.4	0.3857	mg/L	0.3857	mg/L	19:06:17
1	Na589-radial†	506449.7	539194.3	36.29	mg/L	36.29	mg/L	19:06:12
2	Sc361-radial	1074901.6	1074901.6	91.94	mg/L			19:06:42
2	K_766-radial†	337711.0	367787.9	72.05	mg/L	72.05	mg/L	19:06:42
2	Li670-radial†	83987.9	89836.9	0.3953	mg/L	0.3953	mg/L	19:06:48
2	Na589-radial†	500790.7	541953.9	36.48	mg/L	36.48	mg/L	19:06:42

Mean Data: 588556TFMS4

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1083742.7	92.70	mg/L	1.069				1.15%
K_766-radial†	367046.5	71.90	mg/L	0.205	71.90	mg/L	0.205	0.29%
Li670-radial†	88741.2	0.3905	mg/L	0.00682	0.3905	mg/L	0.00682	1.75%
Na589-radial†	540574.1	36.39	mg/L	0.131	36.39	mg/L	0.131	0.36%

010851

Sequence No.: 42
Sample ID: 588556TFAS
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 140
Date Collected: 2/8/2016 7:07:00 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.020	250	5.000
K_766-radial	0.020	250	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.020	250	5.000

Replicate Data: 588556TFAS

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1052924.0	1052924.0	90.06	mg/L			19:08:03
1	K_766-radial†	400982.9	445708.4	87.31	mg/L	87.31	mg/L	19:08:03
1	Li670-radial†	49792.5	53774.9	0.2366	mg/L	0.2366	mg/L	19:08:09
1	Na589-radial†	754791.2	835351.4	56.23	mg/L	56.23	mg/L	19:08:03
2	Sc361-radial	1068048.7	1068048.7	91.36	mg/L			19:08:34
2	K_766-radial†	406264.3	445184.6	87.21	mg/L	87.21	mg/L	19:08:34
2	Li670-radial†	50687.5	53971.8	0.2375	mg/L	0.2375	mg/L	19:08:39
2	Na589-radial†	764824.2	834465.7	56.17	mg/L	56.17	mg/L	19:08:34

Mean Data: 588556TFAS

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1060486.4	90.71	mg/L	0.915				1.01%
K_766-radial†	445446.5	87.26	mg/L	0.073	87.26	mg/L	0.073	0.08%
Li670-radial†	53873.3	0.2371	mg/L	0.00061	0.2371	mg/L	0.00061	0.26%
Na589-radial†	834908.6	56.20	mg/L	0.042	56.20	mg/L	0.042	0.08%

010852

Sequence No.: 43
Sample ID: 590212TF
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 141
Date Collected: 2/8/2016 7:08:52 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.010	500	5.000

Replicate Data: 590212TF

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1152731.8	1152731.8	98.60	mg/L			19:09:59
1	K_766-radial†	209559.3	213015.4	41.73	mg/L	41.73	mg/L	19:10:05
1	Li670-radial†	20090.8	18864.4	0.0830	mg/L	0.0830	mg/L	19:10:05
1	Na589-radial†	431348.7	434749.4	29.26	mg/L	29.26	mg/L	19:09:59
2	Sc361-radial	1154659.5	1154659.5	98.76	mg/L			19:10:33
2	K_766-radial†	209188.5	212285.1	41.59	mg/L	41.59	mg/L	19:10:39
2	Li670-radial†	20047.9	18786.9	0.0827	mg/L	0.0827	mg/L	19:10:39
2	Na589-radial†	431041.8	433708.4	29.19	mg/L	29.19	mg/L	19:10:33

Mean Data: 590212TF

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1153695.7	98.68	mg/L	0.117				0.12%
K_766-radial†	212650.2	41.66	mg/L	0.101	41.66	mg/L	0.101	0.24%
Li670-radial†	18825.6	0.0828	mg/L	0.00024	0.0828	mg/L	0.00024	0.29%
Na589-radial†	434228.9	29.23	mg/L	0.050	29.23	mg/L	0.050	0.17%

010853

Sequence No.: 44
Sample ID: 590213TF
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 142
Date Collected: 2/8/2016 7:10:51 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.010	500	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.010	500	5.000

Replicate Data: 590213TF

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1078890.3	1078890.3	92.28	mg/L			19:12:06
1	K_766-radial†	494906.6	536770.6	105.2	mg/L	105.2	mg/L	19:12:06
1	Li670-radial†	37753.6	39398.8	0.1734	mg/L	0.1734	mg/L	19:12:11
1	Na589-radial†	913593.6	987262.8	66.45	mg/L	66.45	mg/L	19:12:06
2	Sc361-radial	1065396.9	1065396.9	91.13	mg/L			19:12:47
2	K_766-radial†	488240.6	536247.9	105.0	mg/L	105.0	mg/L	19:12:47
2	Li670-radial†	37392.8	39520.9	0.1739	mg/L	0.1739	mg/L	19:12:53
2	Na589-radial†	900022.9	984909.4	66.29	mg/L	66.29	mg/L	19:12:47

Mean Data: 590213TF

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1072143.6	91.71	mg/L	0.816				0.89%
K_766-radial†	536509.3	105.1	mg/L	0.07	105.1	mg/L	0.07	0.07%
Li670-radial†	39459.8	0.1736	mg/L	0.00038	0.1736	mg/L	0.00038	0.22%
Na589-radial†	986086.1	66.37	mg/L	0.112	66.37	mg/L	0.112	0.17%

010854

Sequence No.: 45
Sample ID: 590214TF
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 143
Date Collected: 2/8/2016 7:13:05 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.010	500	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.010	500	5.000

Replicate Data: 590214TF

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1119490.0	1119490.0	95.76	mg/L			19:14:18
1	K_766-radial†	807153.9	843408.5	165.2	mg/L	165.2	mg/L	19:14:18
1	Li670-radial†	57014.7	58029.9	0.2554	mg/L	0.2554	mg/L	19:14:24
1	Na589-radial†	1280573.1	1334604.8	89.83	mg/L	89.83	mg/L	19:14:18
2	Sc361-radial	1110618.1	1110618.1	95.00	mg/L			19:14:58
2	K_766-radial†	801470.8	844159.6	165.4	mg/L	165.4	mg/L	19:14:58
2	Li670-radial†	56842.4	58324.1	0.2567	mg/L	0.2567	mg/L	19:15:04
2	Na589-radial†	1272187.7	1336460.8	89.96	mg/L	89.96	mg/L	19:14:58

Mean Data: 590214TF

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1115054.1	95.38	mg/L	0.537				0.56%
K_766-radial†	843784.1	165.3	mg/L	0.10	165.3	mg/L	0.10	0.06%
Li670-radial†	58177.0	0.2560	mg/L	0.00092	0.2560	mg/L	0.00092	0.36%
Na589-radial†	1335532.8	89.89	mg/L	0.088	89.89	mg/L	0.088	0.10%

010855

Sequence No.: 46
Sample ID: CCV
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 144
Date Collected: 2/8/2016 7:15:16 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.010	500	5.000
Na589-radial	0.010	500	5.000

Replicate Data: CCV

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1139003.3	1139003.3	97.42	mg/L			19:16:19
1	K_766-radial†	100654.0	103793.2	20.33	mg/L	20.33	mg/L	19:16:25
1	Li670-radial†	1135558.0	1164061.5	5.123	mg/L	5.123	mg/L	19:16:19
1	Na589-radial†	450191.4	459363.2	30.92	mg/L	30.92	mg/L	19:16:19
2	Sc361-radial	1136065.8	1136065.8	97.17	mg/L			19:16:50
2	K_766-radial†	99693.0	103071.4	20.19	mg/L	20.19	mg/L	19:16:56
2	Li670-radial†	1134144.3	1165620.5	5.129	mg/L	5.129	mg/L	19:16:50
2	Na589-radial†	449144.3	459480.4	30.93	mg/L	30.93	mg/L	19:16:50

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1137534.5	97.30	mg/L	0.178				0.18%
K_766-radial†	103432.3	20.26	mg/L	0.100	20.26	mg/L	0.100	0.49%
Li670-radial†	1164841.0	5.126	mg/L	0.0049	5.126	mg/L	0.0049	0.09%
Na589-radial†	459421.8	30.92	mg/L	0.006	30.92	mg/L	0.006	0.02%

010856

Sequence No.: 47
Sample ID: CCB
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 145
Date Collected: 2/8/2016 7:17:08 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.200	25	5.000

Replicate Data: CCB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1133314.1	1133314.1	96.94	mg/L			19:17:58
1	K_766-radial†	-286.1	183.5	0.0359	mg/L	0.0359	mg/L	19:18:03
1	Li670-radial†	987.1	-493.6	-0.0022	mg/L	-0.0022	mg/L	19:18:03
1	Na589-radial†	2686.5	43.5	0.0029	mg/L	0.0029	mg/L	19:18:03
2	Sc361-radial	1139521.1	1139521.1	97.47	mg/L			19:18:15
2	K_766-radial†	-310.3	160.3	0.0314	mg/L	0.0314	mg/L	19:18:20
2	Li670-radial†	946.4	-541.0	-0.0024	mg/L	-0.0024	mg/L	19:18:20
2	Na589-radial†	2722.3	65.2	0.0044	mg/L	0.0044	mg/L	19:18:20

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1136417.6	97.20	mg/L	0.375				0.39%
K_766-radial†	171.9	0.0337	mg/L	0.00322	0.0337	mg/L	0.00322	9.56%
Li670-radial†	-517.3	-0.0023	mg/L	0.00015	-0.0023	mg/L	0.00015	6.47%
Na589-radial†	54.4	0.0037	mg/L	0.00103	0.0037	mg/L	0.00103	28.21%

010857

Sequence No.: 48
Sample ID: 591000TF
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 146
Date Collected: 2/8/2016 7:18:33 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.010	500	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.010	500	5.000

Replicate Data: 591000TF

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1142860.6	1142860.6	97.75	mg/L			19:19:46
1	K_766-radial†	715798.5	732717.6	143.5	mg/L	143.5	mg/L	19:19:46
1	Li670-radial†	59636.6	59494.4	0.2618	mg/L	0.2618	mg/L	19:19:52
1	Na589-radial†	822351.6	838511.6	56.44	mg/L	56.44	mg/L	19:19:46
2	Sc361-radial	1141429.0	1141429.0	97.63	mg/L			19:20:26
2	K_766-radial†	714111.0	731907.6	143.4	mg/L	143.4	mg/L	19:20:26
2	Li670-radial†	59388.3	59316.6	0.2610	mg/L	0.2610	mg/L	19:20:32
2	Na589-radial†	820179.9	837342.2	56.36	mg/L	56.36	mg/L	19:20:26

Mean Data: 591000TF

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1142144.8	97.69	mg/L	0.087				0.09%
K_766-radial†	732312.6	143.5	mg/L	0.11	143.5	mg/L	0.11	0.08%
Li670-radial†	59405.5	0.2614	mg/L	0.00055	0.2614	mg/L	0.00055	0.21%
Na589-radial†	837926.9	56.40	mg/L	0.056	56.40	mg/L	0.056	0.10%

010853

Sequence No.: 49
Sample ID: CRI
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 147
Date Collected: 2/8/2016 7:20:44 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.200	25	5.000

Replicate Data: CRI

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Units	Sample Conc.	Units	Analysis Time
1	Sc361-radial	1190865.3	1190865.3	101.9	mg/L			19:21:35
1	K_766-radial†	2327.2	2763.3	0.5413	mg/L	0.5413	mg/L	19:21:40
1	Li670-radial†	3034.3	1466.9	0.0065	mg/L	0.0065	mg/L	19:21:40
1	Na589-radial†	7154.5	4295.9	0.2892	mg/L	0.2892	mg/L	19:21:40
2	Sc361-radial	1189200.4	1189200.4	101.7	mg/L			19:21:53
2	K_766-radial†	2380.6	2819.0	0.5522	mg/L	0.5522	mg/L	19:21:58
2	Li670-radial†	3048.3	1484.9	0.0065	mg/L	0.0065	mg/L	19:21:58
2	Na589-radial†	7155.5	4306.8	0.2899	mg/L	0.2899	mg/L	19:21:58

Mean Data: CRI

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Sc361-radial	1190032.9	101.8	mg/L	0.10				0.10%
K_766-radial†	2791.2	0.5468	mg/L	0.00772	0.5468	mg/L	0.00772	1.41%
Li670-radial†	1475.9	0.0065	mg/L	0.00006	0.0065	mg/L	0.00006	0.86%
Na589-radial†	4301.4	0.2895	mg/L	0.00052	0.2895	mg/L	0.00052	0.18%

010859

Sequence No.: 50
Sample ID: CRI-N
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 148
Date Collected: 2/8/2016 7:22:10 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.020	250	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.200	25	5.000

Replicate Data: CRI-N

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1182424.3	1182424.3	101.1	mg/L			19:23:00
1	K_766-radial†	4591.4	5018.4	0.9831	mg/L	0.9831	mg/L	19:23:05
1	Li670-radial†	5324.9	3753.1	0.0165	mg/L	0.0165	mg/L	19:23:05
1	Na589-radial†	10877.4	8027.1	0.5403	mg/L	0.5403	mg/L	19:23:05
2	Sc361-radial	1187480.5	1187480.5	101.6	mg/L			19:23:16
2	K_766-radial†	4683.9	5090.1	0.9971	mg/L	0.9971	mg/L	19:23:22
2	Li670-radial†	5384.7	3789.5	0.0167	mg/L	0.0167	mg/L	19:23:22
2	Na589-radial†	10999.7	8101.7	0.5453	mg/L	0.5453	mg/L	19:23:22

Mean Data: CRI-N

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1184952.4	101.4	mg/L	0.31				0.30%
K_766-radial†	5054.2	0.9901	mg/L	0.00993	0.9901	mg/L	0.00993	1.00%
Li670-radial†	3771.3	0.0166	mg/L	0.00011	0.0166	mg/L	0.00011	0.68%
Na589-radial†	8064.4	0.5428	mg/L	0.00355	0.5428	mg/L	0.00355	0.65%

010860

Sequence No.: 51
Sample ID: ICSA
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 149
Date Collected: 2/8/2016 7:23:34 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.200	25	5.000

Replicate Data: ICSA

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1070704.2	1070704.2	91.58	mg/L			19:24:39
1	K_766-radial†	-283.8	168.8	0.0331	mg/L	0.0331	mg/L	19:24:45
1	Li670-radial†	1428.2	47.5	0.0002	mg/L	0.0002	mg/L	19:24:45
1	Na589-radial†	3836.8	1461.6	0.0984	mg/L	0.0984	mg/L	19:24:45
2	Sc361-radial	1073574.3	1073574.3	91.83	mg/L			19:25:12
2	K_766-radial†	-199.9	261.0	0.0511	mg/L	0.0511	mg/L	19:25:17
2	Li670-radial†	1461.6	79.8	0.0004	mg/L	0.0004	mg/L	19:25:17
2	Na589-radial†	3846.8	1461.3	0.0984	mg/L	0.0984	mg/L	19:25:17

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1072139.3	91.71	mg/L	0.174				0.19%
K_766-radial†	214.9	0.0421	mg/L	0.01277	0.0421	mg/L	0.01277	30.33%
Li670-radial†	63.6	0.0003	mg/L	0.00010	0.0003	mg/L	0.00010	35.85%
Na589-radial†	1461.5	0.0984	mg/L	0.00002	0.0984	mg/L	0.00002	0.02%

010861

Sequence No.: 52
Sample ID: ICSAB
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 150
Date Collected: 2/8/2016 7:25:30 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.200	25	5.000

Replicate Data: ICSAB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1074738.4	1074738.4	91.93	mg/L			19:26:36
1	K_766-radial†	-392.9	51.3	0.0100	mg/L	0.0100	mg/L	19:26:41
1	Li670-radial†	229890.0	248564.4	1.094	mg/L	1.094	mg/L	19:26:41
1	Na589-radial†	3350.1	916.4	0.0617	mg/L	0.0617	mg/L	19:26:41
2	Sc361-radial	1079322.7	1079322.7	92.32	mg/L			19:27:08
2	K_766-radial†	-334.6	116.2	0.0228	mg/L	0.0228	mg/L	19:27:13
2	Li670-radial†	228433.0	245924.1	1.082	mg/L	1.082	mg/L	19:27:13
2	Na589-radial†	3461.1	1021.2	0.0687	mg/L	0.0687	mg/L	19:27:13

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1077030.6	92.12	mg/L	0.277				0.30%
K_766-radial†	83.7	0.0164	mg/L	0.00900	0.0164	mg/L	0.00900	54.85%
Li670-radial†	247244.3	1.088	mg/L	0.0082	1.088	mg/L	0.0082	0.76%
Na589-radial†	968.8	0.0652	mg/L	0.00499	0.0652	mg/L	0.00499	7.65%

010862

Sequence No.: 53
Sample ID: CCV
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 151
Date Collected: 2/8/2016 7:27:26 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.010	500	5.000
Na589-radial	0.010	500	5.000

Replicate Data: CCV

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1162335.5	1162335.5	99.42	mg/L			19:28:29
1	K_766-radial†	101196.6	102265.1	20.03	mg/L	20.03	mg/L	19:28:35
1	Li670-radial†	1152920.2	1158127.7	5.096	mg/L	5.096	mg/L	19:28:29
1	Na589-radial†	456839.1	456773.8	30.75	mg/L	30.75	mg/L	19:28:29
2	Sc361-radial	1155433.0	1155433.0	98.83	mg/L			19:29:00
2	K_766-radial†	101059.7	102734.6	20.13	mg/L	20.13	mg/L	19:29:06
2	Li670-radial†	1144115.2	1156146.2	5.088	mg/L	5.088	mg/L	19:29:00
2	Na589-radial†	453321.9	455960.1	30.69	mg/L	30.69	mg/L	19:29:00

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1158884.2	99.13	mg/L	0.417				0.42%
K_766-radial†	102499.9	20.08	mg/L	0.065	20.08	mg/L	0.065	0.32%
Li670-radial†	1157137.0	5.092	mg/L	0.0062	5.092	mg/L	0.0062	0.12%
Na589-radial†	456366.9	30.72	mg/L	0.039	30.72	mg/L	0.039	0.13%

010863

Sequence No.: 54
Sample ID: CCB
Analyst: BV
Initial Sample Wt:
Dilution:
Autosampler Location: 152
Date Collected: 2/8/2016 7:29:18 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Auto-Integration Report

Analyte	Integration Time (s)	Number of Integrations	Read Time (s)
Sc361-radial	0.010	500	5.000
K_766-radial	0.200	25	5.000
Li670-radial	0.200	25	5.000
Na589-radial	0.200	25	5.000

Replicate Data: CCB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Sc361-radial	1165914.1	1165914.1	99.73	mg/L			19:30:08
1	K_766-radial†	-353.2	124.5	0.0244	mg/L	0.0244	mg/L	19:30:13
1	Li670-radial†	903.5	-605.9	-0.0027	mg/L	-0.0027	mg/L	19:30:13
1	Na589-radial†	2613.2	-107.4	-0.0072	mg/L	-0.0072	mg/L	19:30:13
2	Sc361-radial	1163709.8	1163709.8	99.54	mg/L			19:30:25
2	K_766-radial†	-377.7	99.2	0.0194	mg/L	0.0194	mg/L	19:30:30
2	Li670-radial†	1093.5	-413.3	-0.0018	mg/L	-0.0018	mg/L	19:30:30
2	Na589-radial†	2665.2	-50.2	-0.0034	mg/L	-0.0034	mg/L	19:30:30

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sc361-radial	1164811.9	99.63	mg/L	0.133				0.13%
K_766-radial†	111.9	0.0219	mg/L	0.00351	0.0219	mg/L	0.00351	16.01%
Li670-radial†	-509.6	-0.0022	mg/L	0.00060	-0.0022	mg/L	0.00060	26.72%
Na589-radial†	-78.8	-0.0053	mg/L	0.00272	-0.0053	mg/L	0.00272	51.33%

010864

Southwest Research Institute

QC STD. ID's		ICP CAL. STD.	
CCV	68318	ID's	
CRI	68555	STD0	68429
ICSA	68624	STD1	68549
ICSAB	68631	STD2	68000
		STD3	68063
UCL1	68553	STD4	67017
UCL2	68195	STD5	67266
NIH CRI	68554	STD6	68550
UCL-Al-500ppm	68064		

- ☐ 200.7 TAP No. 01-0406-028 Rev10/Jun15
- ☑ 6010B TAP No. 01-0406-130 Rev12/Feb16
- ☐ 6010C TAP No. 01-0406-130 Rev12/Feb16
- ☐ SWRI TAP No. 01-0406-148 Rev4/May15
- ☐ OTHER _____

QC Earliest Expiration Date: 4/21/2016

Internal Standard (Sc) @10ppm Added in **Prep lab: YES** (NO)
Internal Standard (Sc) @10ppm Added in **ICP lab**: Inorg# 61567 Exp: 9/22/16 .

IDL run date: **06/02/15**

IEC run date: 07/15/15

PROJ. NO.	PROJECT	TO#	DATE	MATRIX	LOGBOOK PG
13295.14.006	PNNL	160317-4	3/30/16	Water Solution	20160324-P003
21431.01.001	Tetra Tech	160115-1	3/30/16	Soil, Solid	20160127-P004 ✓

INSTRUMENT: TRACE2

FILENAME: B160330

Justin Turner 3/30/16
ANALYST/DATE

Analytical Batch # 20160331-A016

File converted to wsl? ☐

010865

Analysis Report Summary 03/31/16 09:59:54 AM page 1

#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
			Austin Turner 3/31/16					
1	blk	Y16MAR	DAILY2	03/30/16	14:13		X	IR
2	clp_std4	Y16MAR	DAILY2	03/30/16	14:19		X	IR
3	clp_std1	Y16MAR	DAILY2	03/30/16	14:23		X	IR
4	clp_std3	Y16MAR	DAILY2	03/30/16	14:27		X	IR
5	clp_std5	Y16MAR	DAILY2	03/30/16	14:31		X	IR
6	clp_std2	Y16MAR	DAILY2	03/30/16	14:35		X	IR
7	clp_std6	Y16MAR	DAILY2	03/30/16	14:39		X	IR
8	ICV	Y16MAR	DAILY2	03/30/16	14:44		S	CONC
9	ICB	Y16MAR	DAILY2	03/30/16	14:49		S	CONC
10	CRI	Y16MAR	DAILY2	03/30/16	14:54		S	CONC
11	CRI-N	Y16MAR	DAILY2	03/30/16	15:00		S	CONC
12	ICSA	Y16MAR	DAILY2	03/30/16	15:05		S	CONC
13	ICSAB	Y16MAR	DAILY2	03/30/16	15:19		S	CONC
14	UCL1	Y16MAR	DAILY2	03/30/16	15:24		S	CONC
15	UCL-AL-500PPM	Y16MAR	DAILY2	03/30/16	15:29		S	CONC
16	UCL2	Y16MAR	DAILY2	03/30/16	15:34		S	CONC
17	ZZZZ	Y16MAR	DAILY2	03/30/16	15:40		S	CONC
18	CCV	Y16MAR	DAILY2	03/30/16	15:45		S	CONC
19	CCB	Y16MAR	DAILY2	03/30/16	15:50		S	CONC
20	PB16C24KE3	Y16MAR	DAILY2	03/30/16	16:10		S	CONC
21	LCS16C24KE3	Y16MAR	DAILY2	03/30/16	16:15		S	CONC
22	LCS16C24KE4	Y16MAR	DAILY2	03/30/16	16:20		S	CONC
23	594179	Y16MAR	DAILY2	03/30/16	16:26		S	CONC
24	594180	Y16MAR	DAILY2	03/30/16	16:31		S	CONC
25	594181	Y16MAR	DAILY2	03/30/16	16:36		S	CONC
26	594181D	Y16MAR	DAILY2	03/30/16	16:41		S	CONC
27	594181L DF5	Y16MAR	DAILY2	03/30/16	16:46		S	CONC
28	594181MS3	Y16MAR	DAILY2	03/30/16	16:51		S	CONC
29	594181MS4	Y16MAR	DAILY2	03/30/16	16:56		S	CONC
30	CCV	Y16MAR	DAILY2	03/30/16	17:01		S	CONC
31	CCB	Y16MAR	DAILY2	03/30/16	17:07		S	CONC
32	594181AS(1)	Y16MAR	DAILY2	03/30/16	17:12		S	CONC
33	594182	Y16MAR	DAILY2	03/30/16	17:17		S	CONC
34	594183	Y16MAR	DAILY2	03/30/16	17:22		S	CONC
35	594184	Y16MAR	DAILY2	03/30/16	17:27		S	CONC
36	ZZZZ	Y16MAR	DAILY2	03/30/16	17:32		S	CONC
37	CRI	Y16MAR	DAILY2	03/30/16	17:37		S	CONC
38	CRI-N	Y16MAR	DAILY2	03/30/16	17:42		S	CONC
39	ICSA	Y16MAR	DAILY2	03/30/16	17:47		S	CONC
40	ICSAB	Y16MAR	DAILY2	03/30/16	17:53		S	CONC
41	CCV	Y16MAR	DAILY2	03/30/16	17:58		S	CONC
42	CCB	Y16MAR	DAILY2	03/30/16	18:03		S	CONC
43	PB16A27KE2 DF100	Y16MAR	DAILY2	03/30/16	18:14		S	CONC
44	LCS16A27KE3 DF100	Y16MAR	DAILY2	03/30/16	18:19		S	CONC
45	LCS16A27KE4 DF100	Y16MAR	DAILY2	03/30/16	18:24		S	CONC
46	588049F DF100	Y16MAR	DAILY2	03/30/16	18:29		S	CONC
47	588556F DF100	Y16MAR	DAILY2	03/30/16	18:34		S	CONC
48	588556FD DF100	Y16MAR	DAILY2	03/30/16	18:39		S	CONC
49	588556FL DF500	Y16MAR	DAILY2	03/30/16	18:44		S	CONC
50	588556FAS DF100(2)	Y16MAR	DAILY2	03/30/16	18:49		S	CONC
51	590212F DF100	Y16MAR	DAILY2	03/30/16	18:55		S	CONC
52	590213F DF100	Y16MAR	DAILY2	03/30/16	19:00		S	CONC
53	CCV	Y16MAR	DAILY2	03/30/16	19:05		S	CONC

Analysis Report Summary 03/31/16 09:59:54 AM page 2

#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
54	CCB	Y16MAR	DAILY2	03/30/16	19:10		S	CONC
55	CCV	Y16MAR	DAILY2	03/31/16	08:46		S	CONC
56	CCB	Y16MAR	DAILY2	03/31/16	08:51		S	CONC
57	590214F DF100	Y16MAR	DAILY2	03/31/16	08:56		S	CONC
58	591000F DF100	Y16MAR	DAILY2	03/31/16	09:01		S	CONC
59	ZZZZ	Y16MAR	DAILY2	03/31/16	09:06		S	CONC
60	CRI	Y16MAR	DAILY2	03/31/16	09:11		S	CONC
61	CRI-N	Y16MAR	DAILY2	03/31/16	09:16		S	CONC
62	ICSA	Y16MAR	DAILY2	03/31/16	09:21		S	CONC
63	ICSAB	Y16MAR	DAILY2	03/31/16	09:27		S	CONC
64	CCV	Y16MAR	DAILY2	03/31/16	09:32		S	CONC
65	CCB	Y16MAR	DAILY2	03/31/16	09:37		S	CONC

3/30/16 Plasma shut off ~19:15 Run was resumed with CCV and CCB ~8:45 3/31/16 JT 3/31/16

(1) Sample Spiked with 50 µL Spike Std. 1 60136
20 µL ICAL 1 58932
B: 65741
Li 60840
P 67249
Sr 65054
S 61669
Zr 60330

JT 3/31/16

(2) Sample Spiked with 50 µL Spike Std 1 60136
20 µL ICAL 1 58932
Si 60841

010867

Standardization Rpt. 03/30/16 02:18:51 PM page 1

Method: DAILY2 Standard: blk Justin Sumner 3/31/16
Run Time: 03/30/16 14:13:48

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Avge	-.0000	.0003	.0000	.0000	.0000	.0003	.0000
SDev	.0000	.0000	.0000	.0000	.0000	.0000	.0000
%RSD	58.36	2.219	15.14	3.873	37.25	1.475	97.99
#1	-.0000	.0003	.0000	.0000	.0000	.0003	.0000
#2	-.0000	.0003	.0000	.0000	.0000	.0003	.0000

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Avge	.0000	-.0000	-.0000	-.0000	.0002	-.0000	-.0000
SDev	.0000	.0000	.0000	.0000	.0000	.0000	.0000
%RSD	14.28	154.9	70.60	110.1	2.662	238.1	667.0
#1	.0000	.0000	-.0000	-.0000	.0002	-.0000	-.0000
#2	.0000	-.0000	-.0000	-.0000	.0002	.0000	.0000

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Avge	-.0001	.0000	-.0000	.0000	-.0000	-.0002	-.0295
SDev	.0000	.0000	.0000	.0000	.0000	.0001	.0004
%RSD	35.50	107.6	15.19	6.299	141.4	32.40	1.430
#1	-.0001	.0000	-.0000	.0000	-.0000	-.0002	-.0298
#2	-.0001	.0000	-.0000	.0000	.0000	-.0001	-.0292

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Avge	.0000	.0000	.0000	.0001	-.0000	-.0010	167.9
SDev	.0000	.0000	.0000	.0000	.0000	.0000	.3
%RSD	63.52	88.22	1180.	15.33	72.55	2.361	.1562
#1	.0000	.0000	-.0000	.0001	-.0000	-.0010	167.7
#2	.0000	.0000	.0000	.0001	-.0000	-.0010	168.1

Elem	1960/1	1960/2	Si2881	Sn1899	Sr4215	Th2837	Ti3349
Avge	-.0000	.0000	.0008	.0000	-.0000	.0000	.0000
SDev	.0001	.0000	.0000	.0000	.0000	.0000	.0000
%RSD	1023.	64.02	.4077	115.0	24.53	53.77	127.7
#1	.0001	.0001	.0008	.0000	-.0000	.0000	.0000
#2	-.0001	.0000	.0008	.0000	-.0000	.0000	.0000

Elem	Tl1908	U_4090	V_2924	W_2079	Y_3710	Zn2062	Zr3496
Avge	.0000	-.0006	-.0000	.0001	.0000	.0000	.0002
SDev	.0000	.0002	.0000	.0000	.0000	.0000	.0001
%RSD	47.27	39.13	24.66	21.39	57.04	3.298	32.52
#1	.0000	-.0007	-.0000	.0002	.0000	.0000	.0002
#2	.0000	-.0004	-.0000	.0001	.0000	.0000	.0003

4/19/16

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1678974	10000	--	--	--	--	--
SDev	2535.685	.0000000	--	--	--	--	--
%RSD	.1510259	.0000000	--	--	--	--	--
#1	1677181	10000	--	--	--	--	--
#2	1680767	10000	--	--	--	--	--

010869

Standardization Rpt. 03/30/16 02:23:05 PM page 1

Method: DAILY2 Standard: clp_std4
Run Time: 03/30/16 14:19:06

Elem	Ag3280	2203/1	2203/2	Sb2068	1960/1	1960/2	Tl1908
Avge	.0703	.2138	.2190	.0653	.0865	.0863	.0799
SDev	.0001	.0003	.0003	.0000	.0001	.0006	.0001
%RSD	.0724	.1247	.1420	.0294	.1189	.6854	.1560
#1	.0703	.2136	.2192	.0653	.0864	.0859	.0798
#2	.0703	.2140	.2188	.0653	.0866	.0867	.0799

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1670311	10000	--	--	--	--	--
SDev	3770.294	.0000000	--	--	--	--	--
%RSD	.2257240	.0000000	--	--	--	--	--
#1	1667645	10000	--	--	--	--	--
#2	1672977	10000	--	--	--	--	--

010870

Standardization Rpt. 03/30/16 02:27:18 PM page 1

Method: DAILY2 Standard: clp_std1
Run Time: 03/30/16 14:23:19

Elem	Al3082	Ca3179	Fe2714	K_7664	Li6707	Mg2790	Na3302
Avge	.0851	.2584	.0929	.2159	4.378	.1115	.0100
SDev	.0001	.0007	.0003	.0004	.004	.0001	.0001
%RSD	.1362	.2721	.2669	.1882	.0978	.0996	1.439
#1	.0852	.2589	.0931	.2156	4.375	.1116	.0099
#2	.0850	.2579	.0928	.2162	4.381	.1114	.0101

Elem	Na5889
Avge	5.344
SDev	.001
%RSD	.0209
#1	5.344
#2	5.343

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1606796	10000	--	--	--	--	--
SDev	3630.286	.0000000	--	--	--	--	--
%RSD	.2259332	.0000000	--	--	--	--	--
#1	1609363	10000	--	--	--	--	--
#2	1604229	10000	--	--	--	--	--

Standardization Rpt. 03/30/16 02:31:11 PM page 1

Method: DAILY2 Standard: clp_std3
Run Time: 03/30/16 14:27:33

Elem	As1890	Cd2265	Co2286	Mn2576	V_2924	Zn2062
Avge	.0398	.8287	.1440	.6803	.1701	.2232
SDev	.0000	.0026	.0001	.0006	.0001	.0002
%RSD	.0278	.3143	.0542	.0945	.0364	.1064
#1	.0398	.8305	.1440	.6807	.1700	.2233
#2	.0398	.8269	.1439	.6798	.1701	.2230

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1681764	10000	--	--	--	--	--
SDev	2252.135	.0000000	--	--	--	--	--
%RSD	.1339150	.0000000	--	--	--	--	--
#1	1680172	10000	--	--	--	--	--
#2	1683357	10000	--	--	--	--	--

Standardization Rpt. 03/30/16 02:35:25 PM page 1

Method: DAILY2 Standard: clp_std5
Run Time: 03/30/16 14:31:26

Elem	B_2496	Bi2230	Mo2020	Si2881	Sn1899	Sr4215	Ti3349
Avge	.1153	.0172	.1665	.1465	.0828	2.206	2.658
SDev	.0006	.0000	.0003	.0002	.0001	.001	.000
%RSD	.5453	.1616	.1711	.1087	.1622	.0302	.0074
#1	.1148	.0172	.1667	.1467	.0827	2.205	2.658
#2	.1157	.0172	.1663	.1464	.0829	2.206	2.658

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1680676	10000	--	--	--	--	--
SDev	1111.572	.0000000	--	--	--	--	--
%RSD	.0661384	.0000000	--	--	--	--	--
#1	1681462	10000	--	--	--	--	--
#2	1679890	10000	--	--	--	--	--

010873

Standardization Rpt. 03/30/16 02:39:17 PM page 1

Method: DAILY2 Standard: clp_std2
Run Time: 03/30/16 14:35:40

Elem	Ba4934	Be3130	Cr2677	Cu3247	Ni2316
Avge	1.058	.3403	.4040	.2453	.2576
SDev	.000	.0001	.0003	.0004	.0003
%RSD	.0073	.0445	.0834	.1638	.1038
#1	1.058	.3402	.4042	.2456	.2578
#2	1.058	.3404	.4038	.2450	.2574

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1658864	10000	--	--	--	--	--
SDev	1648.266	.0000000	--	--	--	--	--
%RSD	.0993611	.0000000	--	--	--	--	--
#1	1657698	10000	--	--	--	--	--
#2	1660029	10000	--	--	--	--	--

Standardization Rpt. 03/30/16 02:43:53 PM page 1

Method: DAILY2 Standard: clp_std6
Run Time: 03/30/16 14:39:32

Elem	La3988	Pd3404	S_1820	Th2837	U_4090	W_2079	Y_3710
Avge	.4089	.2008	.0019	.0948	.0620	.0835	.6393
SDev	.0001	.0009	.0000	.0001	.0004	.0004	.0020
%RSD	.0260	.4628	.2688	.1440	.7267	.4251	.3148
#1	.4089	.2002	.0020	.0949	.0617	.0838	.6407
#2	.4088	.2015	.0019	.0947	.0624	.0833	.6379

Elem	Zr3496
Avge	2.024
SDev	.009
%RSD	.4403
#1	2.018
#2	2.030

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1677200	10000	--	--	--	--	--
SDev	210.0107	.0000000	--	--	--	--	--
%RSD	.0125215	.0000000	--	--	--	--	--
#1	1677348	10000	--	--	--	--	--
#2	1677051	10000	--	--	--	--	--

010875

Standardization Readback Report 03/30/16 02:43:53 PM page 1

Method: DAILY2

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Ag3280	328.068	blk	.000000	.000000	-.000000
		clp_std4	2.00000	2.00000	.000000
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Al3082	308.215	blk	.000000	-.000000	.000000
		clp_std1	50.0000	50.0000	.000000
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
As1890	189.042	blk	.000000	.000000	-.000000
		clp_std3	10.0000	10.0002	-.000164
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
B_2496	249.678	blk	.000000	-.000000	.000000
		clp_std5	10.0000	9.99887	.001130
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Ba4934	493.409	blk	.000000	.000000	-.000000
		clp_std2	10.0000	10.0000	.000000
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Be3130	313.042	blk	.000000	.000000	-.000000
		clp_std2	1.00000	1.000000	.000000
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Bi2230	223.061	blk	.000000	.000000	-.000000
		clp_std5	5.00000	4.95974	.040256
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Ca3179	317.933	blk	.000000	.000000	-.000000
		clp_std1	50.0000	50.0000	.000000
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Cd2265	226.502	blk	.000000	-.000000	.000000
		clp_std3	10.0000	9.99710	.002900
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Co2286	228.616	blk	.000000	-.000000	.000000
		clp_std3	10.0000	10.0003	-.000299
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Cr2677	267.716	blk	.000000	-.000000	.000000
		clp_std2	10.0000	10.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Cu3247	324.753	blk	.000000	.000000	-.000000
		clp_std2	10.0000	10.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Fe2714	271.441	blk	.000000	.000000	-.000000
		clp_std1	50.0000	50.0000	.000004

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
K_7664	766.491	blk	.000000	.000000	-.000000
		clp_std1	50.0000	50.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
La3988	398.853	blk	.000000	.000000	-.000000
		clp_std6	10.0000	10.0059	-.005869

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Li6707	670.784	blk	.000000	.000000	-.000000
		clp_std1	10.0000	10.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Mg2790	279.078	blk	.000000	-.000000	.000000
		clp_std1	25.0000	24.9893	.010700

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Mn2576	257.610	blk	.000000	-.000000	.000000
		clp_std3	10.0000	9.99911	.000890

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Mo2020	202.030	blk	.000000	.000000	-.000000
		clp_std5	10.0000	10.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Na3302	330.232	blk	.000000	.000000	-.000000
		clp_std1	50.0000	49.9482	.051804

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Na5889	588.991	blk	.000000	-.000000	.000000
		clp_std1	50.0000	49.9955	.004456

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Ni2316	231.604	blk	.000000	.000000	-.000000
		clp_std2	10.0000	10.0000	.000000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
2203/1	220.353	blk	.000000	-.000000	.000000
		clp_std4	10.0000	10.0000	.000000
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
2203/2	220.354	blk	.000000	.000000	-.000000
		clp_std4	10.0000	9.99190	.008100
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Pd3404	340.458	blk	.000000	.000000	-.000000
		clp_std6	10.0000	10.2320	-.231961
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
S_1820	182.040	blk	.000000	-.000000	.000000
		clp_std6	10.0000	10.0070	-.007010
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Sb2068	206.838	blk	.000000	-.000000	.000000
		clp_std4	10.0000	10.0000	.000000
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Sc3613	361.384	dark	.000000	-.000000	.000000
		blk	100.000	100.0000	.000008
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
1960/1	196.026	blk	.000000	-.000000	.000000
		clp_std4	10.0000	10.0000	.000000
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
1960/2	196.027	blk	.000000	.000000	-.000000
		clp_std4	10.0000	10.0000	.000000
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Si2881	288.158	blk	.000000	.000000	-.000000
		clp_std5	10.0000	9.97467	.025331
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Pb220	220.355	NONE	.000000	.000000	.000000
		NONE	.000000	.000000	.000000
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Se196	196.028	STD1-Blank	.000000	.000000	.000000
		STD7	10.0000	.000000	10.0000

Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Sn1899	189.989	blk	.000000	.000000	-.000000
		clp_std5	10.0000	10.0221	-.022082
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Sr4215	421.552	blk	.000000	-.000000	.000000
		clp_std5	10.0000	10.0000	.000000
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Th2837	283.730	blk	.000000	.000000	-.000000
		clp_std6	10.0000	10.4397	-.439739
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Ti3349	334.941	blk	.000000	.000000	-.000000
		clp_std5	10.0000	10.0000	.000000
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Tl1908	190.864	blk	.000000	-.000000	.000000
		clp_std4	10.0000	9.99862	.001380
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
U_4090	409.014	blk	.000000	.000000	-.000000
		clp_std6	10.0000	10.9555	-.955464
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
V_2924	292.402	blk	.000000	-.000000	.000000
		clp_std3	10.0000	9.99981	.000190
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
W_2079	207.914	blk	.000000	-.000000	.000000
		clp_std6	5.00000	4.99842	.001580
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Y_3710	371.030	blk	.000000	.000000	-.000000
		clp_std6	10.0000	9.99947	.000530
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Zn2062	206.200	blk	.000000	.000000	-.000000
		clp_std3	10.0000	10.0005	-.000463
Element	Wavelength	Standard	Known Concentration	Measured Concentration	Residual Concentration
Zr3496	349.621	blk	.000000	.000000	-.000000
		clp_std6	10.0000	10.6595	-.659513

010879

Standardization Report 03/30/16 02:43:53 PM page 1

Method: DAILY2 Slope = Conc(SIR)/IR

Element	Wavelen	High std	Low std	Slope	Y-intercept	Date Standardized
Ag3280	328.068	clp_std4	blk	28.4512	.000144	03/30/16 02:39:32
Al3082	308.215	clp_std1	blk	589.940	-.188682	03/30/16 02:39:32
As1890	189.042	clp_std3	blk	251.594	-.005544	03/30/16 02:39:32
B_2496	249.678	clp_std5	blk	86.7514	-.001963	03/30/16 02:39:32
Ba4934	493.409	clp_std2	blk	9.45205	-.000245	03/30/16 02:39:32
Be3130	313.042	clp_std2	blk	2.94072	-.000838	03/30/16 02:39:32
Bi2230	223.061	clp_std5	blk	288.698	-.004474	03/30/16 02:39:32
Ca3179	317.933	clp_std1	blk	193.523	-.002824	03/30/16 02:39:32
Cd2265	226.502	clp_std3	blk	12.0634	.000075	03/30/16 02:39:32
Co2286	228.616	clp_std3	blk	69.4659	.000165	03/30/16 02:39:32
Cr2677	267.716	clp_std2	blk	24.7505	.000598	03/30/16 02:39:32
Cu3247	324.753	clp_std2	blk	40.7924	-.006718	03/30/16 02:39:32
Fe2714	271.441	clp_std1	blk	537.887	.005617	03/30/16 02:39:32
K_7664	766.491	clp_std1	blk	231.547	.001594	03/30/16 02:39:32
La3988	398.853	clp_std6	blk	24.4679	.001924	03/30/16 02:39:32
Li6707	670.784	clp_std1	blk	2.28421	-.000046	03/30/16 02:39:32
Mg2790	279.078	clp_std1	blk	224.039	.003136	03/30/16 02:39:32
Mn2576	257.610	clp_std3	blk	14.6985	-.000101	03/30/16 02:39:32
Mo2020	202.030	clp_std5	blk	60.0503	.000448	03/30/16 02:39:32
Na3302	330.232	clp_std1	blk	4896.87	.914573	03/30/16 02:39:32
Na5889	588.991	clp_std1	blk	9.30466	.274822	03/30/16 02:39:32
Ni2316	231.604	clp_std2	blk	38.8172	-.000462	03/30/16 02:39:32
2203/1	220.353	clp_std4	blk	46.7688	-.000962	03/30/16 02:39:32
2203/2	220.354	clp_std4	blk	45.6278	-.000148	03/30/16 02:39:32
Pd3404	340.458	clp_std6	blk	50.9815	-.006225	03/30/16 02:39:32
S_1820	182.040	clp_std6	blk	5104.56	.062360	03/30/16 02:39:32
Sb2068	206.838	clp_std4	blk	150.809	.149147	03/30/16 02:39:32
Sc3613	361.384	blk	dark	.596024	-.075486	03/30/16 02:39:32
1960/1	196.026	clp_std4	blk	115.605	.001127	03/30/16 02:39:32
1960/2	196.027	clp_std4	blk	115.947	-.004664	03/30/16 02:39:32
Si2881	288.158	clp_std5	blk	68.4514	-.056161	03/30/16 02:39:32
Pb220	220.355	NONE	NONE	1.00000	.000000	*NOT STANDARDIZED
Se196	196.028	STD7	STD1-Blank	1.00000	.000000	*NOT STANDARDIZED
Sn1899	189.989	clp_std5	blk	121.114	-.002310	03/30/16 02:39:32
Sr4215	421.552	clp_std5	blk	4.53398	.000039	03/30/16 02:39:32
Th2837	283.730	clp_std6	blk	110.147	-.002855	03/30/16 02:39:32
Ti3349	334.941	clp_std5	blk	3.76254	-.000069	03/30/16 02:39:32
Tl1908	190.864	clp_std4	blk	125.217	-.000671	03/30/16 02:39:32
U_4090	409.014	clp_std6	blk	174.914	.102438	03/30/16 02:39:32
V_2924	292.402	clp_std3	blk	58.7881	.001313	03/30/16 02:39:32
W_2079	207.914	clp_std6	blk	59.9480	-.008321	03/30/16 02:39:32
Y_3710	371.030	clp_std6	blk	15.6413	-.000219	03/30/16 02:39:32
Zn2062	206.200	clp_std3	blk	44.8133	-.000547	03/30/16 02:39:32
Zr3496	349.621	clp_std6	blk	5.26682	-.001297	03/30/16 02:39:32

010880

Analysis Report 03/30/16 02:49:11 PM page 1

Method: DAILY2 Sample Name: ICV Operator:
Run Time: 03/30/16 14:44:07
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.034	10.12	5.258	5.223	9.942	1.012	4.973
SDev	.001	.02	.008	.045	.002	.001	.005
%RSD	.0569	.1738	.1454	.8538	.0162	.0705	.0925
#1	1.034	10.11	5.253	5.191	9.943	1.012	4.976
#2	1.035	10.13	5.263	5.255	9.941	1.013	4.969
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.100	11.00	5.500	5.500	11.00	1.100	5.500
Low	.9000	9.000	4.500	4.500	9.000	.9000	4.500

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.46	1.022	5.044	1.948	1.983	10.08	19.44
SDev	.04	.001	.006	.003	.001	.04	.06
%RSD	.2094	.0994	.1119	.1739	.0494	.4119	.3284
#1	20.43	1.021	5.040	1.946	1.982	10.05	19.39
#2	20.49	1.022	5.048	1.950	1.983	10.10	19.48
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.00	1.100	5.500	2.200	2.200	11.00	22.00
Low	18.00	.9000	4.500	1.800	1.800	9.000	18.00

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.035	5.180	20.34	1.020	4.918	29.13	29.58
SDev	.010	.007	.03	.001	.004	.47	.00
%RSD	.2029	.1438	.1626	.0889	.0849	1.607	.0043
#1	5.027	5.174	20.32	1.019	4.921	28.80	29.58
#2	5.042	5.185	20.36	1.021	4.915	29.46	29.58
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.500	5.500	22.00	1.100	5.500	33.00	33.00
Low	4.500	4.500	18.00	.9000	4.500	27.00	27.00

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	4.915	5.030	5.032	.9689	H1.104	1.028	96.96
SDev	.003	.021	.019	.0055	.086	.006	.46
%RSD	.0705	.4080	.3835	.5712	7.795	.6236	.4694
#1	4.913	5.015	5.018	.9650	H1.165	1.023	97.28
#2	4.918	5.044	5.045	.9728	1.043	1.032	96.64
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC High	LC Pass	NOCHECK
High	5.500			1.100	1.100	1.100	
Low	4.500			.9000	.9000	.9000	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.200	5.236	4.984	5.026	5.219	5.040	5.133
SDev	.005	.039	.013	.020	.028	.008	.003
%RSD	.1019	.7519	.2613	.3916	.5362	.1490	.0560
#1	5.197	5.208	4.974	5.012	5.199	5.035	5.135
#2	5.204	5.264	4.993	5.040	5.239	5.045	5.131
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			5.500	5.500	5.500	5.500	5.500
Low			4.500	4.500	4.500	4.500	4.500

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.000	4.904	5.181	4.979	5.059	1.032	5.042
SDev	.004	.001	.006	.097	.006	.002	.001
%RSD	.3959	.0274	.1204	1.945	.1213	.2254	.0098
#1	1.003	4.904	5.177	4.910	5.054	1.033	5.042
#2	.9975	4.905	5.185	5.047	5.063	1.030	5.043
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.100	5.500	5.500	5.500	5.500	1.100	5.500
Low	.9000	4.500	4.500	4.500	4.500	.9000	4.500

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	1.043	4.857
SDev	.001	.019
%RSD	.0525	.3857
#1	1.043	4.843
#2	1.042	4.870
Errors	LC Pass	LC Pass
High	1.100	5.500
Low	.9000	4.500

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1627926	10000	--	--	--	--	--
SDev	7763.325	.0000000	--	--	--	--	--
%RSD	.4768843	.0000000	--	--	--	--	--
#1	1633416	10000	--	--	--	--	--
#2	1622437	10000	--	--	--	--	--

Analysis Report 03/30/16 02:54:29 PM

Method: DAILY2 Sample Name: ICB Operator:
Run Time: 03/30/16 14:49:25
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0008	-.0009	.0006	H.0520	.0007	.0001	.0016
SDev	.0005	.0009	.0039	.0069	.0001	.0001	.0001
%RSD	56.99	101.7	692.6	13.18	21.78	117.5	8.593
#1	.0012	-.0015	.0033	H.0569	.0006	.0000	.0017
#2	.0005	-.0002	-.0022	.0472	.0008	.0001	.0015
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass
High	.0050	.0500	.0050	.0500	.0050	.0050	.0100
Low	-.0050	-.0500	-.0050	-.0500	-.0050	-.0050	-.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0022	.0003	.0009	.0007	.0002	.0152	.0093
SDev	.0015	.0000	.0000	.0028	.0012	.0386	.0584
%RSD	66.71	10.09	1.350	398.5	570.7	253.5	625.7
#1	.0033	.0003	.0009	-.0013	-.0006	-.0121	-.0319
#2	.0012	.0003	.0009	.0027	.0010	.0426	.0506
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0500	.0050	.0050	.0050	.0050	.0500	.1000
Low	-.0500	-.0050	-.0050	-.0050	-.0050	-.0500	-.1000

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0017	.0004	.0032	.0004	.0016	H.1582	-.0013
SDev	.0053	.0001	.0080	.0001	.0001	.6401	.0141
%RSD	309.6	40.78	248.1	25.76	7.847	404.7	1101.
#1	-.0020	.0003	.0088	.0004	.0017	L-.2944	-.0112
#2	H.0055	.0005	-.0024	.0005	.0015	H.6107	.0087
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	.0050	.0050	.0500	.0050	.0050	.0500	.0500
Low	-.0050	-.0050	-.0500	-.0050	-.0050	-.0500	-.0500

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0002	.0021	-.0013	.0011	H.0212	-.0024	99.61
SDev	.0000	.0010	.0009	.0052	.0105	.0014	.41
%RSD	20.28	49.97	74.84	467.1	49.77	58.37	.4152
#1	.0002	.0014	-.0006	.0048	.0137	-.0033	99.90
#2	.0002	.0028	-.0019	-.0026	H.0286	-.0014	99.32
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC High	LC Pass	NOCHECK
High	.0050			.0050	.0200	.0100	
Low	-.0050			-.0050	-.0200	-.0100	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0026	-.0007	.0023	-.0001	.0004	H.0105	.0004
SDev	.0041	.0024	.0007	.0003	.0003	.0035	.0001
%RSD	157.6	360.6	31.31	216.8	57.73	33.24	21.37
#1	.0055	-.0024	.0028	.0001	.0003	H.0130	.0005
#2	-.0003	.0010	.0018	-.0003	.0006	.0081	.0003
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High			.0100	.0050	.0050	.0100	.0050
Low			-.0100	-.0050	-.0050	-.0100	-.0050

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0028	.0004	-.0003	.0438	.0005	.0010	.0004
SDev	.0024	.0003	.0016	.1342	.0008	.0039	.0002
%RSD	84.79	76.42	494.0	306.3	158.0	400.8	48.61
#1	.0011	.0002	.0008	-.0511	-.0001	.0038	.0003
#2	.0045	.0006	-.0014	H.1387	.0010	-.0018	.0005
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0100	.0050	.0100	.1000	.0050	.0100	.0050
Low	-.0100	-.0050	-.0100	-.1000	-.0050	-.0100	-.0050

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0001	.0008
SDev	.0002	.0016
%RSD	162.0	205.5
#1	-.0000	-.0004
#2	.0003	.0020
Errors	LC Pass	LC Pass
High	.0050	.0050
Low	-.0050	-.0050

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1672461	10000	--	--	--	--	--
SDev	6965.002	.0000000	--	--	--	--	--
%RSD	.4164523	.0000000	--	--	--	--	--
#1	1677386	10000	--	--	--	--	--
#2	1667536	10000	--	--	--	--	--

010886

Analysis Report 03/30/16 02:59:47 PM page 1

Method: DAILY2 Sample Name: CRI Operator:
Run Time: 03/30/16 14:54:43
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0111	.1007	.0116	H.0650	.0054	.0050	.0141
SDev	.0006	.0018	.0023	.0011	.0001	.0000	.0080
%RSD	5.822	1.744	20.03	1.718	1.074	.6277	57.28
#1	.0107	.0995	.0100	H.0658	.0054	.0050	.0197
#2	.0116	.1020	.0133	H.0642	.0053	.0050	L.0084
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass
High	.0150	.1500	.0150	.0600	.0075	.0075	.0300
Low	.0050	.0500	.0050	.0200	.0025	.0025	.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1071	.0051	.0050	.0053	.0048	.0960	.3048
SDev	.0006	.0000	.0007	.0013	.0002	.0246	.0256
%RSD	.5310	.8066	13.87	25.01	4.703	25.62	8.411
#1	.1067	.0051	.0045	.0043	.0050	.0786	.2867
#2	.1075	.0050	.0055	.0062	.0046	.1134	.3229
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.1500	.0075	.0075	.0075	.0075	.1500	.7500
Low	.0500	.0025	.0025	.0025	.0025	.0500	.2500

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0109	.0082	.0529	.0054	.0055	.3784	.1894
SDev	.0026	.0001	.0011	.0000	.0011	.2415	.0071
%RSD	24.03	1.388	2.099	.6386	19.90	63.84	3.756
#1	.0091	.0081	.0521	.0054	.0047	.2076	.1843
#2	.0128	.0083	.0537	.0054	.0063	H.5492	.1944
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0150	.0150	.1000	.0075	.0075	.5000	.5000
Low	.0050	.0050	.0250	.0025	.0025	.1250	.1250

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0054	.0095	.0035	.0152	.0746	.0263	98.57
SDev	.0006	.0049	.0003	.0022	.0174	.0017	.33
%RSD	10.51	51.61	8.100	14.17	23.38	6.428	.3322
#1	.0058	.0060	.0037	.0137	.0623	.0251	98.80
#2	.0050	.0130	.0033	.0167	H.0869	.0274	98.33
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	.0075			.0300	.0750	.0300	
Low	.0025			.0100	.0250	.0100	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0169	.0065	.1009	.0055	.0099	.0133	.0056
SDev	.0012	.0032	.0046	.0014	.0018	.0005	.0000
%RSD	7.044	50.20	4.525	26.25	17.76	3.961	.2246
#1	.0160	.0087	.0977	.0045	.0112	.0137	.0056
#2	.0177	.0042	.1042	.0065	.0087	.0130	.0056
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			.1500	.0075	.0150	.0150	.0075
Low			.0500	.0025	.0050	.0050	.0025

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0204	.0049	.0177	.1993	.0051	.0213	.0055
SDev	.0045	.0000	.0030	.0751	.0003	.0007	.0001
%RSD	22.03	.1498	16.83	37.67	5.818	3.163	.9253
#1	.0236	.0049	.0156	.1462	.0049	.0208	.0055
#2	.0172	.0049	.0198	.2523	.0053	.0217	.0055
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0300	.0075	.0300	.3000	.0075	.0300	.0075
Low	.0100	.0025	.0100	.1000	.0025	.0100	.0025

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0054	.0043
SDev	.0000	.0008
%RSD	.1269	17.60
#1	.0054	.0038
#2	.0054	.0048
Errors	LC Pass	LC Pass
High	.0075	.0075
Low	.0025	.0025

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1654782	10000	--	--	--	--	--
SDev	5456.036	.0000000	--	--	--	--	--
%RSD	.3297133	.0000000	--	--	--	--	--
#1	1658640	10000	--	--	--	--	--
#2	1650924	10000	--	--	--	--	--

010889

Analysis Report 03/30/16 03:05:05 PM page 1

Method: DAILY2 Sample Name: CRI-N Operator:
Run Time: 03/30/16 15:00:01
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0221	.2170	.0216	.0983	.0109	.0101	.0429
SDev	.0003	.0048	.0003	.0018	.0002	.0000	.0009
%RSD	1.282	2.218	1.403	1.792	1.576	.2981	2.038
#1	.0223	.2136	.0218	.0970	.0110	.0101	.0423
#2	.0219	.2204	.0214	.0995	.0107	.0101	.0435
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0260	.2600	.0260	.1040	.0130	.0130	.0520
Low	.0140	.1400	.0140	.0560	.0070	.0070	.0280

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2126	.0107	.0109	.0106	.0094	.2289	L.6447
SDev	.0011	.0000	.0003	.0025	.0007	.0307	.0311
%RSD	.4980	.0823	3.240	23.83	7.304	13.42	4.821
#1	.2118	.0107	.0111	.0088	.0099	.2071	L.6228
#2	.2133	.0106	.0106	.0123	.0089	.2506	L.6667
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low
High	.2600	.0130	.0130	.0130	.0130	.2600	1.300
Low	.1400	.0070	.0070	.0070	.0070	.1400	.7000

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0221	.0169	.1078	.0106	.0109	H.6854	.3986
SDev	.0031	.0001	.0014	.0001	.0003	.4842	.0102
%RSD	14.22	.6386	1.313	1.059	2.733	70.65	2.559
#1	.0199	.0168	.1068	.0107	.0107	L.3430	.3914
#2	.0243	.0169	.1088	.0105	.0111	H1.028	.4058
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	.0260	.0260	.1300	.0130	.0130	.6500	.6500
Low	.0140	.0140	.0700	.0070	.0070	.3500	.3500

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0098	.0114	.0108	.0440	.0978	.0401	97.92
SDev	.0005	.0001	.0009	.0039	.0022	.0056	.17
%RSD	5.013	.5953	8.468	8.776	2.235	14.10	.1707
#1	.0095	.0114	.0101	.0413	.0962	.0361	98.04
#2	.0102	.0115	.0114	.0467	.0993	.0441	97.80
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	.0130			.0520	.1300	.0520	
Low	.0070			.0280	.0700	.0280	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0256	.0180	.2076	.0110	.0205	.0197	.0110
SDev	.0046	.0020	.0024	.0006	.0029	.0001	.0000
%RSD	17.96	11.24	1.139	5.735	14.02	.6756	.1891
#1	.0223	.0166	.2059	.0105	.0185	.0198	.0110
#2	.0288	.0194	.2093	.0114	.0225	.0196	.0109
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			.2600	.0130	.0260	.0260	.0130
Low			.1400	.0070	.0140	.0140	.0070

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0381	.0095	.0390	.4489	.0098	.0439	.0103
SDev	.0030	.0001	.0048	.0996	.0004	.0018	.0002
%RSD	7.878	.5016	12.41	22.19	3.951	4.177	2.134
#1	.0403	.0095	.0356	.3785	.0101	.0426	.0104
#2	.0360	.0095	.0424	.5194	.0095	.0452	.0101
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0520	.0130	.0520	.5200	.0130	.0520	.0130
Low	.0280	.0070	.0280	.2800	.0070	.0280	.0070

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0107	.0108
SDev	.0001	.0019
%RSD	1.162	17.72
#1	.0106	.0094
#2	.0107	.0122
Errors	LC Pass	LC Pass
High	.0130	.0130
Low	.0070	.0070

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1644104	10000	--	--	--	--	--
SDev	2829.134	.0000000	--	--	--	--	--
%RSD	.1720775	.0000000	--	--	--	--	--
#1	1646105	10000	--	--	--	--	--
#2	1642104	10000	--	--	--	--	--

010892

Analysis Report 03/30/16 03:10:23 PM page 1

Method: DAILY2 Sample Name: ICSA Operator:
Run Time: 03/30/16 15:05:19
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0016	472.6	-.0051	-.0032	.0028	.0001	.0148
SDev	.0004	.4	.0015	.0088	.0001	.0000	.0076
%RSD	25.26	.0755	28.93	276.0	3.894	47.66	51.68
#1	-.0018	472.4	-.0041	.0030	.0027	.0000	.0202
#2	-.0013	472.9	-.0062	-.0094	.0029	.0001	.0094
Errors	NOCHECK	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High		600.0					
Low		400.0					

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	443.9	.0010	-.0030	-.0004	-.0030	194.7	-.0077
SDev	.4	.0001	.0001	.0014	.0004	.1	.0307
%RSD	.0804	6.520	1.930	365.9	13.40	.0712	400.6
#1	444.1	.0010	-.0031	-.0014	-.0032	194.8	-.0294
#2	443.6	.0011	-.0030	.0006	-.0027	194.6	.0140
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	NOCHECK
High	600.0					240.0	
Low	400.0					160.0	

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0018	.0020	529.6	.0222	-.0021	.2203	.0305
SDev	.0017	.0001	.7	.0001	.0004	.3088	.0064
%RSD	95.73	2.543	.1398	.2207	18.94	140.2	20.90
#1	-.0030	.0020	529.1	.0222	-.0024	.0019	.0260
#2	-.0006	.0020	530.1	.0222	-.0018	.4386	.0350
Errors	NOCHECK	NOCHECK	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High			600.0				
Low			400.0				

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0034	.0847	-.0377	.1031	-.0302	-.0033	88.65
SDev	.0006	.0005	.0023	.0003	.0290	.0126	.01
%RSD	17.36	.5395	6.227	.2636	96.11	380.6	.0069
#1	-.0038	.0851	-.0393	.1033	-.0508	-.0123	88.65
#2	-.0030	.0844	-.0360	.1029	-.0097	.0056	88.65
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0063	-.0037	-.0001	.0032	-.0003	-.0092	.0041
SDev	.0013	.0018	.0029	.0014	.0007	.0007	.0000
%RSD	20.35	47.90	2070.	44.72	218.4	8.007	.9557
#1	.0054	-.0024	-.0022	.0022	.0002	-.0097	.0041
#2	.0072	-.0049	.0019	.0041	-.0009	-.0087	.0042
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0067	.0024	.0049	.0484	-.0025	.0049	-.0002
SDev	.0013	.0001	.0012	.0779	.0001	.0007	.0000
%RSD	19.39	4.847	24.86	160.9	5.322	14.71	10.28
#1	.0076	.0023	.0040	-.0067	-.0026	.0044	-.0002
#2	.0058	.0025	.0057	.1035	-.0024	.0054	-.0002
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	-.0052	-.0012
SDev	.0001	.0013
%RSD	2.002	105.8
#1	-.0053	-.0021
#2	-.0051	-.0003
Errors	NOCHECK	NOCHECK
High		
Low		

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1488520	10000	--	--	--	--	--
SDev	53.03301	.0000000	--	--	--	--	--
%RSD	.0035628	.0000000	--	--	--	--	--
#1	1488482	10000	--	--	--	--	--
#2	1488557	10000	--	--	--	--	--

010895

Analysis Report 03/30/16 03:24:05 PM

Method: DAILY2 Sample Name: ICSAB Operator:
Run Time: 03/30/16 15:19:01
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.092	472.7	1.082	1.008	.5268	.5079	.0141
SDev	.000	.8	.003	.000	.0004	.0004	.0001
%RSD	.0292	.1596	.3184	.0292	.0741	.0719	.5276
#1	1.092	473.2	1.084	1.008	.5265	.5082	.0142
#2	1.092	472.1	1.079	1.008	.5270	.5077	.0141
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK
High	1.200	600.0	1.200	1.200	.6000	.6000	
Low	.8000	400.0	.8000	.8000	.4000	.4000	

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	439.2	.9966	.4894	.4808	.5294	191.6	-.0008
SDev	.9	.0039	.0001	.0002	.0003	.8	.0208
%RSD	.2035	.3905	.0122	.0352	.0525	.4409	2740.
#1	438.5	.9938	.4893	.4809	.5295	191.0	-.0154
#2	439.8	.9993	.4894	.4806	.5292	192.2	.0139
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK
High	600.0	1.200	.6000	.6000	.6000	240.0	
Low	400.0	.8000	.4000	.4000	.4000	160.0	

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0007	H1.208	523.2	.5286	1.037	.2781	.0324
SDev	.0013	.003	1.6	.0008	.002	.2521	.0046
%RSD	171.5	.2280	.3044	.1450	.1583	90.66	14.18
#1	-.0017	H1.206	522.1	.5281	1.036	.0998	.0292
#2	.0002	H1.210	524.4	.5291	1.038	.4564	.0356
Errors	NOCHECK	LC High	LC Pass	LC Pass	LC Pass	NOCHECK	NOCHECK
High		1.200	600.0	.6000	1.200		
Low		.8000	400.0	.4000	.8000		

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.9503	1.081	.9575	.0955	-.0267	1.084	87.77
SDev	.0007	.005	.0005	.0011	.0541	.004	.16
%RSD	.0770	.4498	.0522	1.202	202.6	.3367	.1804
#1	.9509	1.078	.9572	.0963	.0115	1.087	87.89
#2	.9498	1.085	.9579	.0947	-.0649	1.082	87.66
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	NOCHECK
High	1.200					1.200	
Low	.8000					.8000	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.036	1.038	1.011	.9978	1.036	1.004	1.060
SDev	.002	.007	.001	.0019	.004	.008	.001
%RSD	.1752	.7198	.1226	.1957	.4217	.7914	.1360
#1	1.038	1.032	1.012	.9964	1.033	.9979	1.061
#2	1.035	1.043	1.010	.9992	1.039	1.009	1.059
Errors	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass
High				1.200	1.200	1.200	1.200
Low				.8000	.8000	.8000	.8000

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0036	.9573	.9992	1.065	.5025	.0146	-.0006
SDev	.0014	.0006	.0027	.067	.0009	.0045	.0001
%RSD	40.30	.0666	.2740	6.335	.1796	30.77	15.83
#1	.0025	.9569	1.001	1.018	.5018	.0177	-.0007
#2	.0046	.9578	.9973	1.113	.5031	.0114	-.0005
Errors	NOCHECK	LC Pass	LC Pass	NOCHECK	LC Pass	NOCHECK	NOCHECK
High		1.200	1.200		.6000		
Low		.8000	.8000		.4000		

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.9940	.9429
SDev	.0048	.0035
%RSD	.4867	.3709
#1	.9906	.9404
#2	.9974	.9454
Errors	LC Pass	NOCHECK
High	1.200	
Low	.8000	

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1473884	10000	--	--	--	--	--
SDev	2624.073	.0000000	--	--	--	--	--
%RSD	.1780380	.0000000	--	--	--	--	--
#1	1475739	10000	--	--	--	--	--
#2	1472028	10000	--	--	--	--	--

010898

Analysis Report 03/30/16 03:29:23 PM page 1

Method: DAILY2 Sample Name: UCL1 Operator:
Run Time: 03/30/16 15:24:19
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0091	557.9	-.0268	-.1097	.0030	.0004	-.0101
SDev	.0014	.9	.0007	.0349	.0001	.0000	.0049
%RSD	15.52	.1627	2.635	31.79	2.089	3.108	48.36
#1	-.0081	558.5	-.0263	-.0850	.0030	.0004	-.0136
#2	-.0101	557.2	-.0273	-.1343	.0031	.0004	-.0067

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	227.8	.0069	-.0108	-.0183	.0055	570.2	119.4
SDev	.2	.0002	.0001	.0005	.0002	1.0	.2
%RSD	.0981	2.660	.7066	2.814	3.507	.1839	.2072
#1	227.6	.0070	-.0109	-.0179	.0054	570.9	119.2
#2	227.9	.0068	-.0108	-.0187	.0056	569.4	119.5

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.3077	19.62	616.7	.0028	-.0046	281.6	S41.29
SDev	.0016	.02	1.3	.0001	.0012	.0	.00
%RSD	.5236	.0887	.2083	1.601	25.58	.0111	.0006
#1	-.3066	19.61	615.8	.0028	-.0037	281.7	S41.29
#2	-.3089	19.64	617.6	.0029	-.0054	281.6	S41.29

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0172	.1126	-.0406	.4305	-.4099	-.0362	87.10
SDev	.0006	.0074	.0015	.0009	.0167	.0110	.10
%RSD	3.302	6.553	3.711	.2166	4.076	30.33	.1113
#1	-.0168	.1074	-.0417	.4298	-.4217	-.0439	87.17
#2	-.0176	.1178	-.0396	.4311	-.3981	-.0284	87.03

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.3322	-.0152	.0290	.0104	-.1207	.0039	.0154
SDev	.0163	.0032	.0029	.0035	.0076	.0005	.0000
%RSD	4.895	21.21	9.954	33.13	6.261	12.00	.1531
#1	-.3437	-.0175	.0310	.0080	-.1261	.0042	.0154
#2	-.3207	-.0129	.0269	.0129	-.1154	.0035	.0154

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.51	-.0369	.0158	.1448	.0050	.0034	-.0029
SDev	.02	.0002	.0044	.0192	.0005	.0047	.0000
%RSD	.1036	.5779	27.57	13.27	10.12	139.7	.6018
#1	20.50	-.0370	.0189	.1313	.0054	.0000	-.0029
#2	20.53	-.0367	.0127	.1584	.0047	.0067	-.0029

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0934	-.0076
SDev	.0000	.0008
%RSD	.0456	10.64
#1	.0934	-.0082
#2	.0933	-.0070

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1462488	10000	--	--	--	--	--
SDev	1724.633	.0000000	--	--	--	--	--
%RSD	.1179246	.0000000	--	--	--	--	--
#1	1463708	10000	--	--	--	--	--
#2	1461269	10000	--	--	--	--	--

010900

Analysis Report 03/30/16 03:34:41 PM page 1

Method: DAILY2 Sample Name: UCL-AL-500PPM Operator:
Run Time: 03/30/16 15:29:37
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0014	473.2	.0136	.0071	.0007	.0001	.0065
SDev	.0009	.5	.0066	.0020	.0001	.0000	.0019
%RSD	70.16	.1020	48.15	27.73	19.99	71.54	29.25
#1	.0020	472.9	.0183	.0057	.0006	.0000	.0078
#2	.0007	473.6	.0090	.0085	.0008	.0001	.0051

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0415	-.0013	.0006	.0004	.0028	.0411	.0146
SDev	.0025	.0001	.0011	.0017	.0007	.0350	.0444
%RSD	6.084	7.927	168.2	402.7	26.13	85.24	303.5
#1	.0432	-.0012	.0014	-.0008	.0022	.0163	-.0168
#2	.0397	-.0014	-.0001	.0016	.0033	.0658	.0461

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0006	.0017	.0479	.0037	-.0009	.0634	-.0037
SDev	.0034	.0001	.0053	.0000	.0011	.6107	.0102
%RSD	583.0	4.280	11.05	1.018	120.0	962.9	275.0
#1	-.0018	.0017	.0516	.0037	-.0017	-.3684	-.0109
#2	.0029	.0016	.0441	.0037	-.0001	.4953	.0035

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0001	.1112	-.0498	.0055	-.0613	.0029	92.20
SDev	.0014	.0001	.0003	.0026	.0306	.0078	.14
%RSD	1010.	.0415	.6428	46.73	49.86	272.4	.1516
#1	-.0009	.1112	-.0500	.0073	-.0397	-.0026	92.30
#2	.0011	.1113	-.0496	.0037	-.0829	.0083	92.10

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0039	-.0040	.0242	.0039	-.0039	-.0090	.0002
SDev	.0012	.0008	.0024	.0002	.0009	.0019	.0001
%RSD	30.02	20.26	10.05	5.903	23.51	21.10	36.84
#1	-.0031	-.0034	.0259	.0037	-.0033	-.0077	.0002
#2	-.0047	-.0045	.0225	.0040	-.0046	-.0104	.0001

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0020	.0004	-.0011	.0120	.0011	.0058	-.0000
SDev	.0029	.0000	.0007	.1119	.0014	.0025	.0001
%RSD	148.0	4.486	64.20	928.6	125.9	43.27	1032.
#1	-.0001	.0004	-.0017	-.0671	.0001	.0040	-.0001
#2	.0041	.0004	-.0006	.0911	.0021	.0076	.0001

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	-.0390	-.0000
SDev	.0001	.0017
%RSD	.3600	3612.
#1	-.0389	-.0012
#2	-.0391	.0011

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1548102	10000	--	--	--	--	--
SDev	2355.373	.0000000	--	--	--	--	--
%RSD	.1521459	.0000000	--	--	--	--	--
#1	1549767	10000	--	--	--	--	--
#2	1546436	10000	--	--	--	--	--

010902

Analysis Report 03/30/16 03:39:58 PM page 1

Method: DAILY2 Sample Name: UCL2 Operator:
Run Time: 03/30/16 15:34:55
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.039	.1317	19.61	19.45	18.53	.9478	19.11
SDev	.002	.0027	.05	.09	.02	.0012	.00
%RSD	.1010	2.021	.2622	.4608	.1076	.1220	.0259
#1	2.041	.1298	19.64	19.39	18.52	.9470	19.11
#2	2.038	.1336	19.57	19.52	18.55	.9486	19.12

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1747	9.553	19.18	18.97	19.66	-.5239	.0104
SDev	.0016	.001	.01	.01	.03	.0135	.0340
%RSD	.8977	.0098	.0316	.0617	.1351	2.582	327.5
#1	.1736	9.554	19.18	18.98	19.67	-.5335	-.0137
#2	.1758	9.553	19.19	18.96	19.64	-.5143	.0345

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.00	.0006	.0153	18.81	19.44	1.284	.0055
SDev	.00	.0001	.0007	.01	.02	.098	.0081
%RSD	.0018	13.00	4.409	.0267	.1204	7.601	148.6
#1	20.00	.0006	.0148	18.81	19.42	1.215	-.0003
#2	20.00	.0007	.0157	18.80	19.45	1.353	.0112

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	18.71	19.33	19.36	19.50	19.77	19.79	101.2
SDev	.04	.02	.06	.06	.19	.04	.1
%RSD	.1944	.1062	.3284	.3209	.9637	.1949	.0587
#1	18.69	19.34	19.32	19.45	19.63	19.77	101.2
#2	18.74	19.32	19.41	19.54	19.90	19.82	101.1

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	19.67	19.70	17.71	19.33	19.67	19.32	19.26
SDev	.06	.10	.01	.04	.08	.04	.02
%RSD	.2933	.4897	.0427	.1837	.4243	.1998	.0875
#1	19.63	19.63	17.71	19.31	19.61	19.29	19.24
#2	19.71	19.76	17.72	19.36	19.73	19.35	19.27

JM 4/19/16 540 UCL

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0375	21.20	19.39	19.94	19.41	19.77	18.83
SDev	.0026	.00	.05	.11	.00	.00	.01
%RSD	6.956	.0090	.2371	.5323	.0206	.0092	.0409
#1	-.0356	21.20	19.43	19.87	19.42	19.77	18.84
#2	-.0393	21.20	19.36	20.02	19.41	19.77	18.83

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	18.80	20.62
SDev	.05	.06
%RSD	.2452	.2903
#1	18.77	20.58
#2	18.83	20.67

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1698424	10000	--	--	--	--	--
SDev	1042.983	.0000000	--	--	--	--	--
%RSD	.0614089	.0000000	--	--	--	--	--
#1	1699161	10000	--	--	--	--	--
#2	1697686	10000	--	--	--	--	--

010904

Analysis Report 03/30/16 03:45:16 PM page 1

Method: DAILY2 Sample Name: ZZZZ Operator:
Run Time: 03/30/16 15:40:12
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0008	.0302	-.0000	.0741	.0020	.0000	.0023
SDev	.0013	.0069	.0005	.0101	.0002	.0001	.0053
%RSD	163.9	22.90	1544.	13.62	11.92	2876.	229.3
#1	-.0001	.0253	.0003	.0812	.0022	-.0001	-.0014
#2	.0017	.0351	-.0004	.0670	.0019	.0001	.0061

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0100	.0007	.0011	.0013	.0007	.0210	.0028
SDev	.0013	.0002	.0001	.0036	.0005	.0317	.0676
%RSD	13.25	27.59	12.79	285.0	68.67	150.6	2371.
#1	.0110	.0006	.0010	-.0013	.0004	-.0014	-.0449
#2	.0091	.0009	.0012	.0038	.0010	.0435	.0506

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0015	.0004	.0187	.0014	.0026	.0357	-.0034
SDev	.0065	.0002	.0040	.0001	.0005	.8525	.0163
%RSD	444.5	46.69	21.21	3.866	18.19	2385.	484.8
#1	-.0031	.0003	.0159	.0014	.0023	-.5671	-.0149
#2	.0060	.0006	.0215	.0013	.0029	.6385	.0082

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0008	.0030	.0015	.0027	-.0017	.0035	99.18
SDev	.0006	.0048	.0031	.0037	.0512	.0098	1.04
%RSD	75.96	159.8	203.8	137.2	2940.	280.3	1.045
#1	.0012	-.0004	.0037	.0052	-.0380	-.0034	99.92
#2	.0004	.0064	-.0007	.0001	.0345	.0105	98.45

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0012	-.0005	.0066	.0020	-.0007	.0014	.0013
SDev	.0044	.0022	.0015	.0004	.0000	.0016	.0001
%RSD	373.0	454.7	22.80	22.34	4.248	117.0	7.252
#1	-.0043	.0011	.0055	.0023	-.0007	.0025	.0013
#2	.0019	-.0020	.0076	.0017	-.0007	.0002	.0012

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0016	.0008	-.0041	-.0002	.0004	.0044	.0009
SDev	.0031	.0000	.0031	.1829	.0014	.0018	.0002
%RSD	196.6	2.710	75.12	87510.	335.8	41.42	24.39
#1	.0006	.0008	-.0062	-.1295	-.0006	.0057	.0007
#2	-.0037	.0008	-.0019	.1291	.0014	.0031	.0010

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0012	.0012
SDev	.0001	.0021
%RSD	5.470	176.1
#1	.0012	-.0003
#2	.0013	.0027

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1665216	10000	--	--	--	--	--
SDev	17388.46	.0000000	--	--	--	--	--
%RSD	1.044216	.0000000	--	--	--	--	--
#1	1677512	10000	--	--	--	--	--
#2	1652921	10000	--	--	--	--	--

010906

Analysis Report 03/30/16 03:50:34 PM page 1

Method: DAILY2 Sample Name: CCV Operator:
Run Time: 03/30/16 15:45:30
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.031	10.12	5.285	5.191	9.777	1.020	4.974
SDev	.000	.01	.001	.044	.002	.000	.003
%RSD	.0372	.0908	.0185	.8394	.0154	.0261	.0527
#1	1.030	10.11	5.284	5.160	9.776	1.020	4.972
#2	1.031	10.12	5.285	5.222	9.778	1.020	4.975
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.100	11.00	5.500	5.500	11.00	1.100	5.500
Low	.9000	9.000	4.500	4.500	9.000	.9000	4.500

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.23	1.024	5.036	1.936	1.971	9.857	19.43
SDev	.07	.000	.003	.002	.002	.012	.02
%RSD	.3349	.0458	.0626	.1106	.1077	.1189	.1072
#1	20.18	1.024	5.039	1.934	1.972	9.849	19.41
#2	20.27	1.024	5.034	1.937	1.969	9.865	19.44
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.00	1.100	5.500	2.200	2.200	11.00	22.00
Low	18.00	.9000	4.500	1.800	1.800	9.000	18.00

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.004	5.189	20.31	1.019	4.964	29.21	29.73
SDev	.000	.011	.01	.000	.007	.04	.02
%RSD	.0098	.2107	.0589	.0353	.1457	.1486	.0637
#1	5.004	5.181	20.30	1.018	4.959	29.18	29.72
#2	5.005	5.196	20.32	1.019	4.969	29.25	29.75
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.500	5.500	22.00	1.100	5.500	33.00	33.00
Low	4.500	4.500	18.00	.9000	4.500	27.00	27.00

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	4.870	5.030	5.008	.9595	H1.119	1.024	96.72
SDev	.007	.022	.015	.0005	.021	.001	.34
%RSD	.1468	.4384	.2915	.0512	1.852	.1222	.3547
#1	4.876	5.015	4.997	.9591	H1.134	1.025	96.96
#2	4.865	5.046	5.018	.9598	H1.105	1.023	96.47
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC High	LC Pass	NOCHECK
High	5.500			1.100	1.100	1.100	
Low	4.500			.9000	.9000	.9000	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.222	5.237	4.980	5.010	5.227	5.058	5.045
SDev	.014	.035	.005	.017	.028	.009	.003
%RSD	.2719	.6738	.0965	.3406	.5401	.1828	.0677
#1	5.212	5.212	4.984	4.998	5.207	5.065	5.048
#2	5.232	5.262	4.977	5.022	5.247	5.052	5.043
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			5.500	5.500	5.500	5.500	5.500
Low			4.500	4.500	4.500	4.500	4.500

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9969	4.887	5.195	5.017	5.015	1.034	4.943
SDev	.0054	.001	.007	.022	.006	.000	.023
%RSD	.5448	.0208	.1282	.4320	.1137	.0165	.4694
#1	.9931	4.887	5.190	5.032	5.019	1.034	4.960
#2	1.001	4.886	5.199	5.002	5.011	1.034	4.927
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.100	5.500	5.500	5.500	5.500	1.100	5.500
Low	.9000	4.500	4.500	4.500	4.500	.9000	4.500

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	1.053	4.797
SDev	.002	.023
%RSD	.2047	.4786
#1	1.052	4.781
#2	1.055	4.813
Errors	LC Pass	LC Pass
High	1.100	5.500
Low	.9000	4.500

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1623812	10000	--	--	--	--	--
SDev	5701.402	.0000000	--	--	--	--	--
%RSD	.3511123	.0000000	--	--	--	--	--
#1	1627843	10000	--	--	--	--	--
#2	1619780	10000	--	--	--	--	--

010909

Analysis Report 03/30/16 03:55:52 PM page 1

Method: DAILY2 Sample Name: CCB Operator:
Run Time: 03/30/16 15:50:48
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0007	.0108	.0025	H.0650	.0008	.0000	-.0024
SDev	.0007	.0027	.0012	.0102	.0001	.0000	.0040
%RSD	110.8	25.17	47.50	15.65	10.21	75.64	170.2
#1	.0001	.0089	.0033	H.0721	.0009	.0000	-.0052
#2	.0012	.0127	.0016	H.0578	.0008	.0000	.0005
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass
High	.0050	.0500	.0050	.0500	.0050	.0050	.0100
Low	-.0050	-.0500	-.0050	-.0500	-.0050	-.0050	-.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0041	.0002	.0006	.0008	.0004	.0112	.0121
SDev	.0009	.0000	.0004	.0021	.0004	.0392	.0399
%RSD	21.94	13.75	67.31	251.5	99.98	349.6	328.5
#1	.0035	.0002	.0003	-.0007	.0001	-.0165	-.0161
#2	.0048	.0002	.0009	.0023	.0006	.0390	.0403
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0500	.0050	.0050	.0050	.0050	.0500	.1000
Low	-.0500	-.0050	-.0050	-.0050	-.0050	-.0500	-.1000

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0017	.0005	.0081	.0008	.0017	H.1831	-.0023
SDev	.0036	.0001	.0030	.0000	.0012	.5593	.0098
%RSD	210.0	16.51	37.59	2.590	73.26	305.4	417.4
#1	-.0008	.0004	.0059	.0008	.0025	L-.2123	-.0093
#2	.0043	.0005	.0102	.0008	.0008	H.5786	.0046
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	.0050	.0050	.0500	.0050	.0050	.0500	.0500
Low	-.0050	-.0050	-.0500	-.0050	-.0050	-.0500	-.0500

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0001	.0013	.0013	-.0025	H.0270	.0057	98.96
SDev	.0000	.0022	.0010	.0035	.0150	.0038	.43
%RSD	14.94	170.1	78.83	141.6	55.38	67.47	.4366
#1	.0001	.0028	.0006	-.0050	.0164	.0030	99.26
#2	.0001	-.0003	.0020	.0000	H.0376	.0084	98.65
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC High	LC Pass	NOCHECK
High	.0050			.0050	.0200	.0100	
Low	-.0050			-.0050	-.0200	-.0100	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0002	.0005	.0029	.0013	.0004	.0007	.0006
SDev	.0019	.0006	.0046	.0001	.0010	.0003	.0001
%RSD	811.6	124.2	155.9	4.022	252.9	42.06	8.254
#1	-.0011	.0001	-.0003	.0013	-.0003	.0010	.0006
#2	.0016	.0009	.0061	.0013	.0012	.0005	.0005
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			.0100	.0050	.0050	.0100	.0050
Low			-.0100	-.0050	-.0050	-.0100	-.0050

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0007	.0004	.0004	.0440	-.0000	.0013	.0005
SDev	.0024	.0000	.0016	.1134	.0001	.0002	.0000
%RSD	344.8	10.35	371.7	258.0	607.7	12.75	.5056
#1	.0023	.0005	.0016	-.0362	-.0001	.0015	.0005
#2	-.0010	.0004	-.0007	H.1241	.0000	.0012	.0005
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0100	.0050	.0100	.1000	.0050	.0100	.0050
Low	-.0100	-.0050	-.0100	-.1000	-.0050	-.0100	-.0050

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0006	.0004
SDev	.0001	.0018
%RSD	22.41	397.4
#1	.0005	-.0008
#2	.0007	.0017
Errors	LC Pass	LC Pass
High	.0050	.0050
Low	-.0050	-.0050

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1661440	10000	--	--	--	--	--
SDev	7293.099	.0000000	--	--	--	--	--
%RSD	.4389626	.0000000	--	--	--	--	--
#1	1666597	10000	--	--	--	--	--
#2	1656283	10000	--	--	--	--	--

010912

Analysis Report 03/30/16 04:15:37 PM page 1

Method: DAILY2 Sample Name: PB16C24KE3 Operator:
Run Time: 03/30/16 16:10:44
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0001	.0026	-.0009	.0079	.0003	-.0000	-.0049
SDev	.0016	.0121	.0042	.0012	.0000	.0000	.0103
%RSD	1538.	460.5	456.7	15.12	7.843	569.5	210.1
#1	-.0010	-.0059	-.0039	.0071	.0003	-.0000	-.0122
#2	.0012	.0112	.0021	.0088	.0003	.0000	.0024

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0075	.0002	.0007	.0006	.0006	-.0176	.0140
SDev	.0014	.0001	.0010	.0013	.0004	.0337	.0284
%RSD	19.24	67.23	149.6	229.9	69.69	191.6	203.5
#1	.0065	.0001	-.0000	-.0004	.0009	-.0414	-.0061
#2	.0086	.0002	.0014	.0015	.0003	.0062	.0341

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0006	.0001	-.0018	.0002	.0014	.0983	-.0066
SDev	.0029	.0001	.0060	.0001	.0006	.3975	.0109
%RSD	509.0	71.72	334.0	22.33	43.54	404.4	165.3
#1	-.0015	.0001	-.0060	.0003	.0019	-.1828	-.0143
#2	.0026	.0002	.0024	.0002	.0010	.3793	.0011

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0000	-.0001	-.0000	-.0094	.0253	.0002	98.33
SDev	.0007	.0010	.0023	.0073	.0306	.0045	.27
%RSD	4405.	1313.	22110.	77.07	120.9	2222.	.2738
#1	-.0005	.0007	.0016	-.0146	.0469	-.0030	98.14
#2	.0005	-.0008	-.0016	-.0043	.0037	.0034	98.52

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0001	.0002	-.0003	-.0000	.0001	-.0018	.0001
SDev	.0105	.0002	.0016	.0018	.0037	.0021	.0001
%RSD	8530.	151.7	596.4	7176.	2450.	114.9	47.29
#1	-.0073	-.0000	-.0014	.0013	-.0024	-.0033	.0001
#2	.0075	.0003	.0009	-.0013	.0027	-.0003	.0002

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0040	.0003	-.0036	.0136	.0003	-.0025	.0002
SDev	.0024	.0001	.0057	.0832	.0003	.0006	.0000
%RSD	59.39	17.41	157.6	611.4	92.12	22.37	2.102
#1	.0056	.0004	-.0076	-.0452	.0005	-.0029	.0002
#2	.0023	.0003	.0004	.0724	.0001	-.0021	.0002

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0002	-.0011
SDev	.0001	.0019
%RSD	52.79	172.9
#1	.0001	-.0025
#2	.0003	.0002

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1650936	10000	--	--	--	--	--
SDev	4468.208	.0000000	--	--	--	--	--
%RSD	.2706470	.0000000	--	--	--	--	--
#1	1647776	10000	--	--	--	--	--
#2	1654095	10000	--	--	--	--	--

010914

Analysis Report 03/30/16 04:20:44 PM page 1

Method: DAILY2 Sample Name: LCS16C24KE3 Operator:
Run Time: 03/30/16 16:15:51
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1094	4.088	4.259	-.0221	3.939	.1020	2.002
SDev	.0010	.001	.001	.0004	.001	.0000	.007
%RSD	.9023	.0171	.0257	1.602	.0131	.0330	.3519
#1	.1087	4.087	4.258	-.0223	3.939	.1020	1.997
#2	.1101	4.088	4.259	-.0218	3.938	.1019	2.006

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	21.10	.1022	1.018	.3834	.4949	2.037	19.04
SDev	.03	.0001	.002	.0003	.0001	.046	.03
%RSD	.1570	.0884	.1640	.0825	.0129	2.276	.1441
#1	21.12	.1021	1.016	.3836	.4949	2.004	19.03
#2	21.07	.1022	1.019	.3832	.4948	2.069	19.06

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0018	2.151	21.17	1.029	.0015	19.66	20.57
SDev	.0032	.002	.00	.000	.0002	.36	.01
%RSD	179.3	.0954	.0185	.0472	13.84	1.819	.0537
#1	-.0005	2.152	21.17	1.028	.0017	19.41	20.58
#2	.0040	2.149	21.17	1.029	.0014	19.92	20.56

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.9761	1.039	1.041	-.0075	2.184	1.044	96.03
SDev	.0018	.000	.001	.0074	.017	.004	.03
%RSD	.1826	.0417	.1214	99.25	.7958	.3615	.0274
#1	.9773	1.040	1.040	-.0127	2.196	1.047	96.05
#2	.9748	1.039	1.042	-.0022	2.171	1.041	96.01

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.414	4.390	.0043	1.039	4.394	-.0009	2.046
SDev	.010	.014	.0056	.001	.006	.0004	.004
%RSD	.2231	.3261	130.5	.0671	.1426	41.09	.2000
#1	4.421	4.379	.0003	1.039	4.389	-.0007	2.043
#2	4.407	4.400	.0082	1.040	4.398	-.0012	2.049

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0079	-.0000	4.237	-.5406	1.006	.0066	-.0005
SDev	.0044	.0001	.009	.0747	.001	.0027	.0000
%RSD	56.07	3945.	.2209	13.83	.0714	41.64	6.664
#1	-.0048	.0001	4.230	-.5935	1.006	.0047	-.0004
#2	-.0110	-.0001	4.243	-.4878	1.005	.0085	-.0005

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	1.059	1.915
SDev	.003	.002
%RSD	.2871	.0981
#1	1.061	1.916
#2	1.056	1.913

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1612462	10000	--	--	--	--	--
SDev	441.2346	.0000000	--	--	--	--	--
%RSD	.0273640	.0000000	--	--	--	--	--
#1	1612774	10000	--	--	--	--	--
#2	1612150	10000	--	--	--	--	--

010916

Analysis Report 03/30/16 04:25:51 PM page 1

Method: DAILY2 Sample Name: LCS16C24KE4 Operator:
Run Time: 03/30/16 16:20:58
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1006	.1694	.1074	.1095	.1009	.1022	.0949
SDev	.0017	.0095	.0001	.0045	.0004	.0000	.0094
%RSD	1.659	5.641	.0591	4.115	.4432	.0034	9.856
#1	.0994	.1626	.1074	.1063	.1006	.1022	.0883
#2	.1017	.1761	.1075	.1127	.1012	.1022	.1015

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1117	.1052	.1013	.0985	.1012	.0914	.0699
SDev	.0012	.0002	.0010	.0015	.0011	.0077	.0345
%RSD	1.070	.1700	1.029	1.528	1.090	8.483	49.37
#1	.1109	.1051	.1005	.0974	.1004	.0859	.0455
#2	.1126	.1053	.1020	.0995	.1020	.0969	.0943

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0784	.0788	.1032	.1039	.1054	1.499	.0750
SDev	.0029	.0002	.0055	.0000	.0002	.324	.0083
%RSD	3.765	.2629	5.364	.0183	.1820	21.59	11.00
#1	.0763	.0786	.0993	.1039	.1053	1.270	.0692
#2	.0804	.0789	.1071	.1039	.1055	1.728	.0808

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0986	.1073	.1005	.0963	.0794	.1013	98.86
SDev	.0010	.0006	.0008	.0029	.0718	.0011	.42
%RSD	1.028	.5345	.7542	3.031	90.38	1.089	.4264
#1	.0978	.1077	.1011	.0942	.1301	.1021	99.16
#2	.0993	.1069	.1000	.0984	.0287	.1005	98.56

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1063	.1090	.0765	.1027	.1080	.0944	.1041
SDev	.0150	.0009	.0042	.0007	.0044	.0003	.0002
%RSD	14.09	.7857	5.538	.6776	4.091	.3700	.1801
#1	.1169	.1084	.0735	.1032	.1111	.0942	.1040
#2	.0957	.1096	.0795	.1022	.1049	.0947	.1042

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1016	.0964	.0987	.0482	.0988	.1030	.1003
SDev	.0029	.0003	.0030	.0992	.0008	.0045	.0005
%RSD	2.807	.2751	3.006	205.7	.7901	4.397	.5021
#1	.0996	.0962	.0966	-.0219	.0983	.0998	.0999
#2	.1037	.0966	.1008	.1184	.0994	.1062	.1006

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.1075	.0951
SDev	.0003	.0008
%RSD	.2541	.8789
#1	.1073	.0945
#2	.1077	.0957

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1659776	10000	--	--	--	--	--
SDev	7127.636	.0000000	--	--	--	--	--
%RSD	.4294336	.0000000	--	--	--	--	--
#1	1664816	10000	--	--	--	--	--
#2	1654736	10000	--	--	--	--	--

010918

Analysis Report 03/30/16 04:30:58 PM page 1

Method: DAILY2 Sample Name: 594179 Operator:
Run Time: 03/30/16 16:26:05
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0008	.0185	.0024	.9056	.0002	-.0000	-.0001
SDev	.0002	.0009	.0032	.0110	.0000	.0000	.0035
%RSD	30.47	4.633	133.1	1.216	.2074	35.58	2687.
#1	.0006	.0179	.0001	.8978	.0002	-.0000	-.0026
#2	.0010	.0191	.0046	.9134	.0002	-.0000	.0023

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0633	.0003	.0010	.0017	.0002	-.0229	.0185
SDev	.0009	.0001	.0003	.0010	.0004	.0089	.0085
%RSD	1.476	30.60	35.59	59.58	195.7	38.99	45.94
#1	.0626	.0002	.0007	.0010	-.0001	-.0292	.0125
#2	.0639	.0004	.0012	.0024	.0004	-.0166	.0246

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0003	.0003	.0098	.0001	.0006	14.08	13.95
SDev	.0013	.0001	.0004	.0001	.0001	.33	.02
%RSD	397.3	21.27	3.923	101.9	8.388	2.334	.1718
#1	-.0006	.0002	.0100	.0000	.0006	13.85	13.93
#2	.0012	.0003	.0095	.0002	.0006	14.31	13.97

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0008	.0031	-.0002	-.0003	-.0303	.0005	98.50
SDev	.0010	.0015	.0005	.0034	.0262	.0023	.00
%RSD	114.7	49.14	225.4	1099.	86.69	507.1	.0022
#1	-.0015	.0042	.0001	-.0027	-.0117	.0021	98.50
#2	-.0002	.0020	-.0006	.0021	-.0488	-.0012	98.50

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0071	-.0053	.0534	.0009	-.0012	-.0012	.0002
SDev	.0100	.0016	.0026	.0009	.0044	.0010	.0000
%RSD	140.6	30.53	4.779	98.77	377.2	83.05	17.64
#1	.0142	-.0042	.0516	.0015	.0019	-.0019	.0002
#2	.0000	-.0065	.0552	.0003	-.0043	-.0005	.0002

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0013	.0000	-.0073	.0032	-.0006	.0043	.0000
SDev	.0016	.0002	.0030	.0501	.0004	.0066	.0000
%RSD	126.2	344.1	41.07	1553.	55.22	153.0	128.4
#1	-.0024	-.0001	-.0095	-.0322	-.0004	-.0004	.0000
#2	-.0001	.0002	-.0052	.0387	-.0009	.0090	.0000

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0007	-.0009
SDev	.0002	.0008
%RSD	27.81	85.53
#1	.0006	-.0015
#2	.0008	-.0004

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1653656	10000	--	--	--	--	--
SDev	59.39697	.0000000	--	--	--	--	--
%RSD	.0035919	.0000000	--	--	--	--	--
#1	1653698	10000	--	--	--	--	--
#2	1653614	10000	--	--	--	--	--

010920

Analysis Report 03/30/16 04:36:05 PM page 1

Method: DAILY2 Sample Name: 594180 Operator:
Run Time: 03/30/16 16:31:12
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0006	.0117	.0026	.1500	-.0001	-.0000	-.0005
SDev	.0013	.0056	.0008	.0002	.0001	.0000	.0049
%RSD	227.6	48.04	31.43	.1501	209.1	28.04	1009.
#1	.0015	.0157	.0032	.1498	.0000	-.0001	.0030
#2	-.0003	.0077	.0020	.1502	-.0002	-.0000	-.0040

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0388	.0001	.0012	-.0001	-.0005	-.0180	-.0119
SDev	.0001	.0001	.0008	.0007	.0005	.0299	.0153
%RSD	.2182	58.89	66.14	689.5	114.1	166.2	129.0
#1	.0388	.0001	.0017	-.0006	-.0001	-.0391	-.0227
#2	.0387	.0002	.0006	.0004	-.0008	.0031	-.0010

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0011	.0002	.0078	-.0000	.0001	1.522	1.646
SDev	.0015	.0001	.0039	.0001	.0004	.048	.005
%RSD	145.9	37.83	50.60	282.6	272.1	3.187	.2820
#1	-.0021	.0001	.0105	.0000	-.0001	1.487	1.642
#2	.0000	.0002	.0050	-.0001	.0004	1.556	1.649

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0009	.0043	-.0004	-.0022	.0623	.0001	99.05
SDev	.0002	.0026	.0020	.0004	.0390	.0024	.48
%RSD	16.39	60.48	541.6	16.25	62.68	1714.	.4797
#1	-.0008	.0024	.0011	-.0020	.0347	.0018	98.71
#2	-.0010	.0061	-.0018	-.0025	.0899	-.0016	99.39

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0083	-.0073	.0670	.0012	-.0021	-.0000	.0001
SDev	.0024	.0014	.0019	.0005	.0018	.0007	.0001
%RSD	29.38	19.68	2.776	41.57	83.36	1591.	85.27
#1	.0100	-.0063	.0684	.0015	-.0009	.0005	.0002
#2	.0065	-.0083	.0657	.0008	-.0034	-.0006	.0000

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0007	-.0002	-.0000	-.0275	-.0010	.0034	-.0002
SDev	.0024	.0002	.0027	.0589	.0001	.0044	.0002
%RSD	353.0	83.12	15020.	213.9	6.959	129.2	74.04
#1	.0010	-.0001	-.0019	-.0691	-.0011	.0066	-.0001
#2	-.0024	-.0003	.0019	.0141	-.0010	.0003	-.0003

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0008	-.0013
SDev	.0000	.0017
%RSD	4.085	131.2
#1	.0008	-.0025
#2	.0008	-.0001

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1663064	10000	--	--	--	--	--
SDev	8043.340	.0000000	--	--	--	--	--
%RSD	.4836457	.0000000	--	--	--	--	--
#1	1657377	10000	--	--	--	--	--
#2	1668752	10000	--	--	--	--	--

010922

Analysis Report 03/30/16 04:41:11 PM page 1

Method: DAILY2 Sample Name: 594181 Operator:
Run Time: 03/30/16 16:36:19
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0003	.0155	.0004	.0757	.0001	-.0000	-.0041
SDev	.0003	.0038	.0032	.0011	.0000	.0000	.0080
%RSD	87.06	24.34	762.7	1.469	9.711	.3360	194.9
#1	-.0005	.0128	.0026	.0749	.0001	-.0000	-.0098
#2	-.0001	.0181	-.0018	.0765	.0001	-.0000	.0016

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0381	.0000	.0007	.0005	.0003	-.0003	.0070
SDev	.0008	.0003	.0003	.0007	.0001	.0249	.0068
%RSD	2.159	52990.	43.66	124.5	50.10	8362.	97.82
#1	.0375	.0002	.0005	.0001	.0002	-.0179	.0021
#2	.0387	-.0002	.0009	.0010	.0004	.0173	.0118

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0008	.0002	.0034	.0001	.0003	.4666	.3588
SDev	.0010	.0001	.0001	.0000	.0006	.0579	.0031
%RSD	118.3	31.40	1.524	27.86	178.7	12.42	.8688
#1	.0001	.0001	.0034	.0001	.0008	.4256	.3566
#2	.0015	.0002	.0034	.0001	-.0001	.5075	.3610

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0003	.0021	-.0003	-.0033	-.0122	-.0061	99.93
SDev	.0006	.0023	.0023	.0027	.0024	.0042	.34
%RSD	181.4	111.7	759.1	81.00	19.44	68.94	.3405
#1	.0008	.0037	.0014	-.0051	-.0139	-.0091	99.69
#2	-.0001	.0004	-.0020	-.0014	-.0105	-.0031	100.2

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0009	-.0039	.0775	.0005	-.0029	-.0008	.0001
SDev	.0046	.0027	.0007	.0023	.0003	.0002	.0000
%RSD	494.4	70.21	.8819	481.9	10.47	19.58	24.71
#1	-.0041	-.0020	.0780	.0021	-.0027	-.0007	.0000
#2	.0023	-.0058	.0771	-.0012	-.0031	-.0009	.0001

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0009	.0002	-.0047	.0237	.0001	-.0011	-.0001
SDev	.0013	.0001	.0037	.0349	.0000	.0003	.0000
%RSD	144.2	35.31	77.37	147.3	12.60	23.70	22.32
#1	.0019	.0002	-.0073	-.0010	.0001	-.0010	-.0001
#2	-.0000	.0001	-.0021	.0484	.0001	-.0013	-.0001

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0013	.0002
SDev	.0000	.0006
%RSD	.0865	302.4
#1	.0013	-.0002
#2	.0013	.0006

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1677774	10000	--	--	--	--	--
SDev	5637.762	.0000000	--	--	--	--	--
%RSD	.3360262	.0000000	--	--	--	--	--
#1	1673788	10000	--	--	--	--	--
#2	1681761	10000	--	--	--	--	--

010924

Analysis Report 03/30/16 04:46:19 PM page 1

Method: DAILY2 Sample Name: 594181D Operator:
Run Time: 03/30/16 16:41:26
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0001	.0148	.0007	.0722	.0001	-.0001	.0062
SDev	.0002	.0026	.0014	.0016	.0000	.0000	.0041
%RSD	281.6	17.64	181.7	2.215	4.194	26.10	67.26
#1	-.0001	.0130	-.0002	.0711	.0001	-.0001	.0032
#2	.0002	.0167	.0017	.0734	.0001	-.0000	.0091

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0285	.0001	-.0003	-.0003	-.0001	-.0039	-.0054
SDev	.0007	.0000	.0007	.0006	.0001	.0124	.0181
%RSD	2.386	13.64	244.4	217.7	148.4	319.4	333.2
#1	.0290	.0001	-.0008	-.0007	.0000	-.0127	-.0183
#2	.0280	.0002	.0002	.0002	-.0002	.0049	.0074

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0005	.0001	.0045	.0001	.0008	.3099	.3528
SDev	.0011	.0001	.0069	.0000	.0004	.1489	.0065
%RSD	225.6	52.71	154.1	13.97	54.76	48.03	1.830
#1	-.0013	.0001	-.0004	.0001	.0011	.2047	.3482
#2	.0003	.0001	.0094	.0001	.0005	.4152	.3573

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0000	-.0018	.0001	-.0041	.0350	.0001	100.1
SDev	.0002	.0014	.0002	.0002	.0730	.0000	.1
%RSD	1142.	77.83	193.6	4.881	208.6	27.44	.0851
#1	.0001	-.0008	-.0000	-.0039	-.0166	.0001	100.1
#2	-.0001	-.0027	.0002	-.0042	.0866	.0002	100.2

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0005	-.0033	.0806	-.0005	-.0021	.0005	.0001
SDev	.0054	.0033	.0021	.0003	.0004	.0001	.0000
%RSD	1144.	99.28	2.551	64.78	19.28	30.80	50.02
#1	-.0034	-.0010	.0792	-.0003	-.0018	.0004	.0000
#2	.0043	-.0057	.0821	-.0008	-.0023	.0006	.0001

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0001	.0001	-.0022	-.0130	-.0005	-.0010	-.0001
SDev	.0020	.0000	.0021	.0475	.0003	.0005	.0001
%RSD	2999.	30.89	94.66	365.6	56.63	47.89	85.13
#1	.0014	.0000	-.0037	-.0466	-.0007	-.0013	-.0002
#2	-.0015	.0001	-.0007	.0206	-.0003	-.0007	-.0001

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0010	-.0011
SDev	.0001	.0005
%RSD	9.547	45.89
#1	.0009	-.0014
#2	.0011	-.0007

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1681016	10000	--	--	--	--	--
SDev	1447.448	.0000000	--	--	--	--	--
%RSD	.0861055	.0000000	--	--	--	--	--
#1	1679993	10000	--	--	--	--	--
#2	1682040	10000	--	--	--	--	--

010926

Analysis Report 03/30/16 04:51:27 PM page 1

Method: DAILY2 Sample Name: 594181L DF5 Operator:
Run Time: 03/30/16 16:46:34
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0001	.0013	.0010	.0173	-.0000	-.0000	-.0031
SDev	.0005	.0035	.0019	.0005	.0002	.0000	.0060
%RSD	780.9	270.9	187.7	3.127	685.1	66.01	191.2
#1	.0003	.0037	-.0003	.0177	.0001	-.0001	.0011
#2	-.0004	-.0012	.0023	.0170	-.0002	-.0000	-.0074

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0127	.0000	-.0004	.0006	.0000	.0178	.0020
SDev	.0003	.0001	.0008	.0008	.0005	.0128	.0161
%RSD	2.760	167.3	220.5	139.9	1465.	71.81	789.6
#1	.0129	.0001	.0002	.0000	.0004	.0088	-.0094
#2	.0125	-.0000	-.0010	.0011	-.0003	.0268	.0134

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0001	.0001	.0008	.0002	.0001	.0816	.0667
SDev	.0019	.0001	.0033	.0001	.0021	.2572	.0071
%RSD	1263.	79.07	408.6	81.40	1671.	315.2	10.68
#1	-.0012	.0000	.0032	.0003	.0016	-.1003	.0616
#2	.0015	.0002	-.0015	.0001	-.0014	.2635	.0717

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0009	.0035	.0008	-.0012	.0084	-.0018	98.57
SDev	.0010	.0011	.0013	.0019	.0063	.0024	.51
%RSD	121.7	31.28	163.0	159.0	75.28	133.0	.5158
#1	-.0016	.0027	-.0001	.0001	.0128	-.0001	98.21
#2	-.0001	.0043	.0017	-.0025	.0039	-.0034	98.93

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0008	-.0055	.0164	.0017	-.0034	.0000	.0000
SDev	.0012	.0059	.0006	.0012	.0043	.0006	.0000
%RSD	140.6	106.7	3.459	72.56	127.1	2051.	98.67
#1	.0017	-.0014	.0168	.0008	-.0003	.0005	.0000
#2	.0000	-.0097	.0160	.0026	-.0064	-.0004	.0000

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0011	.0000	-.0031	.0126	-.0004	-.0018	-.0002
SDev	.0002	.0003	.0051	.0639	.0002	.0032	.0002
%RSD	17.39	1043.	167.0	507.5	53.66	171.9	139.3
#1	-.0010	.0003	-.0067	-.0326	-.0002	.0004	-.0000
#2	-.0013	-.0002	.0006	.0578	-.0006	-.0041	-.0003

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0002	-.0004
SDev	.0002	.0006
%RSD	102.3	170.8
#1	.0004	-.0008
#2	.0001	.0001

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1654824	10000	--	--	--	--	--
SDev	8506.494	.0000000	--	--	--	--	--
%RSD	.5140423	.0000000	--	--	--	--	--
#1	1648809	10000	--	--	--	--	--
#2	1660839	10000	--	--	--	--	--

010928

Analysis Report 03/30/16 04:56:35 PM page 1

Method: DAILY2 Sample Name: 594181MS3 Operator:
Run Time: 03/30/16 16:51:42
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0602	2.076	2.158	.0433	1.994	.0514	2.031
SDev	.0000	.001	.005	.0007	.001	.0000	.000
%RSD	.0746	.0606	.2464	1.589	.0608	.0184	.0196
#1	.0602	2.076	2.162	.0428	1.993	.0514	2.031
#2	.0602	2.077	2.154	.0438	1.995	.0514	2.031

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	21.08	.0519	.5127	.1927	.2499	1.032	19.04
SDev	.14	.0000	.0004	.0003	.0004	.023	.03
%RSD	.6500	.0322	.0828	.1443	.1752	2.232	.1323
#1	21.18	.0519	.5124	.1925	.2495	1.015	19.02
#2	20.98	.0519	.5130	.1929	.2502	1.048	19.06

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0016	2.162	21.13	.5204	.0020	20.12	20.89
SDev	.0010	.002	.02	.0001	.0007	.20	.00
%RSD	58.94	.0949	.0883	.0275	35.62	1.013	.0157
#1	.0010	2.163	21.11	.5203	.0015	19.97	20.89
#2	.0023	2.160	21.14	.5205	.0025	20.26	20.89

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.4885	.5355	.5285	-.0016	2.097	.5313	98.09
SDev	.0006	.0041	.0007	.0079	.008	.0019	.31
%RSD	.1336	.7715	.1334	490.9	.4029	.3546	.3122
#1	.4890	.5384	.5290	-.0072	2.103	.5326	97.87
#2	.4881	.5326	.5280	.0040	2.091	.5300	98.30

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.232	2.225	.0802	.5303	2.225	.0016	2.071
SDev	.001	.006	.0015	.0019	.004	.0005	.004
%RSD	.0486	.2583	1.874	.3479	.1883	29.66	.2030
#1	2.232	2.229	.0791	.5316	2.228	.0020	2.068
#2	2.231	2.221	.0813	.5290	2.222	.0013	2.074

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0110	.0001	2.136	-.5786	.5063	.0056	-.0006
SDev	.0000	.0001	.004	.0334	.0007	.0003	.0001
%RSD	.0336	126.3	.1742	5.766	.1373	4.698	9.827
#1	-.0110	.0000	2.133	-.6022	.5068	.0054	-.0005
#2	-.0110	.0001	2.138	-.5550	.5058	.0058	-.0006

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.5347	1.943
SDev	.0004	.018
%RSD	.0721	.9182
#1	.5350	1.955
#2	.5345	1.930

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1646800	10000	--	--	--	--	--
SDev	5055.106	.0000000	--	--	--	--	--
%RSD	.3069655	.0000000	--	--	--	--	--
#1	1643225	10000	--	--	--	--	--
#2	1650374	10000	--	--	--	--	--

010930

Analysis Report 03/30/16 05:01:43 PM page 1

Method: DAILY2 Sample Name: 594181MS4 Operator:
Run Time: 03/30/16 16:56:49
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1009	.1774	.1072	.1764	.0999	.1020	.0977
SDev	.0013	.0077	.0042	.0021	.0000	.0000	.0054
%RSD	1.236	4.319	3.915	1.190	.0438	.0338	5.512
#1	.1018	.1828	.1101	.1749	.0999	.1019	.1015
#2	.1000	.1720	.1042	.1779	.0999	.1020	.0939

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1338	.1047	.1012	.1015	.1018	.1205	.0710
SDev	.0008	.0003	.0003	.0004	.0001	.0215	.0032
%RSD	.5811	.2464	.2433	.3710	.1262	17.88	4.490
#1	.1344	.1049	.1013	.1012	.1019	.1053	.0733
#2	.1333	.1045	.1010	.1018	.1017	.1358	.0688

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0782	.0811	.1098	.1039	.1055	2.080	.4466
SDev	.0004	.0006	.0064	.0001	.0004	.042	.0037
%RSD	.4773	.7445	5.818	.0712	.4170	2.030	.8290
#1	.0784	.0815	.1143	.1039	.1052	2.051	.4440
#2	.0779	.0807	.1052	.1040	.1058	2.110	.4492

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0992	.1073	.1010	.0945	.1454	.1039	101.0
SDev	.0007	.0014	.0009	.0007	.0196	.0028	.6
%RSD	.6916	1.265	.9386	.7705	13.49	2.690	.5662
#1	.0997	.1063	.1003	.0950	.1593	.1059	100.6
#2	.0987	.1082	.1016	.0940	.1316	.1019	101.4

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1138	.1106	.1516	.1030	.1115	.0952	.1035
SDev	.0018	.0014	.0012	.0011	.0015	.0015	.0000
%RSD	1.621	1.227	.8000	1.052	1.361	1.581	.0306
#1	.1151	.1116	.1525	.1022	.1126	.0962	.1035
#2	.1125	.1096	.1508	.1037	.1105	.0941	.1035

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1011	.0962	.1012	.0625	.0987	.1036	.0995
SDev	.0014	.0001	.0043	.0005	.0009	.0019	.0003
%RSD	1.338	.0517	4.279	.7724	.8843	1.786	.2583
#1	.1020	.0962	.1043	.0622	.0993	.1050	.0997
#2	.1001	.0961	.0981	.0629	.0981	.1023	.0993

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.1084	.0959
SDev	.0005	.0004
%RSD	.4988	.4718
#1	.1088	.0962
#2	.1081	.0956

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1695648	10000	--	--	--	--	--
SDev	9471.695	.0000000	--	--	--	--	--
%RSD	.5585884	.0000000	--	--	--	--	--
#1	1688951	10000	--	--	--	--	--
#2	1702346	10000	--	--	--	--	--

010932

Analysis Report 03/30/16 05:06:50 PM page 1

Method: DAILY2 Sample Name: CCV Operator:
Run Time: 03/30/16 17:01:57
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.028	10.12	5.292	5.145	9.695	1.022	4.985
SDev	.001	.00	.007	.057	.011	.000	.005
%RSD	.0939	.0041	.1245	1.099	.1172	.0008	.0974
#1	1.028	10.11	5.297	5.105	9.687	1.022	4.988
#2	1.027	10.12	5.287	5.185	9.703	1.022	4.981
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.100	11.00	5.500	5.500	11.00	1.100	5.500
Low	.9000	9.000	4.500	4.500	9.000	.9000	4.500

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.27	1.024	5.039	1.934	1.970	9.816	19.42
SDev	.02	.001	.005	.001	.001	.018	.08
%RSD	.0976	.1087	.1028	.0385	.0495	.1811	.4255
#1	20.28	1.023	5.035	1.934	1.971	9.829	19.36
#2	20.25	1.025	5.042	1.933	1.970	9.804	19.48
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.00	1.100	5.500	2.200	2.200	11.00	22.00
Low	18.00	.9000	4.500	1.800	1.800	9.000	18.00

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.985	5.187	20.26	1.018	4.971	28.96	29.80
SDev	.001	.014	.02	.001	.003	.22	.08
%RSD	.0299	.2716	.1197	.0827	.0700	.7625	.2523
#1	4.984	5.177	20.24	1.018	4.973	28.80	29.75
#2	4.986	5.197	20.28	1.019	4.968	29.12	29.85
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.500	5.500	22.00	1.100	5.500	33.00	33.00
Low	4.500	4.500	18.00	.9000	4.500	27.00	27.00

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	4.845	5.028	5.016	.9564	1.097	1.023	98.06
SDev	.002	.013	.017	.0052	.005	.005	.41
%RSD	.0326	.2600	.3421	.5468	.4145	.5270	.4163
#1	4.846	5.019	5.004	.9601	H1.100	1.027	98.35
#2	4.844	5.038	5.028	.9527	1.094	1.019	97.77
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	5.500			1.100	1.100	1.100	
Low	4.500			.9000	.9000	.9000	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.233	5.267	4.969	5.015	5.250	5.064	5.028
SDev	.023	.031	.003	.016	.028	.001	.003
%RSD	.4462	.5895	.0682	.3146	.5419	.0227	.0514
#1	5.217	5.245	4.971	5.004	5.230	5.063	5.030
#2	5.250	5.289	4.966	5.026	5.271	5.065	5.027
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			5.500	5.500	5.500	5.500	5.500
Low			4.500	4.500	4.500	4.500	4.500

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9966	4.881	5.211	5.011	4.991	1.037	4.914
SDev	.0040	.002	.001	.069	.001	.001	.001
%RSD	.4004	.0310	.0099	1.370	.0283	.0786	.0203
#1	.9937	4.882	5.212	4.962	4.990	1.036	4.913
#2	.9994	4.879	5.211	5.059	4.992	1.037	4.915
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.100	5.500	5.500	5.500	5.500	1.100	5.500
Low	.9000	4.500	4.500	4.500	4.500	.9000	4.500

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	1.053	4.830
SDev	.001	.022
%RSD	.0881	.4479
#1	1.052	4.845
#2	1.054	4.815
Errors	LC Pass	LC Pass
High	1.100	5.500
Low	.9000	4.500

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1646302	10000	--	--	--	--	--
SDev	6819.338	.0000000	--	--	--	--	--
%RSD	.4142215	.0000000	--	--	--	--	--
#1	1651124	10000	--	--	--	--	--
#2	1641480	10000	--	--	--	--	--

010935

Analysis Report 03/30/16 05:11:57 PM page 1

Method: DAILY2 Sample Name: CCB Operator:
Run Time: 03/30/16 17:07:04
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0006	-.0028	.0002	.0471	.0005	-.0000	-.0007
SDev	.0000	.0019	.0023	.0093	.0000	.0000	.0033
%RSD	6.419	69.99	1023.	19.75	5.671	146.2	469.6
#1	.0007	-.0041	-.0014	H.0537	.0005	-.0001	.0016
#2	.0006	-.0014	.0019	.0405	.0004	.0000	-.0031
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0050	.0500	.0050	.0500	.0050	.0050	.0100
Low	-.0050	-.0500	-.0050	-.0500	-.0050	-.0050	-.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0069	.0001	.0003	-.0004	-.0004	.0149	.0071
SDev	.0009	.0000	.0002	.0016	.0001	.0382	.0342
%RSD	12.61	30.80	61.87	411.9	19.76	257.1	480.3
#1	.0063	.0001	.0002	-.0015	-.0003	-.0122	-.0171
#2	.0075	.0001	.0004	.0007	-.0004	.0419	.0313
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0500	.0050	.0050	.0050	.0050	.0500	.1000
Low	-.0500	-.0050	-.0050	-.0050	-.0050	-.0500	-.1000

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0002	.0003	.0050	H.0181	.0010	H.0505	-.0026
SDev	.0032	.0001	.0054	.0000	.0004	.4689	.0087
%RSD	1958.	25.53	109.2	.2259	36.19	928.4	335.5
#1	-.0021	.0002	.0011	H.0180	.0012	L-.2810	-.0088
#2	.0025	.0004	.0088	H.0181	.0007	H.3821	.0036
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC High	LC Pass
High	.0050	.0050	.0500	.0050	.0050	.0500	.0500
Low	-.0050	-.0050	-.0500	-.0050	-.0050	-.0500	-.0500

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0003	-.0003	.0013	-.0011	H.0382	.0032	100.4
SDev	.0007	.0007	.0008	.0034	.0044	.0028	.2
%RSD	229.1	239.9	60.16	318.8	11.54	89.05	.1942
#1	-.0002	-.0007	.0008	-.0035	H.0413	.0052	100.5
#2	.0008	.0002	.0019	.0013	H.0350	.0012	100.2
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC High	LC Pass	NOCHECK
High	.0050			.0050	.0200	.0100	
Low	-.0050			-.0050	-.0200	-.0100	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0006	.0003	.0030	.0008	.0000	.0008	.0003
SDev	.0072	.0008	.0005	.0008	.0019	.0003	.0000
%RSD	1295.	275.1	17.96	94.02	8276.	32.28	4.386
#1	.0046	-.0003	.0026	.0003	.0013	.0010	.0003
#2	-.0057	.0009	.0033	.0013	-.0013	.0006	.0003
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			.0100	.0050	.0050	.0100	.0050
Low			-.0100	-.0050	-.0050	-.0100	-.0050

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0006	.0001	.0027	-.0067	-.0006	.0043	.0002
SDev	.0028	.0001	.0030	.1092	.0001	.0008	.0001
%RSD	499.9	70.38	112.4	1630.	11.58	18.55	28.42
#1	.0014	.0001	.0006	-.0839	-.0007	.0048	.0001
#2	-.0025	.0000	.0049	.0705	-.0006	.0037	.0002
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0100	.0050	.0100	.1000	.0050	.0100	.0050
Low	-.0100	-.0050	-.0100	-.1000	-.0050	-.0100	-.0050

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	-.0001	-.0007
SDev	.0000	.0018
%RSD	18.60	255.9
#1	-.0001	-.0020
#2	-.0001	.0006
Errors	LC Pass	LC Pass
High	.0050	.0050
Low	-.0050	-.0050

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1684818	10000	--	--	--	--	--
SDev	3167.131	.0000000	--	--	--	--	--
%RSD	.1879807	.0000000	--	--	--	--	--
#1	1687057	10000	--	--	--	--	--
#2	1682578	10000	--	--	--	--	--

Method: DAILY2 Sample Name: 594181AS Operator:
Run Time: 03/30/16 17:12:11
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0740	2.109	2.199	.0300	2.009	.0518	4.045
SDev	.0006	.014	.007	.0000	.002	.0000	.010
%RSD	.7721	.6689	.3003	.0955	.1221	.0505	.2477
#1	.0744	2.119	2.203	.0300	2.011	.0518	4.052
#2	.0736	2.099	2.194	.0300	2.007	.0518	4.037

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	21.49	.0530	.5194	.1973	.2535	1.020	19.82
SDev	.02	.0002	.0009	.0024	.0004	.032	.03
%RSD	.1042	.3308	.1816	1.236	.1580	3.098	.1530
#1	21.51	.0529	.5188	.1956	.2538	.9980	19.80
#2	21.47	.0531	.5201	.1991	.2532	1.043	19.84

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0009	4.190	21.47	.5281	.0009	20.44	21.54
SDev	.0033	.001	.02	.0002	.0008	.38	.02
%RSD	383.0	.0139	.1111	.0310	91.70	1.839	.0796
#1	-.0015	4.190	21.46	.5280	.0015	20.18	21.55
#2	.0032	4.191	21.49	.5282	.0003	20.71	21.53

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.4968	.5251	.5213	.0225	4.286	.5380	94.41
SDev	.0008	.0046	.0001	.0035	.051	.0042	.01
%RSD	.1630	.8693	.0188	15.33	1.183	.7753	.0112
#1	.4963	.5283	.5214	.0250	4.322	.5409	94.40
#2	.4974	.5219	.5212	.0201	4.251	.5350	94.42

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.274	2.278	.0915	.5221	2.275	.0040	4.089
SDev	.008	.005	.0017	.0016	.001	.0019	.002
%RSD	.3611	.2370	1.851	.3036	.0379	45.99	.0591
#1	2.268	2.282	.0927	.5232	2.275	.0053	4.087
#2	2.280	2.274	.0903	.5209	2.274	.0027	4.090

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0251	.0007	2.176	-.0243	.5116	.0089	-.0000
SDev	.0009	.0000	.002	.0925	.0007	.0046	.0001
%RSD	3.433	6.274	.1011	381.2	.1428	51.34	301.0
#1	-.0245	.0007	2.175	-.0896	.5111	.0121	-.0001
#2	-.0257	.0007	2.178	.0411	.5121	.0057	.0000

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.5438	3.967
SDev	.0000	.001
%RSD	.0003	.0220
#1	.5438	3.968
#2	.5438	3.967

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1585186	10000	--	--	--	--	--
SDev	209.3036	.0000000	--	--	--	--	--
%RSD	.0132037	.0000000	--	--	--	--	--
#1	1585038	10000	--	--	--	--	--
#2	1585334	10000	--	--	--	--	--

010940

Analysis Report 03/30/16 05:22:10 PM page 1

Method: DAILY2 Sample Name: 594182 Operator:
Run Time: 03/30/16 17:17:18
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0018	.0138	.0026	.0388	.0007	-.0000	.0051
SDev	.0002	.0026	.0005	.0006	.0001	.0000	.0005
%RSD	12.51	18.62	20.03	1.548	17.62	54.35	9.951
#1	.0016	.0120	.0023	.0383	.0008	-.0000	.0054
#2	.0019	.0156	.0030	.0392	.0006	-.0000	.0047

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0525	.0002	.0005	.0047	.0004	.0579	.0321
SDev	.0015	.0001	.0003	.0003	.0007	.0106	.0036
%RSD	2.777	42.59	71.72	6.226	166.5	18.31	11.09
#1	.0515	.0003	.0002	.0045	.0009	.0504	.0296
#2	.0536	.0002	.0007	.0049	-.0001	.0654	.0346

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0027	.0005	.0134	.0007	.0008	.5309	.2248
SDev	.0004	.0000	.0024	.0001	.0004	.0248	.0023
%RSD	15.67	6.683	17.91	13.84	44.34	4.674	1.033
#1	.0024	.0005	.0117	.0006	.0011	.5485	.2232
#2	.0030	.0004	.0151	.0008	.0006	.5134	.2265

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0007	-.0025	-.0013	.0014	.0729	.0036	99.67
SDev	.0004	.0022	.0011	.0054	.0453	.0047	.21
%RSD	55.72	89.78	90.38	389.3	62.06	133.0	.2084
#1	.0010	-.0040	-.0005	-.0024	.0409	.0002	99.52
#2	.0004	-.0009	-.0021	.0052	.1049	.0069	99.82

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0011	-.0002	.0345	-.0017	.0003	.0006	.0005
SDev	.0008	.0018	.0005	.0000	.0015	.0009	.0000
%RSD	67.04	949.7	1.413	2.003	587.1	143.9	3.801
#1	.0017	.0011	.0349	-.0016	.0013	.0012	.0005
#2	.0006	-.0015	.0342	-.0017	-.0008	-.0000	.0005

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0003	.0003	.0013	.0799	.0002	.0019	.0002
SDev	.0026	.0003	.0022	.0154	.0008	.0025	.0001
%RSD	779.9	103.0	161.9	19.29	447.4	128.5	65.36
#1	.0022	.0005	-.0002	.0690	.0008	.0002	.0003
#2	-.0015	.0001	.0029	.0908	-.0004	.0037	.0001

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0019	.0006
SDev	.0002	.0008
%RSD	12.44	130.8
#1	.0020	.0000
#2	.0017	.0011

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1673429	10000	--	--	--	--	--
SDev	3357.343	.0000000	--	--	--	--	--
%RSD	.2006265	.0000000	--	--	--	--	--
#1	1671055	10000	--	--	--	--	--
#2	1675803	10000	--	--	--	--	--

010942

Analysis Report 03/30/16 05:27:17 PM

Method: DAILY2 Sample Name: 594183 Operator:
Run Time: 03/30/16 17:22:24
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0009	.0115	.0004	.0385	.0002	-.0000	-.0019
SDev	.0007	.0005	.0011	.0011	.0001	.0000	.0034
%RSD	75.24	4.547	257.8	2.832	59.13	11.17	181.1
#1	.0014	.0111	.0012	.0393	.0003	-.0000	.0005
#2	.0004	.0119	-.0003	.0377	.0001	-.0001	-.0043

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0196	.0002	.0002	.0006	.0002	-.0042	.0022
SDev	.0014	.0001	.0000	.0003	.0008	.0010	.0167
%RSD	6.985	28.98	2.331	40.95	515.7	24.09	765.3
#1	.0187	.0002	.0002	.0008	.0007	-.0035	.0140
#2	.0206	.0002	.0002	.0004	-.0004	-.0049	-.0096

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0003	.0002	.0086	.0003	.0014	.2095	.2133
SDev	.0006	.0001	.0013	.0001	.0003	.0059	.0004
%RSD	196.1	18.29	15.57	40.19	17.69	2.823	.1668
#1	.0008	.0003	.0095	.0004	.0016	.2053	.2130
#2	-.0001	.0002	.0076	.0002	.0013	.2137	.2135

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0005	-.0007	.0006	.0004	.0183	.0045	100.4
SDev	.0006	.0051	.0020	.0004	.0580	.0036	.5
%RSD	114.2	758.8	368.1	99.37	317.2	79.61	.4791
#1	-.0001	-.0043	.0020	.0007	-.0227	.0020	100.1
#2	-.0009	.0030	-.0009	.0001	.0593	.0071	100.8

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0028	-.0023	.0440	.0001	-.0006	.0002	.0003
SDev	.0044	.0029	.0001	.0004	.0004	.0039	.0000
%RSD	159.8	126.0	.1560	241.0	74.85	1827.	6.705
#1	-.0004	-.0002	.0441	-.0001	-.0003	.0029	.0003
#2	.0059	-.0043	.0440	.0004	-.0009	-.0025	.0002

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0002	.0000	-.0019	.0107	-.0006	.0001	-.0000
SDev	.0015	.0002	.0001	.0283	.0004	.0002	.0001
%RSD	649.1	458.5	5.728	264.9	77.10	277.5	463.7
#1	.0013	.0002	-.0019	.0307	-.0003	-.0001	.0001
#2	-.0008	-.0001	-.0020	-.0093	-.0009	.0002	-.0001

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0009	.0000
SDev	.0001	.0000
%RSD	11.30	124.0
#1	.0010	.0000
#2	.0008	.0000

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1685768	10000	--	--	--	--	--
SDev	8043.340	.0000000	--	--	--	--	--
%RSD	.4771319	.0000000	--	--	--	--	--
#1	1680081	10000	--	--	--	--	--
#2	1691456	10000	--	--	--	--	--

010944

Analysis Report 03/30/16 05:32:24 PM page 1

Method: DAILY2 Sample Name: 594184 Operator:
Run Time: 03/30/16 17:27:31
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0006	.0072	-.0020	.0272	-.0000	-.0001	-.0068
SDev	.0011	.0043	.0012	.0006	.0001	.0000	.0071
%RSD	196.0	58.73	61.51	2.011	368.3	36.45	103.6
#1	.0002	.0102	-.0011	.0269	-.0001	-.0001	-.0018
#2	-.0014	.0042	-.0028	.0276	.0000	-.0001	-.0118

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0203	.0000	.0010	-.0010	-.0009	-.0088	-.0224
SDev	.0003	.0003	.0005	.0012	.0009	.0499	.0204
%RSD	1.544	1030.	47.86	115.5	94.64	564.2	91.12
#1	.0205	.0002	.0013	-.0018	-.0015	-.0441	-.0368
#2	.0201	-.0002	.0007	-.0002	-.0003	.0265	-.0080

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0021	.0001	.0017	.0000	.0003	-.1422	.1712
SDev	.0020	.0001	.0071	.0000	.0002	.2747	.0091
%RSD	93.54	65.38	425.0	35.28	59.00	193.1	5.330
#1	-.0035	.0000	.0067	.0000	.0005	-.3365	.1648
#2	-.0007	.0001	-.0033	.0001	.0002	.0520	.1777

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0014	.0046	-.0021	-.0015	.0412	.0034	100.9
SDev	.0001	.0023	.0002	.0004	.0469	.0031	.3
%RSD	7.379	50.80	8.774	30.84	113.7	90.53	.3151
#1	-.0013	.0062	-.0022	-.0018	.0081	.0012	100.7
#2	-.0015	.0029	-.0020	-.0011	.0744	.0056	101.1

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0062	-.0048	.0426	.0001	-.0012	-.0019	.0001
SDev	.0058	.0004	.0041	.0006	.0022	.0029	.0001
%RSD	93.23	8.879	9.691	461.4	191.4	152.2	84.95
#1	.0103	-.0045	.0456	.0006	.0004	.0001	.0002
#2	.0021	-.0051	.0397	-.0003	-.0027	-.0039	.0000

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0020	-.0001	-.0030	-.0700	-.0009	-.0005	-.0002
SDev	.0000	.0001	.0018	.0818	.0006	.0000	.0001
%RSD	.5086	65.45	59.05	116.8	60.79	1.979	25.70
#1	-.0020	-.0001	-.0018	-.1279	-.0013	-.0005	-.0003
#2	-.0020	-.0000	-.0043	-.0122	-.0005	-.0005	-.0002

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0005	.0006
SDev	.0003	.0025
%RSD	67.57	390.8
#1	.0007	-.0011
#2	.0003	.0024

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1694198	10000	--	--	--	--	--
SDev	5322.393	.0000000	--	--	--	--	--
%RSD	.3141540	.0000000	--	--	--	--	--
#1	1690435	10000	--	--	--	--	--
#2	1697962	10000	--	--	--	--	--

010946

Analysis Report 03/30/16 05:37:31 PM page 1

Method: DAILY2 Sample Name: ZZZZ Operator:
Run Time: 03/30/16 17:32:38
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0007	-.0033	-.0030	.0035	.0002	-.0001	-.0020
SDev	.0020	.0107	.0017	.0015	.0001	.0000	.0084
%RSD	292.9	323.5	58.64	43.08	53.07	53.08	427.6
#1	-.0007	-.0109	-.0017	.0024	.0001	-.0001	-.0079
#2	.0021	.0043	-.0042	.0045	.0002	-.0000	.0040

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0028	-.0001	.0003	.0001	-.0000	-.0105	.0084
SDev	.0015	.0003	.0013	.0021	.0005	.0309	.0448
%RSD	53.18	382.8	483.5	2365.	1502.	293.7	533.9
#1	.0017	-.0003	-.0006	-.0014	-.0004	-.0324	-.0233
#2	.0038	.0001	.0012	.0016	.0003	.0113	.0400

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0010	.0001	.0047	.0011	.0012	.1516	-.0003
SDev	.0039	.0001	.0096	.0001	.0014	.5476	.0106
%RSD	389.2	121.6	202.9	4.246	117.6	361.3	4077.
#1	-.0018	.0000	-.0021	.0011	.0021	-.2356	-.0078
#2	.0038	.0002	.0115	.0011	.0002	.5387	.0073

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0006	.0007	.0013	-.0005	.0292	.0015	100.7
SDev	.0009	.0053	.0011	.0049	.0382	.0040	.4
%RSD	141.1	759.2	89.89	1035.	130.9	269.6	.3604
#1	.0000	.0044	.0005	-.0040	.0022	.0043	101.0
#2	.0013	-.0030	.0020	.0030	.0562	-.0013	100.4

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0010	-.0029	.0038	.0011	-.0023	.0007	.0001
SDev	.0058	.0031	.0065	.0010	.0001	.0015	.0001
%RSD	556.7	106.9	169.0	94.22	4.917	220.9	99.00
#1	.0031	-.0051	-.0007	.0018	-.0023	-.0004	.0000
#2	-.0052	-.0007	.0084	.0004	-.0022	.0017	.0002

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0002	.0002	-.0034	.0240	.0002	.0014	.0000
SDev	.0026	.0001	.0047	.1281	.0001	.0040	.0001
%RSD	1193.	37.00	137.3	533.6	29.92	293.2	252.9
#1	.0016	.0002	-.0001	-.0666	.0002	-.0015	.0001
#2	-.0020	.0001	-.0068	.1146	.0002	.0042	-.0000

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	-.0000	-.0004
SDev	.0002	.0013
%RSD	644.3	335.7
#1	-.0002	-.0013
#2	.0001	.0005

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1690834	10000	--	--	--	--	--
SDev	6039.399	.0000000	--	--	--	--	--
%RSD	.3571847	.0000000	--	--	--	--	--
#1	1695104	10000	--	--	--	--	--
#2	1686563	10000	--	--	--	--	--

Analysis Report 03/30/16 05:42:38 PM page 1

Method: DAILY2 Sample Name: CRI Operator:
Run Time: 03/30/16 17:37:45
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0108	.1018	.0143	.0428	.0050	.0050	.0218
SDev	.0006	.0009	.0000	.0003	.0001	.0000	.0073
%RSD	5.649	.9095	.0440	.7430	1.678	.1283	33.48
#1	.0113	.1025	.0143	.0426	.0051	.0050	.0270
#2	.0104	.1012	.0143	.0430	.0049	.0050	.0167
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0150	.1500	.0150	.0600	.0075	.0075	.0300
Low	.0050	.0500	.0050	.0200	.0025	.0025	.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1072	.0052	.0053	.0048	.0045	.0822	.3005
SDev	.0010	.0003	.0007	.0002	.0009	.0034	.0064
%RSD	.9117	5.096	12.46	3.432	20.47	4.174	2.130
#1	.1079	.0054	.0058	.0049	.0052	.0846	.3051
#2	.1065	.0050	.0049	.0047	.0039	.0798	.2960
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.1500	.0075	.0075	.0075	.0075	.1500	.7500
Low	.0500	.0025	.0025	.0025	.0025	.0500	.2500

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0099	.0082	.0531	.0053	.0059	.2261	.1882
SDev	.0003	.0000	.0029	.0001	.0013	.0384	.0028
%RSD	2.724	.2655	5.398	1.749	21.31	16.99	1.501
#1	.0097	.0082	.0551	.0054	.0068	.1989	.1862
#2	.0101	.0082	.0510	.0052	.0050	.2532	.1902
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0150	.0150	.1000	.0075	.0075	.5000	.5000
Low	.0050	.0050	.0250	.0025	.0025	.1250	.1250

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0046	.0054	.0058	.0186	H.0883	.0251	99.15
SDev	.0005	.0005	.0011	.0046	.0023	.0004	.29
%RSD	10.38	9.569	18.75	24.83	2.556	1.809	.2900
#1	.0049	.0057	.0050	.0218	H.0899	.0248	98.94
#2	.0043	.0050	.0066	.0153	H.0867	.0254	99.35
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC High	LC Pass	NOCHECK
High	.0075			.0300	.0750	.0300	
Low	.0025			.0100	.0250	.0100	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0061	.0106	.1029	.0056	.0091	.0116	.0053
SDev	.0032	.0052	.0014	.0006	.0024	.0035	.0000
%RSD	52.50	48.62	1.332	9.780	26.06	29.74	.3748
#1	.0084	.0070	.1019	.0053	.0074	.0092	.0053
#2	.0038	.0143	.1039	.0060	.0108	.0141	.0053
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			.1500	.0075	.0150	.0150	.0075
Low			.0500	.0025	.0050	.0050	.0025

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0202	.0046	.0191	.1833	.0044	.0208	.0050
SDev	.0023	.0002	.0003	.0104	.0005	.0007	.0001
%RSD	11.17	3.837	1.689	5.662	11.64	3.377	.9713
#1	.0218	.0048	.0193	.1760	.0048	.0203	.0050
#2	.0186	.0045	.0189	.1906	.0041	.0213	.0049
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0300	.0075	.0300	.3000	.0075	.0300	.0075
Low	.0100	.0025	.0100	.1000	.0025	.0100	.0025

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0052	.0040
SDev	.0001	.0008
%RSD	2.952	21.27
#1	.0051	.0046
#2	.0053	.0034
Errors	LC Pass	LC Pass
High	.0075	.0075
Low	.0025	.0025

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1664595	10000	--	--	--	--	--
SDev	4980.860	.0000000	--	--	--	--	--
%RSD	.2992235	.0000000	--	--	--	--	--
#1	1661073	10000	--	--	--	--	--
#2	1668117	10000	--	--	--	--	--

010951

Analysis Report 03/30/16 05:47:45 PM page 1

Method: DAILY2 Sample Name: CRI-N Operator:
Run Time: 03/30/16 17:42:52
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0218	.2090	.0246	.0848	.0104	.0101	.0408
SDev	.0003	.0010	.0004	.0023	.0001	.0001	.0018
%RSD	1.591	.4569	1.697	2.665	1.418	.5459	4.439
#1	.0216	.2084	.0243	.0832	.0103	.0101	.0421
#2	.0220	.2097	.0249	.0864	.0105	.0102	.0395
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0260	.2600	.0260	.1040	.0130	.0130	.0520
Low	.0140	.1400	.0140	.0560	.0070	.0070	.0280

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2093	.0106	.0106	.0098	.0094	.1950	L.6351
SDev	.0005	.0003	.0003	.0022	.0008	.0427	.0398
%RSD	.2530	3.188	3.030	22.23	8.232	21.88	6.262
#1	.2090	.0104	.0108	.0082	.0088	.1648	L.6070
#2	.2097	.0109	.0104	.0113	.0099	.2251	L.6633
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low
High	.2600	.0130	.0130	.0130	.0130	.2600	1.300
Low	.1400	.0070	.0070	.0070	.0070	.1400	.7000

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0203	.0170	.1057	.0104	.0110	.5958	.4041
SDev	.0038	.0003	.0013	.0001	.0007	.5512	.0134
%RSD	18.62	1.478	1.187	1.071	6.400	92.50	3.307
#1	.0176	.0168	.1066	.0104	.0105	L.2061	.3946
#2	.0230	.0171	.1049	.0105	.0115	H.9856	.4135
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0260	.0260	.1300	.0130	.0130	.6500	.6500
Low	.0140	.0140	.0700	.0070	.0070	.3500	.3500

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0095	.0107	.0094	.0407	.0866	.0430	99.38
SDev	.0016	.0009	.0013	.0016	.0476	.0039	.18
%RSD	17.25	8.762	13.78	3.992	54.92	9.047	.1848
#1	.0083	.0100	.0103	.0418	L.0530	.0402	99.51
#2	.0106	.0113	.0085	.0395	.1202	.0457	99.25
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	.0130			.0520	.1300	.0520	
Low	.0070			.0280	.0700	.0280	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0260	.0194	.2080	.0098	.0216	.0221	.0106
SDev	.0009	.0016	.0003	.0006	.0008	.0026	.0000
%RSD	3.310	8.053	.1371	5.618	3.503	11.70	.0370
#1	.0266	.0183	.2082	.0102	.0211	.0203	.0106
#2	.0253	.0205	.2078	.0094	.0221	.0240	.0106
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			.2600	.0130	.0260	.0260	.0130
Low			.1400	.0070	.0140	.0140	.0070

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0382	.0091	.0391	.4267	.0092	.0432	.0098
SDev	.0008	.0001	.0053	.1229	.0005	.0001	.0001
%RSD	2.128	.5316	13.56	28.81	5.191	.2545	1.128
#1	.0388	.0091	.0428	.3398	.0089	.0431	.0097
#2	.0377	.0091	.0353	.5136	.0095	.0433	.0098
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0520	.0130	.0520	.5200	.0130	.0520	.0130
Low	.0280	.0070	.0280	.2800	.0070	.0280	.0070

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0105	.0099
SDev	.0000	.0019
%RSD	.2369	19.19
#1	.0105	.0086
#2	.0105	.0113
Errors	LC Pass	LC Pass
High	.0130	.0130
Low	.0070	.0070

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1668516	10000	--	--	--	--	--
SDev	2927.422	.0000000	--	--	--	--	--
%RSD	.1754506	.0000000	--	--	--	--	--
#1	1670586	10000	--	--	--	--	--
#2	1666446	10000	--	--	--	--	--

010954

Method: DAILY2 Sample Name: ICSA Operator:
Run Time: 03/30/16 17:47:59
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0017	475.2	-.0047	-.0261	.0026	-.0000	.0160
SDev	.0009	.3	.0027	.0029	.0001	.0000	.0037
%RSD	52.25	.0724	57.96	11.20	1.986	150.2	23.34
#1	-.0023	475.4	-.0028	-.0240	.0027	-.0000	.0133
#2	-.0010	474.9	-.0066	-.0281	.0026	.0000	.0186
Errors	NOCHECK	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High		600.0					
Low		400.0					

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	439.1	.0016	-.0033	-.0006	-.0023	191.1	-.0118
SDev	2.1	.0002	.0008	.0015	.0005	.9	.0341
%RSD	.4691	13.51	24.89	259.4	23.09	.4632	289.4
#1	437.7	.0015	-.0039	-.0016	-.0020	190.5	-.0359
#2	440.6	.0018	-.0027	.0005	-.0027	191.7	.0123
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	NOCHECK
High	600.0					240.0	
Low	400.0					160.0	

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0017	.0019	527.3	.0221	-.0012	.2595	.0340
SDev	.0026	.0001	.5	.0000	.0013	.3532	.0088
%RSD	154.4	4.548	.0881	.0319	109.0	136.1	25.81
#1	-.0035	.0018	527.0	.0221	-.0003	.0097	.0278
#2	.0002	.0019	527.7	.0221	-.0021	.5092	.0402
Errors	NOCHECK	NOCHECK	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High			600.0				
Low			400.0				

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0034	.0838	-.0358	.0824	.0353	.0040	89.97
SDev	.0008	.0046	.0021	.0021	.0047	.0003	.15
%RSD	23.72	5.443	5.890	2.526	13.23	8.145	.1715
#1	-.0028	.0871	-.0373	.0809	.0320	.0043	90.08
#2	-.0040	.0806	-.0343	.0839	.0386	.0038	89.86
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0010	-.0062	-.0012	.0041	-.0038	-.0064	.0039
SDev	.0089	.0001	.0035	.0001	.0030	.0016	.0000
%RSD	881.0	1.226	303.5	2.825	78.89	25.49	.3291
#1	-.0053	-.0063	-.0037	.0042	-.0059	-.0075	.0039
#2	.0073	-.0062	.0013	.0040	-.0017	-.0052	.0039
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0123	.0025	-.0083	.0701	-.0034	-.0006	-.0003
SDev	.0047	.0001	.0027	.0858	.0006	.0041	.0000
%RSD	38.39	4.477	32.27	122.4	17.54	643.2	1.602
#1	.0156	.0026	-.0102	.0094	-.0030	-.0036	-.0003
#2	.0089	.0024	-.0064	.1308	-.0038	.0023	-.0003
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	-.0063	-.0014
SDev	.0002	.0007
%RSD	2.489	50.66
#1	-.0064	-.0020
#2	-.0062	-.0009
Errors	NOCHECK	NOCHECK
High		
Low		

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1510677	10000	--	--	--	--	--
SDev	2544.170	.0000000	--	--	--	--	--
%RSD	.1684126	.0000000	--	--	--	--	--
#1	1512476	10000	--	--	--	--	--
#2	1508878	10000	--	--	--	--	--

010957

Analysis Report 03/30/16 05:57:59 PM page 1

Method: DAILY2 Sample Name: ICSAB Operator:
Run Time: 03/30/16 17:53:06
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.089	474.6	1.100	.9951	.5161	.5144	.0234
SDev	.003	1.1	.003	.0066	.0013	.0006	.0043
%RSD	.2442	.2380	.2357	.6626	.2476	.1153	18.50
#1	1.091	475.4	1.098	.9998	.5170	.5148	.0203
#2	1.087	473.8	1.101	.9904	.5152	.5140	.0264
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK
High	1.200	600.0	1.200	1.200	.6000	.6000	
Low	.8000	400.0	.8000	.8000	.4000	.4000	

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	440.4	1.009	.4941	.4810	.5278	191.4	.0002
SDev	.5	.003	.0001	.0006	.0009	.1	.0207
%RSD	.1059	.3231	.0225	.1242	.1630	.0422	8492.
#1	440.8	1.006	.4942	.4805	.5285	191.5	-.0144
#2	440.1	1.011	.4940	.4814	.5272	191.4	.0149
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK
High	600.0	1.200	.6000	.6000	.6000	240.0	
Low	400.0	.8000	.4000	.4000	.4000	160.0	

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0003	H1.216	528.6	.5308	1.054	.3641	.0358
SDev	.0020	.000	.6	.0002	.000	.1773	.0076
%RSD	628.0	.0375	.1053	.0320	.0072	48.71	21.22
#1	-.0017	H1.217	529.0	.5306	1.054	.2387	.0305
#2	.0011	H1.216	528.2	.5309	1.054	.4895	.0412
Errors	NOCHECK	LC High	LC Pass	LC Pass	LC Pass	NOCHECK	NOCHECK
High		1.200	600.0	.6000	1.200		
Low		.8000	400.0	.4000	.8000		

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.9511	1.092	.9740	.0870	.0192	1.079	89.56
SDev	.0029	.002	.0035	.0003	.0865	.002	.21
%RSD	.3092	.1649	.3564	.3131	450.6	.2188	.2365
#1	.9532	1.093	.9716	.0872	-.0419	1.080	89.41
#2	.9490	1.091	.9765	.0868	.0803	1.077	89.71
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	NOCHECK
High	1.200					1.200	
Low	.8000					.8000	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.058	1.053	1.017	1.012	1.053	1.014	1.043
SDev	.006	.003	.000	.002	.004	.000	.000
%RSD	.5572	.3294	.0346	.1688	.4056	.0138	.0022
#1	1.054	1.050	1.017	1.011	1.050	1.014	1.043
#2	1.062	1.055	1.017	1.014	1.056	1.014	1.043
Errors	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass
High				1.200	1.200	1.200	1.200
Low				.8000	.8000	.8000	.8000

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0106	.9559	1.002	1.077	.4995	.0092	-.0002
SDev	.0034	.0002	.001	.073	.0004	.0041	.0000
%RSD	32.20	.0215	.0501	6.803	.0850	44.64	2.052
#1	.0130	.9560	1.002	1.025	.4998	.0063	-.0002
#2	.0082	.9558	1.002	1.129	.4992	.0121	-.0002
Errors	NOCHECK	LC Pass	LC Pass	NOCHECK	LC Pass	NOCHECK	NOCHECK
High		1.200	1.200		.6000		
Low		.8000	.8000		.4000		

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	1.011	.9517
SDev	.001	.0006
%RSD	.0573	.0622
#1	1.012	.9513
#2	1.011	.9522
Errors	LC Pass	NOCHECK
High	1.200	
Low	.8000	

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1503804	10000	--	--	--	--	--
SDev	3554.626	.0000000	--	--	--	--	--
%RSD	.2363757	.0000000	--	--	--	--	--
#1	1501290	10000	--	--	--	--	--
#2	1506317	10000	--	--	--	--	--

010960

Analysis Report 03/30/16 06:03:06 PM page 1

Method: DAILY2 Sample Name: CCV Operator:
Run Time: 03/30/16 17:58:13
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.026	10.14	5.319	5.118	9.622	1.024	4.965
SDev	.001	.03	.000	.053	.002	.000	.012
%RSD	.1319	.2653	.0051	1.028	.0212	.0037	.2372
#1	1.025	10.16	5.319	5.080	9.621	1.024	4.957
#2	1.027	10.13	5.320	5.155	9.624	1.024	4.973
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.100	11.00	5.500	5.500	11.00	1.100	5.500
Low	.9000	9.000	4.500	4.500	9.000	.9000	4.500

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.24	1.028	5.044	1.933	1.966	9.805	19.36
SDev	.06	.001	.003	.000	.000	.007	.01
%RSD	.2855	.1097	.0565	.0168	.0250	.0723	.0443
#1	20.28	1.028	5.042	1.933	1.966	9.800	19.37
#2	20.20	1.029	5.046	1.933	1.967	9.810	19.36
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.00	1.100	5.500	2.200	2.200	11.00	22.00
Low	18.00	.9000	4.500	1.800	1.800	9.000	18.00

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.968	5.192	20.35	1.019	4.991	29.01	29.76
SDev	.007	.021	.01	.001	.000	.33	.13
%RSD	.1360	.3965	.0716	.1038	.0099	1.146	.4389
#1	4.963	5.206	20.34	1.020	4.990	28.77	29.85
#2	4.973	5.177	20.36	1.018	4.991	29.24	29.67
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.500	5.500	22.00	1.100	5.500	33.00	33.00
Low	4.500	4.500	18.00	.9000	4.500	27.00	27.00

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	4.847	5.047	5.019	.9495	H1.139	1.028	98.62
SDev	.006	.001	.002	.0038	.013	.002	.18
%RSD	.1224	.0242	.0401	.3992	1.167	.2067	.1809
#1	4.851	5.047	5.021	.9468	H1.130	1.027	98.50
#2	4.843	5.046	5.018	.9522	H1.148	1.030	98.75
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC High	LC Pass	NOCHECK
High	5.500			1.100	1.100	1.100	
Low	4.500			.9000	.9000	.9000	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.249	5.267	4.960	5.023	5.256	5.090	5.008
SDev	.005	.012	.003	.002	.006	.004	.005
%RSD	.0878	.2215	.0631	.0348	.1186	.0778	.0937
#1	5.252	5.259	4.958	5.025	5.251	5.092	5.005
#2	5.246	5.275	4.962	5.022	5.260	5.087	5.011
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			5.500	5.500	5.500	5.500	5.500
Low			4.500	4.500	4.500	4.500	4.500

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9971	4.881	5.226	4.991	4.992	1.049	4.891
SDev	.0017	.003	.000	.086	.004	.001	.007
%RSD	.1717	.0556	.0002	1.722	.0811	.0778	.1529
#1	.9959	4.879	5.226	4.930	4.995	1.049	4.896
#2	.9983	4.883	5.226	5.052	4.990	1.050	4.886
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.100	5.500	5.500	5.500	5.500	1.100	5.500
Low	.9000	4.500	4.500	4.500	4.500	.9000	4.500

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	1.058	4.818
SDev	.001	.024
%RSD	.1064	.4989
#1	1.059	4.835
#2	1.058	4.801
Errors	LC Pass	LC Pass
High	1.100	5.500
Low	.9000	4.500

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1655838	10000	--	--	--	--	--
SDev	2940.857	.0000000	--	--	--	--	--
%RSD	.1776054	.0000000	--	--	--	--	--
#1	1653758	10000	--	--	--	--	--
#2	1657917	10000	--	--	--	--	--

010963

Analysis Report 03/30/16 06:08:13 PM page 1

Method: DAILY2 Sample Name: CCB Operator:
Run Time: 03/30/16 18:03:20
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0009	.0180	.0001	H.0519	.0004	-.0000	-.0037
SDev	.0016	.0077	.0039	.0097	.0001	.0000	.0043
%RSD	178.4	42.55	7541.	18.58	24.61	151.6	115.5
#1	-.0002	.0126	-.0027	H.0587	.0004	-.0000	-.0067
#2	.0020	.0235	.0028	.0451	.0005	.0000	-.0007
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass
High	.0050	.0500	.0050	.0500	.0050	.0050	.0100
Low	-.0050	-.0500	-.0050	-.0500	-.0050	-.0050	-.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0225	.0002	.0001	.0003	-.0005	.0096	.0039
SDev	.0020	.0001	.0009	.0012	.0009	.0156	.0251
%RSD	8.768	52.19	1109.	384.6	170.5	162.6	637.2
#1	.0239	.0001	-.0006	-.0005	-.0011	-.0014	-.0138
#2	.0211	.0003	.0007	.0012	.0001	.0206	.0217
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0500	.0050	.0050	.0050	.0050	.0500	.1000
Low	-.0500	-.0050	-.0050	-.0050	-.0050	-.0500	-.1000

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0009	.0003	.0285	.0002	.0002	H.1609	-.0001
SDev	.0018	.0001	.0086	.0001	.0001	.3701	.0058
%RSD	202.7	21.57	30.07	38.59	71.12	230.1	5014.
#1	-.0004	.0002	.0225	.0002	.0003	L-.1008	-.0042
#2	.0022	.0003	.0346	.0003	.0001	H.4226	.0040
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	.0050	.0050	.0500	.0050	.0050	.0500	.0500
Low	-.0050	-.0050	-.0500	-.0050	-.0050	-.0500	-.0500

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0001	.0022	-.0007	.0022	.0141	.0055	100.8
SDev	.0008	.0019	.0038	.0051	.0172	.0015	.2
%RSD	589.6	85.44	524.7	235.9	122.2	27.55	.2184
#1	-.0007	.0035	-.0034	-.0015	H.0263	.0044	101.0
#2	.0005	.0009	.0020	H.0058	.0019	.0065	100.7
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	.0050			.0050	.0200	.0100	
Low	-.0050			-.0050	-.0200	-.0100	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0075	-.0027	.0054	.0003	.0007	-.0015	.0003
SDev	.0074	.0042	.0072	.0019	.0003	.0006	.0001
%RSD	99.59	156.4	132.4	763.6	43.83	41.05	24.54
#1	.0127	-.0056	.0003	-.0011	.0005	-.0019	.0003
#2	.0022	.0003	H.0105	.0016	.0009	-.0010	.0004
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			.0100	.0050	.0050	.0100	.0050
Low			-.0100	-.0050	-.0050	-.0100	-.0050

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0005	.0001	-.0015	.0195	.0000	-.0001	.0001
SDev	.0005	.0001	.0040	.0784	.0004	.0028	.0002
%RSD	86.33	274.4	271.4	403.0	6121.	5302.	257.3
#1	-.0002	-.0001	-.0043	-.0360	-.0003	.0019	-.0001
#2	-.0009	.0002	.0014	.0749	.0003	-.0020	.0002
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0100	.0050	.0100	.1000	.0050	.0100	.0050
Low	-.0100	-.0050	-.0100	-.1000	-.0050	-.0100	-.0050

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	-.0001	-.0002
SDev	.0002	.0009
%RSD	222.1	541.0
#1	-.0002	-.0008
#2	.0000	.0005
Errors	LC Pass	LC Pass
High	.0050	.0050
Low	-.0050	-.0050

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1693154	10000	--	--	--	--	--
SDev	3729.281	.0000000	--	--	--	--	--
%RSD	.2202565	.0000000	--	--	--	--	--
#1	1695791	10000	--	--	--	--	--
#2	1690517	10000	--	--	--	--	--

010966

Analysis Report 03/30/16 06:18:59 PM page 1

Method: DAILY2 Sample Name: PB16A27KE2 DF100 Operator:
Run Time: 03/30/16 18:14:06
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0010	.0050	-.0005	37.86	.0002	-.0000	-.0047
SDev	.0005	.0048	.0021	.28	.0000	.0001	.0042
%RSD	52.71	95.95	398.6	.7442	18.52	156.0	89.03
#1	.0013	.0085	-.0020	37.66	.0002	-.0001	-.0017
#2	.0006	.0016	.0009	38.06	.0003	.0000	-.0077

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0126	.0001	.0006	.0001	.0003	-.0194	.0069
SDev	.0013	.0000	.0006	.0016	.0009	.0465	.0416
%RSD	10.59	3.264	106.6	1476.	348.4	239.5	606.5
#1	.0136	.0001	.0010	-.0010	-.0004	-.0523	-.0226
#2	.0117	.0001	.0001	.0012	.0009	.0135	.0363

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0002	13.28	.0116	.0002	.0008	.0609	-.0019
SDev	.0036	.01	.0063	.0001	.0002	.6746	.0108
%RSD	1891.	.0770	53.88	43.07	27.35	1108.	584.5
#1	-.0023	13.27	.0161	.0003	.0007	-.4162	-.0095
#2	.0027	13.29	.0072	.0002	.0010	.5379	.0058

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0009	.0035	-.0024	-.0044	.0394	.0109	99.68
SDev	.0005	.0019	.0016	.0002	.0498	.0055	.36
%RSD	56.14	53.70	66.28	3.644	126.5	50.83	.3647
#1	-.0013	.0021	-.0013	-.0045	.0746	.0070	99.94
#2	-.0006	.0048	-.0035	-.0043	.0042	.0148	99.42

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0072	-.0040	.0093	-.0004	-.0003	.0002	.0001
SDev	.0007	.0048	.0029	.0004	.0029	.0013	.0001
%RSD	10.17	118.6	30.58	100.9	1103.	597.5	34.33
#1	.0067	-.0006	.0113	-.0001	.0018	-.0007	.0002
#2	.0077	-.0074	.0073	-.0007	-.0023	.0012	.0001

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0011	.0001	-.0031	.0263	-.0002	.0007	.0000
SDev	.0030	.0001	.0020	.1334	.0001	.0020	.0001
%RSD	270.2	137.0	64.59	506.4	26.75	264.0	593.5
#1	.0033	.0000	-.0045	-.0680	-.0002	-.0006	-.0001
#2	-.0010	.0001	-.0017	.1207	-.0003	.0021	.0001

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0000	-.0011
SDev	.0000	.0022
%RSD	272.4	195.0
#1	.0000	-.0027
#2	-.0000	.0004

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1673514	10000	--	--	--	--	--
SDev	6108.695	.0000000	--	--	--	--	--
%RSD	.3650220	.0000000	--	--	--	--	--
#1	1677834	10000	--	--	--	--	--
#2	1669195	10000	--	--	--	--	--

010968

Analysis Report 03/30/16 06:24:06 PM page 1

Method: DAILY2 Sample Name: LCS16A27KE3 DF100 Operator:
Run Time: 03/30/16 18:19:13
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0005	.7304	.0018	37.46	.0086	-.0000	-.0010
SDev	.0011	.0036	.0017	.19	.0001	.0000	.0023
%RSD	232.9	.4963	96.76	.5154	.8343	.9211	232.4
#1	.0012	.7329	.0030	37.32	.0086	-.0000	.0006
#2	-.0003	.7278	.0006	37.60	.0085	-.0000	-.0027

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0791	.0001	.0007	.0019	-.0003	.1633	.2852
SDev	.0017	.0001	.0006	.0004	.0002	.0014	.0034
%RSD	2.116	37.99	81.82	19.73	63.65	.8395	1.188
#1	.0803	.0002	.0012	.0017	-.0004	.1643	.2828
#2	.0780	.0001	.0003	.0022	-.0001	.1624	.2876

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0016	12.92	.0235	.0042	-.0001	.5100	.3653
SDev	.0002	.03	.0051	.0001	.0010	.1317	.0008
%RSD	11.98	.2065	21.64	1.305	1646.	25.83	.2145
#1	.0015	12.91	.0271	.0043	.0006	.4168	.3648
#2	.0017	12.94	.0199	.0042	-.0007	.6031	.3659

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0006	.0017	-.0031	-.0026	.0708	.0079	99.32
SDev	.0009	.0024	.0016	.0050	.0347	.0070	.05
%RSD	148.6	140.2	50.91	197.0	48.93	88.11	.0471
#1	.0000	.0000	-.0020	.0010	.0953	.0030	99.35
#2	-.0012	.0034	-.0042	-.0061	.0463	.0129	99.29

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0063	-.0046	2.972	-.0015	-.0010	-.0011	.0008
SDev	.0013	.0002	.068	.0003	.0003	.0014	.0000
%RSD	19.95	4.820	2.290	16.87	28.64	120.7	4.300
#1	.0054	-.0044	2.924	-.0013	-.0011	-.0002	.0008
#2	.0072	-.0047	3.020	-.0017	-.0008	-.0021	.0007

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0030	.0129	-.0032	.0580	-.0008	.0019	.0002
SDev	.0020	.0001	.0005	.0042	.0001	.0047	.0001
%RSD	66.21	.8196	16.68	7.158	15.76	249.2	46.95
#1	-.0016	.0130	-.0028	.0551	-.0007	.0052	.0003
#2	-.0045	.0128	-.0036	.0609	-.0009	-.0014	.0002

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0004	.0024
SDev	.0002	.0003
%RSD	41.05	10.55
#1	.0005	.0026
#2	.0003	.0022

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1667452	10000	--	--	--	--	--
SDev	864.0845	.0000000	--	--	--	--	--
%RSD	.0518207	.0000000	--	--	--	--	--
#1	1668063	10000	--	--	--	--	--
#2	1666841	10000	--	--	--	--	--

010970

Analysis Report 03/30/16 06:29:13 PM page 1

Method: DAILY2 Sample Name: LCS16A27KE4 DF100 Operator:
Run Time: 03/30/16 18:24:20
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0011	.9168	.0003	41.98	.0018	-.0000	.0034
SDev	.0001	.0017	.0007	.25	.0001	.0000	.0028
%RSD	6.090	.1817	230.3	.5963	2.707	28.26	83.12
#1	.0012	.9156	-.0002	41.80	.0018	-.0000	.0014
#2	.0011	.9180	.0008	42.16	.0019	-.0000	.0054

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.8763	.0002	.0009	.0037	.0011	.7173	.0287
SDev	.0010	.0002	.0003	.0006	.0001	.0066	.0113
%RSD	.1097	96.68	31.67	16.54	5.192	.9266	39.35
#1	.8770	.0001	.0007	.0033	.0012	.7126	.0207
#2	.8756	.0003	.0011	.0042	.0011	.7220	.0367

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0016	13.93	.5160	.0130	.0007	.3319	.1741
SDev	.0013	.03	.0002	.0001	.0012	.1314	.0043
%RSD	81.10	.2256	.0408	.6683	159.9	39.58	2.484
#1	.0007	13.95	.5161	.0131	.0016	.2390	.1711
#2	.0025	13.91	.5159	.0130	-.0001	.4248	.1772

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0000	-.0014	.0019	.0014	.0159	.0049	99.35
SDev	.0010	.0001	.0006	.0030	.0131	.0019	.08
%RSD	8259.	4.217	30.24	217.9	81.87	39.22	.0801
#1	.0007	-.0015	.0015	-.0008	.0252	.0035	99.41
#2	-.0007	-.0014	.0023	.0035	.0067	.0062	99.30

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0027	-.0011	2.151	.0008	.0002	.0002	.0018
SDev	.0023	.0005	.019	.0004	.0011	.0004	.0000
%RSD	86.32	49.41	.8951	51.22	658.6	276.4	.4449
#1	.0010	-.0015	2.137	.0005	-.0006	.0004	.0018
#2	.0043	-.0007	2.165	.0011	.0010	-.0001	.0018

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0002	.0666	-.0009	.0519	.0026	-.0001	.0002
SDev	.0006	.0000	.0033	.0408	.0001	.0013	.0000
%RSD	289.2	.0644	351.5	78.67	2.790	2602.	2.280
#1	-.0002	.0665	-.0033	.0230	.0026	-.0010	.0002
#2	.0006	.0666	.0014	.0807	.0025	.0009	.0002

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0008	.0006
SDev	.0000	.0005
%RSD	4.589	91.63
#1	.0008	.0002
#2	.0007	.0010

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1668016	10000	--	--	--	--	--
SDev	1286.227	.0000000	--	--	--	--	--
%RSD	.0771112	.0000000	--	--	--	--	--
#1	1668926	10000	--	--	--	--	--
#2	1667107	10000	--	--	--	--	--

Analysis Report 03/30/16 06:34:20 PM

Method: DAILY2 Sample Name: 588049F DF100 Operator:
Run Time: 03/30/16 18:29:27
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0003	.2530	.0017	42.25	3.130	-.0000	.0017
SDev	.0008	.0059	.0012	.25	.015	.0000	.0036
%RSD	246.2	2.335	69.50	.5820	.4730	94.79	208.5
#1	-.0002	.2488	.0025	42.07	3.120	-.0001	.0043
#2	.0009	.2572	.0009	42.42	3.141	-.0000	-.0008

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.3729	.0001	.0084	.0013	.0022	.1509	.0856
SDev	.0004	.0002	.0007	.0014	.0008	.0442	.0183
%RSD	.0966	165.5	8.376	113.0	35.50	29.30	21.41
#1	.3726	-.0000	.0089	.0003	.0027	.1196	.0727
#2	.3731	.0003	.0079	.0023	.0016	.1821	.0986

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0014	13.87	.0766	.0041	.0028	.0869	.0489
SDev	.0024	.04	.0025	.0001	.0008	.2986	.0084
%RSD	166.8	.2555	3.252	3.090	28.77	343.8	17.15
#1	-.0003	13.89	.0748	.0042	.0022	-.1243	.0429
#2	.0031	13.84	.0783	.0040	.0034	.2980	.0548

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0078	.0228	.0246	-.0026	.1521	.0018	99.56
SDev	.0005	.0009	.0012	.0042	.0152	.0010	.01
%RSD	6.814	4.073	4.929	162.5	9.973	52.30	.0132
#1	.0082	.0221	.0254	-.0056	.1628	.0025	99.57
#2	.0075	.0234	.0237	.0004	.1413	.0012	99.55

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0038	-.0019	1.574	.0240	.0000	-.0038	.0315
SDev	.0042	.0014	.023	.0005	.0005	.0013	.0001
%RSD	111.9	76.38	1.480	2.092	2374.	33.02	.1895
#1	.0008	-.0009	1.557	.0243	-.0003	-.0047	.0314
#2	.0068	-.0029	1.590	.0236	.0003	-.0029	.0315

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0021	.0177	-.0040	.0592	.0006	-.0008	-.0001
SDev	.0047	.0003	.0034	.0844	.0006	.0032	.0001
%RSD	223.4	1.820	86.08	142.7	107.9	394.9	150.0
#1	.0012	.0179	-.0016	-.0005	.0010	-.0031	.0000
#2	-.0054	.0174	-.0064	.1189	.0001	.0014	-.0002

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0011	.0020
SDev	.0001	.0016
%RSD	7.712	83.57
#1	.0011	.0008
#2	.0012	.0031

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1671470	10000	--	--	--	--	--
SDev	225.5671	.0000000	--	--	--	--	--
%RSD	.0134951	.0000000	--	--	--	--	--
#1	1671629	10000	--	--	--	--	--
#2	1671310	10000	--	--	--	--	--

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Analysis Report 03/30/16 06:39:27 PM page 1

Method: DAILY2 Sample Name: 588556F DF100 Operator:
Run Time: 03/30/16 18:34:34
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0003	.2492	.0009	39.88	1.600	-.0001	-.0075
SDev	.0009	.0027	.0018	.20	.010	.0000	.0025
%RSD	360.7	1.091	196.6	.4891	.6069	78.22	32.81
#1	-.0009	.2473	-.0004	39.74	1.594	-.0001	-.0093
#2	.0004	.2511	.0022	40.01	1.607	-.0000	-.0058

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.6391	-.0000	.0105	.0013	.0046	.1900	.0578
SDev	.0053	.0001	.0008	.0025	.0004	.0046	.0283
%RSD	.8348	282.3	7.952	192.2	8.325	2.437	49.02
#1	.6353	-.0001	.0099	-.0005	.0043	.1867	.0378
#2	.6429	.0000	.0111	.0030	.0049	.1933	.0779

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0007	13.27	.0941	.0080	.0010	-.0365	.0307
SDev	.0032	.07	.0037	.0000	.0008	.3964	.0080
%RSD	438.5	.5297	3.903	.5464	78.14	1087.	25.93
#1	-.0030	13.23	.0915	.0080	.0004	-.3168	.0251
#2	.0015	13.32	.0967	.0081	.0016	.2439	.0364

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0118	.0275	.0294	-.0020	.0468	-.0019	99.87
SDev	.0018	.0028	.0003	.0021	.0131	.0078	.57
%RSD	15.07	10.25	.8712	107.5	27.90	416.1	.5671
#1	.0130	.0255	.0295	-.0005	.0561	-.0074	100.3
#2	.0105	.0295	.0292	-.0035	.0376	.0037	99.47

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0042	-.0034	1.286	.0287	-.0036	-.0013	.0199
SDev	.0039	.0031	.000	.0008	.0033	.0036	.0000
%RSD	92.58	91.84	.0303	2.671	92.26	270.0	.1052
#1	-.0014	-.0012	1.286	.0282	-.0013	-.0038	.0199
#2	-.0069	-.0056	1.287	.0293	-.0060	.0012	.0198

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0033	.0164	-.0022	-.0059	.0004	.0006	-.0001
SDev	.0009	.0000	.0054	.0875	.0008	.0023	.0001
%RSD	28.40	.1167	243.8	1493.	196.0	381.6	49.21
#1	-.0040	.0164	-.0060	-.0678	-.0002	-.0010	-.0002
#2	-.0026	.0165	.0016	.0560	.0009	.0022	-.0001

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0017	.0014
SDev	.0002	.0005
%RSD	11.78	35.01
#1	.0016	.0010
#2	.0019	.0017

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1676610	10000	--	--	--	--	--
SDev	9417.955	.0000000	--	--	--	--	--
%RSD	.5617259	.0000000	--	--	--	--	--
#1	1683270	10000	--	--	--	--	--
#2	1669951	10000	--	--	--	--	--

Analysis Report 03/30/16 06:44:34 PM

Method: DAILY2 Sample Name: 588556FD DF100 Operator:
Run Time: 03/30/16 18:39:41
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0001	.2521	.0026	39.26	1.816	-.0000	-.0038
SDev	.0015	.0066	.0005	.20	.011	.0000	.0055
%RSD	1498.	2.601	17.89	.5189	.6293	47.90	146.4
#1	.0011	.2567	.0029	39.12	1.808	-.0001	.0001
#2	-.0009	.2474	.0022	39.41	1.824	-.0000	-.0077

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.5951	.0001	.0115	.0009	.0050	.1764	.0652
SDev	.0020	.0003	.0004	.0005	.0012	.0058	.0060
%RSD	.3349	242.9	3.567	55.31	23.63	3.298	9.273
#1	.5965	.0003	.0118	.0005	.0059	.1722	.0609
#2	.5937	-.0001	.0112	.0012	.0042	.1805	.0694

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0010	13.10	.0990	.0076	.0010	.1474	.0337
SDev	.0004	.06	.0099	.0002	.0005	.1493	.0041
%RSD	43.61	.4806	9.994	2.410	45.06	101.3	12.08
#1	.0007	13.14	.1060	.0078	.0013	.0419	.0308
#2	.0013	13.05	.0920	.0075	.0007	.2530	.0365

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0126	.0215	.0203	-.0020	.0865	.0067	99.36
SDev	.0023	.0030	.0003	.0073	.0001	.0072	.37
%RSD	18.59	13.90	1.638	372.0	.1210	107.7	.3704
#1	.0142	.0236	.0205	.0032	.0866	.0118	99.10
#2	.0109	.0194	.0201	-.0072	.0865	.0016	99.62

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0047	.0010	1.322	.0207	.0023	-.0008	.0210
SDev	.0009	.0031	.001	.0012	.0024	.0005	.0001
%RSD	20.08	303.9	.0381	5.882	104.8	59.71	.2241
#1	.0041	-.0012	1.323	.0216	.0006	-.0005	.0211
#2	.0054	.0032	1.322	.0198	.0039	-.0011	.0210

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0004	.0169	-.0020	.0301	.0012	-.0017	.0000
SDev	.0082	.0006	.0013	.0231	.0010	.0007	.0005
%RSD	2247.	3.628	64.93	76.68	87.07	37.82	1145.
#1	.0055	.0173	-.0011	.0138	.0019	-.0013	.0004
#2	-.0062	.0165	-.0030	.0464	.0005	-.0022	-.0003

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0017	.0013
SDev	.0001	.0002
%RSD	4.730	14.64
#1	.0018	.0011
#2	.0017	.0014

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1668195	10000	--	--	--	--	--
SDev	6297.493	.0000000	--	--	--	--	--
%RSD	.3775034	.0000000	--	--	--	--	--
#1	1663742	10000	--	--	--	--	--
#2	1672648	10000	--	--	--	--	--

010978

Analysis Report 03/30/16 06:49:40 PM page 1

Method: DAILY2 Sample Name: 588556FL DF500 Operator:
Run Time: 03/30/16 18:44:48
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0001	.0447	-.0015	8.631	.3056	-.0001	-.0063
SDev	.0005	.0033	.0002	.042	.0004	.0000	.0043
%RSD	457.8	7.377	15.94	.4856	.1477	63.98	67.83
#1	.0003	.0470	-.0013	8.661	.3059	-.0001	-.0093
#2	-.0005	.0423	-.0017	8.601	.3053	-.0000	-.0033

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1351	.0001	.0016	.0002	.0009	.0419	.0170
SDev	.0003	.0002	.0000	.0010	.0003	.0295	.0183
%RSD	.2043	337.3	.6340	469.8	27.36	70.32	107.5
#1	.1353	-.0001	.0016	-.0005	.0011	.0211	.0041
#2	.1349	.0002	.0016	.0009	.0007	.0627	.0299

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0007	2.953	.0202	.0017	.0005	.1140	.0067
SDev	.0014	.002	.0001	.0000	.0007	.1124	.0050
%RSD	187.3	.0807	.5353	.8351	146.6	98.64	74.56
#1	-.0002	2.954	.0203	.0017	.0010	.0345	.0032
#2	.0017	2.951	.0201	.0018	-.0000	.1934	.0102

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0027	.0086	.0048	.0001	.0122	-.0005	100.1
SDev	.0000	.0020	.0003	.0004	.0064	.0013	.2
%RSD	1.645	23.08	5.625	403.8	52.46	291.6	.1634
#1	.0027	.0100	.0049	.0004	.0167	-.0014	100.0
#2	.0026	.0072	.0046	-.0002	.0077	.0005	100.2

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0005	-.0027	.2495	.0060	-.0020	-.0009	.0041
SDev	.0056	.0045	.0059	.0008	.0048	.0013	.0001
%RSD	1145.	164.1	2.361	13.91	244.9	140.5	1.410
#1	-.0044	-.0059	.2536	.0066	-.0054	-.0000	.0042
#2	.0035	.0004	.2453	.0055	.0014	-.0018	.0041

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0013	.0034	-.0085	.0219	-.0004	-.0002	-.0000
SDev	.0013	.0001	.0006	.0632	.0001	.0008	.0000
%RSD	101.4	2.579	7.626	288.2	17.74	489.9	65.56
#1	-.0004	.0035	-.0081	-.0228	-.0004	.0004	-.0000
#2	-.0022	.0033	-.0090	.0666	-.0005	-.0008	-.0001

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0003	.0006
SDev	.0002	.0009
%RSD	69.62	151.4
#1	.0004	-.0000
#2	.0001	.0012

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1681134	10000	--	--	--	--	--
SDev	2877.218	.0000000	--	--	--	--	--
%RSD	.1711474	.0000000	--	--	--	--	--
#1	1679100	10000	--	--	--	--	--
#2	1683169	10000	--	--	--	--	--

Analysis Report 03/30/16 06:54:47 PM

Method: DAILY2 Sample Name: 588556FAS DF100 Operator:
Run Time: 03/30/16 18:49:54
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0494	2.264	2.121	39.81	3.478	.0511	-.0120
SDev	.0009	.001	.005	.30	.003	.0000	.0034
%RSD	1.854	.0321	.2588	.7425	.0801	.0541	28.07
#1	.0500	2.264	2.117	39.60	3.480	.0511	-.0096
#2	.0487	2.265	2.125	40.02	3.476	.0510	-.0144

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	21.41	.0502	.5155	.1904	.2510	1.230	20.82
SDev	.01	.0002	.0013	.0000	.0007	.011	.02
%RSD	.0236	.3149	.2606	.0019	.2849	.8909	.0812
#1	21.41	.0503	.5164	.1904	.2515	1.222	20.81
#2	21.41	.0501	.5145	.1904	.2505	1.238	20.83

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0004	13.83	20.91	.5197	.0021	19.49	21.63
SDev	.0009	.04	.06	.0001	.0009	.15	.04
%RSD	228.6	.3226	.2745	.0273	41.09	.7501	.1791
#1	-.0003	13.86	20.95	.5198	.0027	19.39	21.66
#2	.0011	13.80	20.87	.5196	.0015	19.59	21.60

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.4929	.5358	.5311	-.0048	.0101	.5227	97.09
SDev	.0001	.0009	.0024	.0016	.0575	.0038	.13
%RSD	.0221	.1685	.4523	32.61	571.7	.7288	.1331
#1	.4930	.5352	.5328	-.0059	.0507	.5254	97.00
#2	.4929	.5365	.5294	-.0037	-.0306	.5200	97.18

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.113	2.114	5.374	.5322	2.112	.0009	.0198
SDev	.004	.001	.002	.0013	.002	.0028	.0000
%RSD	.1856	.0406	.0332	.2410	.0885	318.4	.0736
#1	2.116	2.115	5.373	.5331	2.113	-.0011	.0198
#2	2.110	2.114	5.375	.5313	2.111	.0028	.0198

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0250	.0170	2.103	.0337	.5008	.0055	-.0002
SDev	.0051	.0004	.001	.0458	.0016	.0029	.0002
%RSD	20.45	2.626	.0539	136.0	.3249	53.29	143.3
#1	-.0214	.0173	2.104	.0013	.5020	.0075	.0000
#2	-.0286	.0167	2.102	.0661	.4997	.0034	-.0003

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.5270	-.0025
SDev	.0016	.0007
%RSD	.2994	26.61
#1	.5281	-.0029
#2	.5259	-.0020

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1630040	10000	--	--	--	--	--
SDev	2065.459	.0000000	--	--	--	--	--
%RSD	.1267121	.0000000	--	--	--	--	--
#1	1628580	10000	--	--	--	--	--
#2	1631501	10000	--	--	--	--	--

010982

Analysis Report 03/30/16 06:59:54 PM page 1

Method: DAILY2 Sample Name: 590212F DF100 Operator:
Run Time: 03/30/16 18:55:01
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0010	.1446	.0029	40.35	3.507	-.0000	-.0030
SDev	.0010	.0006	.0010	.24	.003	.0000	.0024
%RSD	104.1	.4308	35.61	.5947	.0910	102.2	79.72
#1	.0017	.1442	.0022	40.18	3.505	-.0001	-.0013
#2	.0003	.1451	.0037	40.52	3.509	-.0000	-.0047

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1338	.0001	.0069	.0016	.0045	.0954	.0648
SDev	.0000	.0002	.0001	.0016	.0000	.0328	.0393
%RSD	.0324	306.4	.9485	103.9	.5715	34.37	60.59
#1	.1338	.0002	.0068	.0004	.0046	.0722	.0370
#2	.1339	-.0001	.0069	.0027	.0045	.1185	.0925

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0025	13.61	.0382	.0023	.0023	.2994	.0355
SDev	.0031	.03	.0034	.0001	.0009	.3618	.0107
%RSD	127.3	.2068	8.884	5.011	40.26	120.8	30.09
#1	.0002	13.59	.0406	.0024	.0016	.0436	.0279
#2	.0047	13.63	.0358	.0023	.0029	.5552	.0430

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0054	.0207	.0208	-.0037	.0774	.0095	99.06
SDev	.0008	.0013	.0024	.0020	.0043	.0013	.27
%RSD	14.54	6.155	11.79	54.33	5.579	13.65	.2677
#1	.0048	.0198	.0225	-.0023	.0744	.0104	99.25
#2	.0059	.0216	.0190	-.0051	.0805	.0086	98.88

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0019	-.0042	1.006	.0207	-.0022	.0011	.0347
SDev	.0019	.0031	.008	.0012	.0014	.0016	.0000
%RSD	100.3	74.07	.7780	5.813	66.52	144.1	.0808
#1	.0033	-.0064	1.012	.0216	-.0032	.0023	.0347
#2	.0006	-.0020	1.001	.0199	-.0011	-.0000	.0347

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0011	.0105	-.0069	.0906	.0008	.0016	.0002
SDev	.0059	.0000	.0018	.0974	.0002	.0035	.0000
%RSD	535.7	.3405	25.61	107.6	19.72	213.0	21.72
#1	.0052	.0105	-.0082	.0217	.0007	.0041	.0002
#2	-.0031	.0105	-.0057	.1595	.0010	-.0008	.0002

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0006	.0015
SDev	.0000	.0015
%RSD	4.009	99.83
#1	.0006	.0005
#2	.0006	.0026

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1663272	10000	--	--	--	--	--
SDev	4516.998	.0000000	--	--	--	--	--
%RSD	.2715730	.0000000	--	--	--	--	--
#1	1666466	10000	--	--	--	--	--
#2	1660078	10000	--	--	--	--	--

010984

Analysis Report 03/30/16 07:05:02 PM page 1

Method: DAILY2 Sample Name: 590213F DF100 Operator:
Run Time: 03/30/16 19:00:08
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0012	.3222	.0013	35.77	1.219	-.0001	-.0079
SDev	.0002	.0007	.0009	.15	.000	.0000	.0037
%RSD	20.64	.2153	73.48	.4148	.0173	3.438	46.25
#1	.0010	.3217	.0006	35.66	1.219	-.0001	-.0105
#2	.0014	.3227	.0020	35.87	1.219	-.0001	-.0053

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.6262	.0001	.0031	.0005	.0026	.1297	.0888
SDev	.0002	.0000	.0001	.0004	.0001	.0117	.0041
%RSD	.0276	14.21	4.702	83.75	4.230	9.036	4.630
#1	.6260	.0001	.0032	.0002	.0026	.1214	.0859
#2	.6263	.0001	.0030	.0008	.0027	.1380	.0917

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0000	12.07	.1305	.0044	.0009	.1015	.0623
SDev	.0003	.01	.0017	.0001	.0003	.0315	.0015
%RSD	722.5	.0536	1.293	2.707	35.52	31.00	2.491
#1	-.0002	12.06	.1293	.0045	.0012	.1237	.0612
#2	.0002	12.07	.1317	.0044	.0007	.0792	.0634

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0018	.0076	.0042	.0017	.0818	.0014	99.50
SDev	.0010	.0002	.0006	.0001	.0065	.0026	.00
%RSD	57.25	2.716	15.31	6.981	7.958	185.5	.0032
#1	.0011	.0077	.0046	.0018	.0864	-.0004	99.49
#2	.0026	.0074	.0037	.0016	.0772	.0032	99.50

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0043	-.0050	1.932	.0053	-.0019	-.0005	.0141
SDev	.0014	.0017	.035	.0005	.0016	.0005	.0000
%RSD	31.10	34.89	1.790	9.260	86.48	95.04	.0845
#1	.0034	-.0062	1.907	.0057	-.0030	-.0002	.0141
#2	.0053	-.0037	1.956	.0050	-.0007	-.0009	.0141

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0001	.0196	-.0028	.0165	-.0001	-.0002	.0000
SDev	.0011	.0001	.0010	.0205	.0001	.0016	.0000
%RSD	1856.	.5482	36.69	124.1	58.62	834.3	25.49
#1	-.0007	.0196	-.0035	.0020	-.0001	.0010	.0000
#2	.0008	.0197	-.0021	.0310	-.0001	-.0014	.0000

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0011	.0018
SDev	.0002	.0001
%RSD	14.78	5.827
#1	.0009	.0017
#2	.0012	.0019

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1670452	10000	--	--	--	--	--
SDev	116.6726	.0000000	--	--	--	--	--
%RSD	.0069845	.0000000	--	--	--	--	--
#1	1670370	10000	--	--	--	--	--
#2	1670535	10000	--	--	--	--	--

Analysis Report 03/30/16 07:10:09 PM page 1

Method: DAILY2 Sample Name: CCV Operator:
Run Time: 03/30/16 19:05:16
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.025	10.12	5.315	H5.710	9.675	1.023	4.989
SDev	.003	.01	.004	.051	.003	.002	.007
%RSD	.2958	.0903	.0817	.8879	.0356	.1948	.1393
#1	1.023	10.13	5.311	H5.745	9.678	1.024	4.994
#2	1.027	10.11	5.318	H5.674	9.673	1.021	4.984
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass
High	1.100	11.00	5.500	5.500	11.00	1.100	5.500
Low	.9000	9.000	4.500	4.500	9.000	.9000	4.500

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.24	1.025	5.044	1.934	1.969	9.849	19.34
SDev	.01	.002	.002	.001	.003	.019	.05
%RSD	.0349	.1607	.0472	.0503	.1285	.1910	.2834
#1	20.24	1.026	5.045	1.934	1.967	9.835	19.30
#2	20.23	1.024	5.042	1.933	1.971	9.862	19.37
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.00	1.100	5.500	2.200	2.200	11.00	22.00
Low	18.00	.9000	4.500	1.800	1.800	9.000	18.00

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.976	5.226	20.25	1.018	4.977	29.13	29.73
SDev	.015	.001	.00	.000	.017	.43	.02
%RSD	.3042	.0200	.0004	.0006	.3352	1.481	.0514
#1	4.966	5.227	20.25	1.018	4.988	28.82	29.74
#2	4.987	5.225	20.25	1.018	4.965	29.43	29.72
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.500	5.500	22.00	1.100	5.500	33.00	33.00
Low	4.500	4.500	18.00	.9000	4.500	27.00	27.00

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	4.843	5.040	5.020	.9476	1.087	1.025	97.09
SDev	.004	.014	.020	.0013	.001	.002	.28
%RSD	.0754	.2806	.3968	.1337	.0682	.2146	.2879
#1	4.841	5.050	5.034	.9467	1.088	1.023	96.89
#2	4.846	5.030	5.006	.9485	1.086	1.026	97.29
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	5.500			1.100	1.100	1.100	
Low	4.500			.9000	.9000	.9000	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

010987

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.256	5.281	4.977	5.022	5.267	5.078	5.014
SDev	.029	.019	.004	.018	.022	.003	.009
%RSD	.5521	.3524	.0863	.3581	.4188	.0515	.1747
#1	5.276	5.294	4.980	5.034	5.283	5.080	5.007
#2	5.235	5.268	4.974	5.009	5.252	5.076	5.020
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			5.500	5.500	5.500	5.500	5.500
Low			4.500	4.500	4.500	4.500	4.500

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9996	4.883	5.203	5.005	4.995	1.038	4.898
SDev	.0063	.002	.021	.040	.005	.010	.002
%RSD	.6255	.0483	.3953	.7922	.0925	.9528	.0368
#1	.9952	4.881	5.218	4.977	4.992	1.031	4.897
#2	1.004	4.885	5.189	5.033	4.998	1.045	4.899
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.100	5.500	5.500	5.500	5.500	1.100	5.500
Low	.9000	4.500	4.500	4.500	4.500	.9000	4.500

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	1.055	4.827
SDev	.003	.007
%RSD	.3180	.1501
#1	1.057	4.822
#2	1.053	4.832
Errors	LC Pass	LC Pass
High	1.100	5.500
Low	.9000	4.500

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1630156	10000	--	--	--	--	--
SDev	4652.763	.0000000	--	--	--	--	--
%RSD	.2854182	.0000000	--	--	--	--	--
#1	1626866	10000	--	--	--	--	--
#2	1633446	10000	--	--	--	--	--

010989

Analysis Report 03/30/16 07:15:17 PM page 1

Method: DAILY2 Sample Name: CCB Operator:
Run Time: 03/30/16 19:10:24
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0007	-.0064	-.0039	H.3529	.0004	-.0001	-.0072
SDev	.0001	.0007	.0035	.0463	.0002	.0000	.0095
%RSD	12.02	11.46	90.40	13.12	46.68	18.53	132.5
#1	-.0007	-.0069	-.0014	H.3856	.0005	-.0001	L-.0139
#2	-.0006	-.0059	L-.0064	H.3201	.0002	-.0001	-.0005
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass
High	.0050	.0500	.0050	.0500	.0050	.0050	.0100
Low	-.0050	-.0500	-.0050	-.0500	-.0050	-.0050	-.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0043	-.0001	.0002	-.0007	-.0011	.0065	-.0289
SDev	.0007	.0002	.0003	.0001	.0006	.0078	.0079
%RSD	17.37	217.5	160.9	6.917	52.94	120.9	27.33
#1	.0048	.0001	.0003	-.0008	-.0007	.0120	-.0233
#2	.0037	-.0003	-.0000	-.0007	-.0015	.0009	-.0344
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0500	.0050	.0050	.0050	.0050	.0500	.1000
Low	-.0500	-.0050	-.0050	-.0050	-.0050	-.0500	-.1000

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0016	.0014	-.0021	.0003	.0004	L-.2200	-.0072
SDev	.0007	.0002	.0005	.0001	.0003	.1055	.0009
%RSD	41.97	11.65	22.52	17.18	76.26	47.96	12.50
#1	-.0011	.0016	-.0018	.0002	.0006	L-.1454	-.0066
#2	-.0021	.0013	-.0024	.0003	.0002	L-.2947	-.0079
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass
High	.0050	.0050	.0500	.0050	.0050	.0500	.0500
Low	-.0050	-.0050	-.0500	-.0050	-.0050	-.0500	-.0500

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0005	.0037	-.0014	.0030	L-.0208	-.0010	100.5
SDev	.0000	.0024	.0030	.0027	.0109	.0109	.2
%RSD	2.803	64.83	208.5	89.56	52.46	1073.	.2219
#1	-.0005	.0020	.0007	.0050	L-.0285	.0067	100.3
#2	-.0005	.0054	-.0035	.0011	-.0131	-.0087	100.6
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Low	LC Pass	NOCHECK
High	.0050			.0050	.0200	.0100	
Low	-.0050			-.0050	-.0200	-.0100	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0075	-.0045	.0098	.0003	-.0005	-.0015	.0002
SDev	.0021	.0005	.0019	.0012	.0003	.0013	.0001
%RSD	27.23	11.21	18.91	418.4	70.15	85.85	23.34
#1	.0090	-.0049	H.0111	.0011	-.0002	-.0006	.0002
#2	.0061	-.0042	.0085	-.0006	-.0007	-.0024	.0002
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			.0100	.0050	.0050	.0100	.0050
Low			-.0100	-.0050	-.0050	-.0100	-.0050

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0027	-.0002	-.0039	-.0661	-.0013	-.0012	-.0001
SDev	.0009	.0001	.0050	.0399	.0000	.0038	.0002
%RSD	32.27	32.63	129.0	60.41	2.944	324.3	125.1
#1	-.0021	-.0002	-.0075	-.0379	-.0013	.0015	-.0000
#2	-.0033	-.0002	-.0003	-.0943	-.0013	-.0039	-.0003
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0100	.0050	.0100	.1000	.0050	.0100	.0050
Low	-.0100	-.0050	-.0100	-.1000	-.0050	-.0100	-.0050

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	-.0001	.0003
SDev	.0000	.0005
%RSD	1.048	200.0
#1	-.0001	.0006
#2	-.0001	-.0001
Errors	LC Pass	LC Pass
High	.0050	.0050
Low	-.0050	-.0050

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1687204	10000	--	--	--	--	--
SDev	3763.929	.0000000	--	--	--	--	--
%RSD	.2230869	.0000000	--	--	--	--	--
#1	1684542	10000	--	--	--	--	--
#2	1689865	10000	--	--	--	--	--

010992

Analysis Report 03/31/16 08:50:58 AM page 1

Method: DAILY2 Sample Name: CCV Operator:
Run Time: 03/31/16 08:46:05
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.031	10.30	5.272	H6.290	9.629	1.007	4.986
SDev	.001	.02	.015	.020	.018	.001	.002
%RSD	.1158	.1877	.2861	.3157	.1920	.0828	.0440
#1	1.030	10.29	5.262	H6.276	9.616	1.006	4.985
#2	1.032	10.32	5.283	H6.304	9.642	1.007	4.988
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass
High	1.100	11.00	5.500	5.500	11.00	1.100	5.500
Low	.9000	9.000	4.500	4.500	9.000	.9000	4.500

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.32	1.028	5.039	1.943	1.979	9.878	19.65
SDev	.02	.002	.005	.002	.002	.015	.06
%RSD	.0745	.1888	.1039	.0945	.0887	.1476	.3045
#1	20.33	1.026	5.036	1.942	1.977	9.867	19.60
#2	20.31	1.029	5.043	1.944	1.980	9.888	19.69
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.00	1.100	5.500	2.200	2.200	11.00	22.00
Low	18.00	.9000	4.500	1.800	1.800	9.000	18.00

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.944	5.316	20.21	1.012	4.891	29.90	30.16
SDev	.001	.017	.08	.002	.012	.07	.09
%RSD	.0193	.3227	.3757	.1749	.2484	.2471	.2859
#1	4.944	5.304	20.16	1.011	4.882	29.84	30.09
#2	4.945	5.328	20.27	1.013	4.899	29.95	30.22
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.500	5.500	22.00	1.100	5.500	33.00	33.00
Low	4.500	4.500	18.00	.9000	4.500	27.00	27.00

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	4.854	5.085	5.002	.9308	1.076	1.017	94.08
SDev	.019	.003	.004	.0019	.061	.005	.20
%RSD	.3951	.0621	.0839	.2095	5.714	.4757	.2174
#1	4.840	5.082	4.999	.9294	H1.119	1.020	93.93
#2	4.867	5.087	5.005	.9321	1.032	1.013	94.22
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	5.500			1.100	1.100	1.100	
Low	4.500			.9000	.9000	.9000	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.139	5.140	4.984	5.024	5.135	4.993	5.062
SDev	.001	.004	.016	.004	.002	.007	.000
%RSD	.0286	.0690	.3136	.0766	.0365	.1415	.0093
#1	5.138	5.143	4.973	5.022	5.136	4.988	5.063
#2	5.140	5.138	4.995	5.027	5.133	4.998	5.062
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			5.500	5.500	5.500	5.500	5.500
Low			4.500	4.500	4.500	4.500	4.500

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9975	4.843	5.163	4.988	5.030	1.051	4.931
SDev	.0006	.002	.015	.011	.002	.003	.007
%RSD	.0551	.0415	.2905	.2229	.0423	.2936	.1326
#1	.9972	4.844	5.153	4.996	5.032	1.049	4.935
#2	.9979	4.841	5.174	4.980	5.029	1.053	4.926
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.100	5.500	5.500	5.500	5.500	1.100	5.500
Low	.9000	4.500	4.500	4.500	4.500	.9000	4.500

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	1.045	4.776
SDev	.003	.016
%RSD	.2518	.3418
#1	1.043	4.788
#2	1.047	4.765
Errors	LC Pass	LC Pass
High	1.100	5.500
Low	.9000	4.500

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1579610	10000	--	--	--	--	--
SDev	3299.360	.0000000	--	--	--	--	--
%RSD	.2088718	.0000000	--	--	--	--	--
#1	1577277	10000	--	--	--	--	--
#2	1581943	10000	--	--	--	--	--

010995

Analysis Report 03/31/16 08:56:05 AM page 1

Method: DAILY2 Sample Name: CCB Operator:
Run Time: 03/31/16 08:51:12
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0003	-.0042	-.0012	H.9904	.0002	.0000	-.0083
SDev	.0007	.0069	.0036	.0613	.0000	.0000	.0009
%RSD	199.1	164.9	312.5	6.185	.4001	233.6	10.76
#1	.0008	.0007	.0014	H1.034	.0002	-.0000	-.0089
#2	-.0001	-.0090	-.0037	H.9470	.0002	.0000	-.0076
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass
High	.0050	.0500	.0050	.0500	.0050	.0050	.0100
Low	-.0050	-.0500	-.0050	-.0500	-.0050	-.0050	-.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0044	.0001	.0004	.0003	-.0008	.0282	.0070
SDev	.0007	.0002	.0002	.0004	.0001	.0021	.0102
%RSD	15.14	133.0	56.49	153.9	11.04	7.277	146.3
#1	.0049	.0000	.0002	-.0000	-.0009	.0268	-.0002
#2	.0039	.0003	.0005	.0006	-.0008	.0297	.0142
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0500	.0050	.0050	.0050	.0050	.0500	.1000
Low	-.0500	-.0050	-.0050	-.0050	-.0050	-.0500	-.1000

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0015	.0011	.0034	.0003	-.0000	H.1763	-.0188
SDev	.0008	.0000	.0013	.0002	.0005	.1885	.0037
%RSD	54.59	.5834	37.50	62.52	1712.	106.9	19.92
#1	.0009	.0011	.0043	.0002	-.0004	.0430	-.0214
#2	.0021	.0011	.0025	.0004	.0003	H.3097	-.0161
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass
High	.0050	.0050	.0500	.0050	.0050	.0500	.0500
Low	-.0050	-.0050	-.0500	-.0050	-.0050	-.0500	-.0500

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0017	.0047	-.0023	.0025	H.0327	H.0108	97.54
SDev	.0002	.0019	.0008	.0045	.0067	.0056	.11
%RSD	10.24	41.60	34.89	178.4	20.38	51.68	.1145
#1	-.0016	.0033	-.0028	H.0057	H.0374	H.0148	97.62
#2	-.0018	.0060	-.0017	-.0007	H.0280	.0069	97.46
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC High	LC High	NOCHECK
High	.0050			.0050	.0200	.0100	
Low	-.0050			-.0050	-.0200	-.0100	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0059	-.0050	.0074	.0001	-.0014	.0054	.0002
SDev	.0065	.0012	.0026	.0012	.0013	.0005	.0001
%RSD	109.1	24.18	35.09	2159.	99.19	9.809	33.23
#1	.0105	-.0058	.0092	-.0008	-.0004	.0050	.0003
#2	.0013	-.0041	.0056	.0009	-.0023	.0057	.0002
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			.0100	.0050	.0050	.0100	.0050
Low			-.0100	-.0050	-.0050	-.0100	-.0050

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0042	-.0001	-.0040	.0429	-.0012	-.0010	-.0002
SDev	.0013	.0000	.0010	.0319	.0000	.0019	.0000
%RSD	30.69	46.86	25.91	74.31	1.293	189.4	23.64
#1	-.0052	-.0001	-.0047	.0204	-.0012	.0003	-.0002
#2	-.0033	-.0001	-.0033	.0655	-.0012	-.0024	-.0002
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0100	.0050	.0100	.1000	.0050	.0100	.0050
Low	-.0100	-.0050	-.0100	-.1000	-.0050	-.0100	-.0050

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0007	.0007
SDev	.0003	.0001
%RSD	35.03	16.24
#1	.0009	.0006
#2	.0005	.0008
Errors	LC Pass	LC Pass
High	.0050	.0050
Low	-.0050	-.0050

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1637638	10000	--	--	--	--	--
SDev	1950.908	.0000000	--	--	--	--	--
%RSD	.1191293	.0000000	--	--	--	--	--
#1	1639018	10000	--	--	--	--	--
#2	1636259	10000	--	--	--	--	--

010998

Analysis Report 03/31/16 09:01:12 AM page 1

Method: DAILY2 Sample Name: 590214F DF100 Operator:
Run Time: 03/31/16 08:56:19
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0011	.5145	.0020	43.17	.0437	.0000	-.0028
SDev	.0005	.0024	.0081	.18	.0001	.0000	.0021
%RSD	47.51	.4567	404.4	.4120	.3254	17.55	76.06
#1	.0007	.5162	.0078	43.04	.0436	.0000	-.0043
#2	.0014	.5129	-.0037	43.29	.0438	.0000	-.0013

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.3384	.0002	.0133	.0029	.0059	.3019	.1693
SDev	.0014	.0003	.0003	.0001	.0003	.0070	.0039
%RSD	.4158	119.1	1.989	2.462	5.100	2.319	2.288
#1	.3394	.0000	.0135	.0029	.0057	.2969	.1720
#2	.3374	.0004	.0131	.0028	.0061	.3068	.1665

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0024	15.01	.1406	.0121	.0013	.3950	.0800
SDev	.0006	.01	.0010	.0001	.0002	.0999	.0006
%RSD	23.38	.0581	.7304	.6683	16.33	25.29	.7491
#1	.0020	15.00	.1399	.0122	.0015	.3244	.0804
#2	.0028	15.01	.1414	.0120	.0012	.4656	.0796

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0160	.0027	.0019	.0010	.0695	-.0008	95.86
SDev	.0004	.0048	.0018	.0016	.0067	.0014	.18
%RSD	2.342	181.4	96.42	162.1	9.631	180.6	.1867
#1	.0158	.0061	.0006	-.0001	.0648	.0002	95.74
#2	.0163	-.0008	.0032	.0021	.0743	-.0018	95.99

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0007	-.0035	3.048	.0022	-.0021	.0079	.0022
SDev	.0006	.0042	.065	.0004	.0030	.0009	.0000
%RSD	84.15	119.0	2.136	18.41	142.5	11.64	.1830
#1	.0003	-.0065	3.002	.0024	-.0042	.0086	.0022
#2	.0011	-.0006	3.094	.0019	.0000	.0073	.0022

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0042	.0372	-.0034	.1027	.0040	-.0012	.0005
SDev	.0000	.0002	.0003	.0004	.0003	.0013	.0001
%RSD	.0343	.5322	8.271	.3668	8.096	100.7	13.40
#1	-.0042	.0370	-.0036	.1030	.0038	-.0021	.0004
#2	-.0042	.0373	-.0032	.1025	.0043	-.0004	.0005

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0017	.0302
SDev	.0001	.0001
%RSD	4.766	.3047
#1	.0018	.0301
#2	.0016	.0303

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1609602	10000	--	--	--	--	--
SDev	3005.911	.0000000	--	--	--	--	--
%RSD	.1867488	.0000000	--	--	--	--	--
#1	1607476	10000	--	--	--	--	--
#2	1611727	10000	--	--	--	--	--

011000

Analysis Report 03/31/16 09:06:19 AM page 1

Method: DAILY2 Sample Name: 591000F DF100 Operator:
Run Time: 03/31/16 09:01:26
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0007	.5269	.0006	42.57	.9984	-.0000	-.0089
SDev	.0000	.0023	.0013	.22	.0008	.0000	.0046
%RSD	6.692	.4330	204.9	.5126	.0846	209.8	51.07
#1	-.0007	.5253	.0015	42.42	.9978	-.0000	-.0057
#2	-.0008	.5285	-.0003	42.73	.9990	.0000	-.0122

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1602	-.0002	.0021	.0020	.0008	.3004	.1417
SDev	.0003	.0000	.0001	.0021	.0009	.0177	.0273
%RSD	.1928	22.25	6.795	107.8	111.4	5.901	19.27
#1	.1600	-.0002	.0020	.0005	.0002	.2878	.1224
#2	.1604	-.0002	.0022	.0034	.0014	.3129	.1610

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0003	14.88	.0783	.0107	.0009	.1009	.0452
SDev	.0033	.03	.0009	.0000	.0002	.2008	.0107
%RSD	1179.	.1695	1.209	.0403	23.93	199.0	23.69
#1	-.0026	14.90	.0790	.0107	.0007	-.0411	.0376
#2	.0021	14.86	.0776	.0107	.0010	.2429	.0528

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0014	.0250	.0215	-.0033	.0401	.0001	97.40
SDev	.0007	.0026	.0012	.0005	.0353	.0007	.36
%RSD	48.55	10.25	5.703	14.84	88.10	840.1	.3697
#1	.0019	.0268	.0206	-.0029	.0650	-.0004	97.15
#2	.0009	.0232	.0224	-.0036	.0151	.0006	97.65

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0024	-.0051	2.296	.0226	-.0026	.0044	.0101
SDev	.0014	.0007	.029	.0000	.0009	.0015	.0000
%RSD	58.39	13.70	1.282	.1646	35.52	34.45	.1396
#1	.0033	-.0046	2.275	.0227	-.0019	.0054	.0101
#2	.0014	-.0056	2.317	.0226	-.0032	.0033	.0101

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0028	.0296	-.0084	.0235	.0005	-.0007	.0001
SDev	.0011	.0000	.0002	.0824	.0004	.0005	.0000
%RSD	38.51	.1355	2.595	350.3	71.30	72.28	38.10
#1	-.0021	.0296	-.0085	-.0348	.0008	-.0004	.0001
#2	-.0036	.0296	-.0082	.0818	.0003	-.0011	.0001

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0016	.0014
SDev	.0001	.0008
%RSD	3.576	59.14
#1	.0015	.0008
#2	.0016	.0020

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1635380	10000	--	--	--	--	--
SDev	6093.139	.0000000	--	--	--	--	--
%RSD	.3725824	.0000000	--	--	--	--	--
#1	1631072	10000	--	--	--	--	--
#2	1639689	10000	--	--	--	--	--

011002

Analysis Report 03/31/16 09:11:26 AM page 1

Method: DAILY2 Sample Name: ZZZZ Operator:
Run Time: 03/31/16 09:06:33
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0013	.0008	.0024	.9146	-.0000	-.0000	-.0012
SDev	.0013	.0075	.0021	.0941	.0000	.0000	.0099
%RSD	100.4	914.8	87.57	10.29	46.55	109.5	835.7
#1	.0004	-.0045	.0009	.9811	-.0000	-.0001	-.0082
#2	.0023	.0061	.0038	.8480	-.0001	-.0000	.0058

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0030	.0002	.0006	.0011	-.0008	.0127	.0058
SDev	.0011	.0002	.0006	.0016	.0002	.0273	.0326
%RSD	35.08	118.4	107.8	155.4	25.74	215.8	563.5
#1	.0023	.0000	.0001	-.0001	-.0009	-.0067	-.0173
#2	.0038	.0004	.0011	.0022	-.0006	.0320	.0289

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0017	.0017	.0082	.0003	.0001	.2721	-.0285
SDev	.0034	.0000	.0078	.0001	.0013	.3869	.0082
%RSD	203.4	1.585	95.46	29.82	1113.	142.2	28.87
#1	-.0007	.0017	.0027	.0004	.0010	-.0014	-.0343
#2	.0041	.0017	.0137	.0002	-.0008	.5457	-.0227

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0011	.0050	-.0032	.0035	-.0329	.0006	97.51
SDev	.0000	.0005	.0006	.0049	.0469	.0018	.57
%RSD	4.416	9.295	17.49	141.2	142.6	307.1	.5857
#1	-.0010	.0047	-.0028	.0000	.0003	-.0007	97.91
#2	-.0011	.0054	-.0036	.0069	-.0661	.0018	97.11

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0008	-.0056	.0243	-.0004	-.0034	.0027	.0001
SDev	.0068	.0030	.0009	.0002	.0042	.0001	.0001
%RSD	803.0	53.23	3.544	49.39	123.8	4.296	55.51
#1	-.0040	-.0077	.0250	-.0003	-.0064	.0026	.0001
#2	.0057	-.0035	.0237	-.0006	-.0004	.0028	.0002

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0022	-.0001	-.0028	.0410	-.0007	.0020	-.0001
SDev	.0055	.0001	.0062	.1173	.0001	.0054	.0000
%RSD	255.7	85.21	222.2	285.9	9.368	267.2	32.17
#1	.0018	-.0000	-.0072	-.0419	-.0007	-.0018	-.0001
#2	-.0061	-.0001	.0016	.1240	-.0006	.0059	-.0002

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0003	.0002
SDev	.0001	.0018
%RSD	31.13	792.4
#1	.0003	-.0010
#2	.0004	.0015

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1637062	10000	--	--	--	--	--
SDev	9555.841	.0000000	--	--	--	--	--
%RSD	.5837190	.0000000	--	--	--	--	--
#1	1643819	10000	--	--	--	--	--
#2	1630305	10000	--	--	--	--	--

011004

Analysis Report 03/31/16 09:16:32 AM page 1

Method: DAILY2 Sample Name: CRI Operator:
Run Time: 03/31/16 09:11:40
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0039	.0613	.0071	H.6599	.0049	.0049	L-.0063
SDev	.0095	.0567	.0126	.0408	.0001	.0002	.0350
%RSD	244.8	92.58	179.2	6.176	2.872	4.909	558.5
#1	L-.0028	L.0212	L-.0019	H.6888	.0050	.0047	L-.0310
#2	.0105	.1014	H.0160	H.6311	.0048	.0050	.0185
Errors	LC Low	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Low
High	.0150	.1500	.0150	.0600	.0075	.0075	.0300
Low	.0050	.0500	.0050	.0200	.0025	.0025	.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1017	.0045	L.0007	L.0000	.0038	L-.0015	L.2018
SDev	.0136	.0012	.0057	.0094	.0002	.1913	.2059
%RSD	13.35	26.03	866.5	71470.	6.293	12640.	102.0
#1	.0921	.0037	L-.0034	L-.0066	.0040	L-.1368	L.0562
#2	.1113	.0053	.0047	.0066	.0037	.1338	.3474
Errors	LC Pass	LC Pass	LC Low	LC Low	LC Pass	LC Low	LC Low
High	.1500	.0075	.0075	.0075	.0075	.1500	.7500
Low	.0500	.0025	.0025	.0025	.0025	.0500	.2500

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0004	.0103	L.0228	.0052	.0057	L-.9194	.1308
SDev	.0167	.0004	.0448	.0002	.0000	2.3689	.0593
%RSD	4506.	4.409	196.3	3.773	.6218	257.7	45.34
#1	L-.0114	.0100	L-.0089	.0053	.0057	L-2.594	L.0889
#2	.0122	.0106	.0545	.0051	.0057	H.7557	.1727
Errors	LC Low	LC Pass	LC Low	LC Pass	LC Pass	LC Low	LC Pass
High	.0150	.0150	.1000	.0075	.0075	.5000	.5000
Low	.0050	.0050	.0250	.0025	.0025	.1250	.1250

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0038	.0098	.0057	L-.0109	L.0155	.0281	94.30
SDev	.0001	.0098	.0026	.0457	.0523	.0096	.49
%RSD	3.490	100.3	45.43	419.3	336.8	34.21	.5211
#1	.0039	.0167	.0039	L-.0432	L-.0215	H.0350	93.96
#2	.0037	.0028	.0076	.0214	.0525	.0213	94.65
Errors	LC Pass	NOCHECK	NOCHECK	LC Low	LC Low	LC Pass	NOCHECK
High	.0075			.0300	.0750	.0300	
Low	.0025			.0100	.0250	.0100	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0116	.0061	.0845	.0071	.0079	.0071	.0049
SDev	.0123	.0063	.0349	.0015	.0001	.0066	.0006
%RSD	105.9	104.1	41.31	21.64	1.499	93.12	11.47
#1	.0204	.0016	.0598	H.0082	.0079	L.0024	.0045
#2	.0029	.0106	.1091	.0060	.0080	.0118	.0053
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			.1500	.0075	.0150	.0150	.0075
Low			.0500	.0025	.0050	.0050	.0025

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0252	.0046	L.0065	L-.0854	.0032	.0104	.0049
SDev	.0152	.0005	.0120	.5371	.0003	.0139	.0001
%RSD	60.43	10.05	186.3	629.3	9.189	134.0	2.101
#1	H.0360	.0049	L-.0021	L-.4651	.0034	L.0005	.0050
#2	.0144	.0042	.0150	.2944	.0030	.0202	.0048
Errors	LC Pass	LC Pass	LC Low	LC Low	LC Pass	LC Pass	LC Pass
High	.0300	.0075	.0300	.3000	.0075	.0300	.0075
Low	.0100	.0025	.0100	.1000	.0025	.0100	.0025

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0046	L-.0010
SDev	.0013	.0099
%RSD	27.83	1008.
#1	.0037	L-.0080
#2	.0055	.0060
Errors	LC Pass	LC Low
High	.0075	.0075
Low	.0025	.0025

011006

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1583264	10000	--	--	--	--	--
SDev	8222.944	.0000000	--	--	--	--	--
%RSD	.5193664	.0000000	--	--	--	--	--
#1	1577450	10000	--	--	--	--	--
#2	1589079	10000	--	--	--	--	--

011007

Analysis Report 03/31/16 09:21:39 AM page 1

Method: DAILY2 Sample Name: CRI-N Operator:
Run Time: 03/31/16 09:16:47
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0209	.2139	.0209	H.5370	.0104	.0101	.0351
SDev	.0019	.0123	.0028	.0225	.0001	.0000	.0082
%RSD	9.222	5.752	13.52	4.190	.6057	.3033	23.43
#1	.0196	.2052	.0189	H.5529	.0104	.0101	.0293
#2	.0223	.2226	.0229	H.5211	.0104	.0101	.0410
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass
High	.0260	.2600	.0260	.1040	.0130	.0130	.0520
Low	.0140	.1400	.0140	.0560	.0070	.0070	.0280

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2160	.0108	.0106	.0093	.0088	.1893	L.6328
SDev	.0043	.0005	.0015	.0014	.0009	.0138	.0379
%RSD	1.980	4.987	14.34	15.38	10.11	7.294	5.984
#1	.2130	.0104	.0095	.0083	.0082	.1795	L.6061
#2	.2190	.0112	.0117	.0104	.0095	.1991	L.6596
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low
High	.2600	.0130	.0130	.0130	.0130	.2600	1.300
Low	.1400	.0070	.0070	.0070	.0070	.1400	.7000

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0191	.0202	.1073	.0104	.0097	.4190	.3860
SDev	.0032	.0001	.0078	.0000	.0009	.3607	.0070
%RSD	16.92	.5851	7.267	.0162	8.894	86.08	1.815
#1	.0168	.0201	.1018	.0104	.0091	L.1640	.3810
#2	.0214	.0202	.1128	.0104	.0103	H.6741	.3909
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0260	.0260	.1300	.0130	.0130	.6500	.6500
Low	.0140	.0140	.0700	.0070	.0070	.3500	.3500

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0090	.0097	.0113	.0361	.1156	.0367	93.70
SDev	.0005	.0019	.0010	.0059	.0112	.0100	.58
%RSD	5.670	19.32	8.687	16.31	9.707	27.21	.6200
#1	.0093	.0110	.0120	.0320	.1236	.0297	94.11
#2	.0086	.0084	.0106	.0403	.1077	.0438	93.29
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	.0130			.0520	.1300	.0520	
Low	.0070			.0280	.0700	.0280	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0161	.0163	.2107	.0108	.0162	.0235	.0106
SDev	.0047	.0060	.0110	.0013	.0024	.0021	.0001
%RSD	29.29	37.07	5.221	11.89	15.09	8.738	1.037
#1	.0128	.0206	.2029	.0117	.0180	.0220	.0105
#2	.0195	.0120	.2185	.0099	.0145	.0249	.0107
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			.2600	.0130	.0260	.0260	.0130
Low			.1400	.0070	.0140	.0140	.0070

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0386	.0092	.0330	.3617	.0087	.0443	.0098
SDev	.0012	.0001	.0114	.1148	.0003	.0026	.0001
%RSD	3.058	.5727	34.67	31.74	2.994	5.941	1.559
#1	.0394	.0091	L.0249	.2806	.0089	.0425	.0097
#2	.0378	.0092	.0411	.4429	.0085	.0462	.0099
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0520	.0130	.0520	.5200	.0130	.0520	.0130
Low	.0280	.0070	.0280	.2800	.0070	.0280	.0070

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0110	.0086
SDev	.0004	.0006
%RSD	3.431	6.973
#1	.0107	.0081
#2	.0112	.0090
Errors	LC Pass	LC Pass
High	.0130	.0130
Low	.0070	.0070

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1573175	10000	--	--	--	--	--
SDev	9823.127	.0000000	--	--	--	--	--
%RSD	.6244142	.0000000	--	--	--	--	--
#1	1580121	10000	--	--	--	--	--
#2	1566229	10000	--	--	--	--	--

011010

Analysis Report 03/31/16 09:26:46 AM page 1

Method: DAILY2 Sample Name: ICSA Operator:
Run Time: 03/31/16 09:21:53
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0026	475.9	.0011	.3612	.0025	.0000	.0109
SDev	.0002	1.3	.0024	.0240	.0003	.0000	.0005
%RSD	9.264	.2760	216.9	6.645	12.13	13.30	4.730
#1	-.0025	476.9	-.0006	.3782	.0027	.0001	.0113
#2	-.0028	475.0	.0028	.3442	.0023	.0000	.0105
Errors	NOCHECK	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High		600.0					
Low		400.0					

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	454.6	.0010	-.0038	-.0005	-.0027	195.7	-.0133
SDev	1.5	.0001	.0004	.0007	.0013	.4	.0150
%RSD	.3377	6.606	11.69	152.3	47.55	.1847	113.2
#1	453.6	.0010	-.0042	.0000	-.0018	195.4	-.0027
#2	455.7	.0009	-.0035	-.0010	-.0036	195.9	-.0239
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	NOCHECK
High	600.0					240.0	
Low	400.0					160.0	

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0022	.0033	546.2	.0224	-.0016	.1730	-.0059
SDev	.0010	.0001	.7	.0002	.0013	.1654	.0002
%RSD	46.81	2.607	.1209	.7236	80.57	95.65	4.118
#1	-.0015	.0034	546.6	.0225	-.0007	.2899	-.0061
#2	-.0029	.0032	545.7	.0222	-.0025	.0560	-.0058
Errors	NOCHECK	NOCHECK	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High			600.0				
Low			400.0				

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	-.0030	.0955	-.0444	.1041	-.0435	-.0086	84.63
SDev	.0007	.0040	.0003	.0026	.0225	.0096	.31
%RSD	24.04	4.219	.7340	2.504	51.61	111.4	.3664
#1	-.0025	.0926	-.0442	.1060	-.0277	-.0153	84.41
#2	-.0035	.0983	-.0447	.1023	-.0594	-.0018	84.85
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0012	-.0067	.0038	.0022	-.0040	-.0056	.0038
SDev	.0022	.0003	.0018	.0011	.0009	.0032	.0000
%RSD	181.4	3.996	48.95	50.90	23.07	57.45	.0665
#1	-.0004	-.0068	.0051	.0014	-.0047	-.0033	.0038
#2	.0028	-.0065	.0025	.0030	-.0034	-.0079	.0038
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0035	.0027	.0013	.0406	-.0033	.0044	-.0004
SDev	.0067	.0003	.0102	.0156	.0008	.0015	.0003
%RSD	193.1	12.88	781.3	38.50	25.51	35.15	73.38
#1	.0082	.0029	-.0059	.0517	-.0027	.0055	-.0002
#2	-.0013	.0024	.0085	.0296	-.0039	.0033	-.0006
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	-.0049	-.0020
SDev	.0001	.0006
%RSD	1.795	29.12
#1	-.0050	-.0016
#2	-.0049	-.0025
Errors	NOCHECK	NOCHECK
High		
Low		

011012

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1421026	10000	--	--	--	--	--
SDev	5128.645	.0000000	--	--	--	--	--
%RSD	.3609116	.0000000	--	--	--	--	--
#1	1417399	10000	--	--	--	--	--
#2	1424652	10000	--	--	--	--	--

011013

Analysis Report 03/31/16 09:31:53 AM page 1

Method: DAILY2 Sample Name: ICSAB Operator:
Run Time: 03/31/16 09:27:00
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.091	476.2	1.110	H1.311	.5204	.5116	.0179
SDev	.002	.1	.011	.031	.0001	.0001	.0017
%RSD	.2151	.0297	1.003	2.353	.0296	.0260	9.710
#1	1.089	476.1	1.117	H1.332	.5203	.5115	.0191
#2	1.092	476.3	1.102	H1.289	.5205	.5117	.0167
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	NOCHECK
High	1.200	600.0	1.200	1.200	.6000	.6000	
Low	.8000	400.0	.8000	.8000	.4000	.4000	

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	456.7	1.028	.5028	.4898	.5242	196.5	-.0203
SDev	2.1	.001	.0012	.0022	.0006	1.0	.0520
%RSD	.4665	.0969	.2354	.4382	.1201	.5168	256.1
#1	458.2	1.027	.5020	.4883	.5238	197.3	-.0571
#2	455.2	1.029	.5037	.4913	.5246	195.8	.0165
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK
High	600.0	1.200	.6000	.6000	.6000	240.0	
Low	400.0	.8000	.4000	.4000	.4000	160.0	

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0020	H1.275	547.1	.5348	1.050	.1139	-.0091
SDev	.0027	.000	.4	.0001	.007	.6003	.0161
%RSD	131.4	.0301	.0644	.0243	.6632	527.2	177.3
#1	-.0039	H1.275	547.4	.5347	1.045	-.3106	-.0205
#2	-.0001	H1.275	546.9	.5349	1.055	.5383	.0023
Errors	NOCHECK	LC High	LC Pass	LC Pass	LC Pass	NOCHECK	NOCHECK
High		1.200	600.0	.6000	1.200		
Low		.8000	400.0	.4000	.8000		

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.9767	1.149	.9902	.1086	-.0308	1.073	83.74
SDev	.0003	.000	.0063	.0027	.0563	.007	.20
%RSD	.0318	.0006	.6406	2.495	182.6	.6875	.2358
#1	.9769	1.149	.9947	.1067	.0090	1.068	83.60
#2	.9765	1.149	.9857	.1105	-.0707	1.078	83.88
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	NOCHECK
High	1.200					1.200	
Low	.8000					.8000	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

011014

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.065	1.057	1.024	1.042	1.059	1.027	1.050
SDev	.004	.007	.005	.004	.006	.003	.001
%RSD	.3482	.7013	.4554	.4052	.5831	.3104	.0962
#1	1.062	1.052	1.021	1.045	1.054	1.029	1.049
#2	1.067	1.063	1.027	1.039	1.063	1.025	1.051
Errors	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass
High				1.200	1.200	1.200	1.200
Low				.8000	.8000	.8000	.8000

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0105	.9565	1.019	.9998	.5108	.0147	-.0001
SDev	.0080	.0004	.001	.1156	.0004	.0035	.0004
%RSD	75.85	.0472	.1166	11.56	.0854	23.57	307.3
#1	.0162	.9568	1.018	.9181	.5111	.0172	.0001
#2	.0049	.9562	1.019	1.082	.5105	.0123	-.0004
Errors	NOCHECK	LC Pass	LC Pass	NOCHECK	LC Pass	NOCHECK	NOCHECK
High		1.200	1.200		.6000		
Low		.8000	.8000		.4000		

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	1.040	.9469
SDev	.001	.0003
%RSD	.0684	.0348
#1	1.039	.9471
#2	1.040	.9467
Errors	LC Pass	NOCHECK
High	1.200	
Low	.8000	

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1406106	10000	--	--	--	--	--
SDev	3411.083	.0000000	--	--	--	--	--
%RSD	.2425908	.0000000	--	--	--	--	--
#1	1403694	10000	--	--	--	--	--
#2	1408518	10000	--	--	--	--	--

011016

Analysis Report 03/31/16 09:37:00 AM page 1

Method: DAILY2 Sample Name: CCV Operator:
Run Time: 03/31/16 09:32:07
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.031	10.18	5.346	5.351	9.809	1.018	4.980
SDev	.000	.01	.016	.041	.009	.000	.012
%RSD	.0264	.1128	.2909	.7604	.0895	.0117	.2399
#1	1.031	10.17	5.335	5.322	9.803	1.018	4.971
#2	1.031	10.18	5.357	5.379	9.815	1.018	4.988
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.100	11.00	5.500	5.500	11.00	1.100	5.500
Low	.9000	9.000	4.500	4.500	9.000	.9000	4.500

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.61	1.048	5.133	1.970	1.968	10.04	20.07
SDev	.27	.001	.006	.001	.002	.13	.11
%RSD	1.316	.1093	.1079	.0290	.1200	1.339	.5388
#1	20.41	1.047	5.129	1.970	1.966	9.943	20.00
#2	20.80	1.049	5.137	1.970	1.969	10.13	20.15
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.00	1.100	5.500	2.200	2.200	11.00	22.00
Low	18.00	.9000	4.500	1.800	1.800	9.000	18.00

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.002	H5.598	21.03	1.027	4.967	30.10	31.12
SDev	.010	.001	.05	.000	.003	.66	.03
%RSD	.2005	.0262	.2150	.0046	.0690	2.183	.0824
#1	4.995	H5.597	20.99	1.027	4.965	29.63	31.10
#2	5.009	H5.599	21.06	1.027	4.970	30.56	31.13
Errors	LC Pass	LC High	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.500	5.500	22.00	1.100	5.500	33.00	33.00
Low	4.500	4.500	18.00	.9000	4.500	27.00	27.00

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	4.989	5.156	5.120	.9394	H1.153	1.025	92.29
SDev	.008	.009	.030	.0097	.018	.005	.55
%RSD	.1521	.1795	.5938	1.033	1.567	.5264	.6002
#1	4.983	5.149	5.098	.9325	H1.141	1.029	92.69
#2	4.994	5.162	5.141	.9462	H1.166	1.021	91.90
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC High	LC Pass	NOCHECK
High	5.500			1.100	1.100	1.100	
Low	4.500			.9000	.9000	.9000	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.262	5.270	4.989	5.127	5.262	5.127	5.082
SDev	.011	.031	.009	.023	.024	.008	.001
%RSD	.2013	.5851	.1729	.4551	.4573	.1550	.0195
#1	5.254	5.248	4.983	5.110	5.245	5.121	5.082
#2	5.269	5.292	4.995	5.143	5.279	5.132	5.081
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			5.500	5.500	5.500	5.500	5.500
Low			4.500	4.500	4.500	4.500	4.500

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9950	4.881	5.256	5.035	5.089	1.049	4.977
SDev	.0003	.003	.014	.162	.002	.005	.013
%RSD	.0354	.0533	.2757	3.221	.0351	.4345	.2633
#1	.9952	4.880	5.246	4.920	5.088	1.052	4.987
#2	.9947	4.883	5.267	5.149	5.090	1.046	4.968
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.100	5.500	5.500	5.500	5.500	1.100	5.500
Low	.9000	4.500	4.500	4.500	4.500	.9000	4.500

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	1.084	4.766
SDev	.003	.068
%RSD	.2821	1.426
#1	1.082	4.718
#2	1.086	4.814
Errors	LC Pass	LC Pass
High	1.100	5.500
Low	.9000	4.500

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1549558	10000	--	--	--	--	--
SDev	9320.374	.0000000	--	--	--	--	--
%RSD	.6014862	.0000000	--	--	--	--	--
#1	1556148	10000	--	--	--	--	--
#2	1542967	10000	--	--	--	--	--

011019

Analysis Report 03/31/16 09:42:07 AM page 1

Method: DAILY2 Sample Name: CCB Operator:
Run Time: 03/31/16 09:37:14
Comment: Southwest Research Institute
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130	Bi2230
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0009	.0214	.0036	H.2214	.0003	.0000	-.0034
SDev	.0012	.0051	.0030	.0170	.0004	.0001	.0054
%RSD	144.0	24.01	82.87	7.686	144.9	123.4	159.6
#1	-.0000	.0178	H.0057	H.2335	.0006	.0000	-.0072
#2	.0017	.0250	.0015	H.2094	-.0000	.0001	.0004
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass
High	.0050	.0500	.0050	.0500	.0050	.0050	.0100
Low	-.0050	-.0500	-.0050	-.0500	-.0050	-.0050	-.0100

Elem	Ca3179	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0244	.0002	.0008	-.0003	-.0007	.0050	-.0053
SDev	.0020	.0001	.0007	.0009	.0020	.0075	.0435
%RSD	8.327	64.48	92.18	344.5	301.6	150.0	819.0
#1	.0258	.0001	.0003	-.0009	.0007	-.0003	-.0361
#2	.0229	.0002	.0012	.0004	-.0021	.0103	.0255
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0500	.0050	.0050	.0050	.0050	.0500	.1000
Low	-.0500	-.0050	-.0050	-.0050	-.0050	-.0500	-.1000

Elem	La3988	Li6707	Mg2790	Mn2576	Mo2020	Na3302	Na5889
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0006	.0007	.0250	.0004	.0008	-.0011	-.0321
SDev	.0040	.0001	.0033	.0002	.0007	.5171	.0134
%RSD	685.0	13.46	13.30	46.49	87.38	47230.	41.71
#1	-.0022	.0006	.0226	.0005	.0012	L-.3667	-.0415
#2	.0034	.0007	.0273	.0003	.0003	H.3645	-.0226
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0050	.0050	.0500	.0050	.0050	.0500	.0500
Low	-.0050	-.0050	-.0500	-.0050	-.0050	-.0500	-.0500

Elem	Ni2316	2203/1	2203/2	Pd3404	S_1820	Sb2068	Sc3613
Units	ppm	ppm	ppm	ppm	ppm	ppm	%R
Avge	.0000	.0050	-.0002	.0021	H.0382	-.0023	94.62
SDev	.0007	.0013	.0022	.0031	.0204	.0027	.25
%RSD	13900.	25.26	1269.	143.8	53.43	115.5	.2595
#1	.0005	.0041	-.0018	.0043	H.0238	-.0043	94.45
#2	-.0005	.0059	.0014	-.0000	H.0527	-.0004	94.80
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC High	LC Pass	NOCHECK
High	.0050			.0050	.0200	.0100	
Low	-.0050			-.0050	-.0200	-.0100	

Elem	1960/1	1960/2	Si2881	Pb220	Se196	Sn1899	Sr4215

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0088	-.0057	.0050	.0016	-.0009	.0023	.0003
SDev	.0064	.0023	.0025	.0019	.0006	.0020	.0000
%RSD	72.33	39.59	50.17	123.0	70.72	86.41	7.007
#1	.0133	-.0073	.0032	.0002	-.0004	.0009	.0003
#2	.0043	-.0041	.0067	.0029	-.0013	.0038	.0003
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High			.0100	.0050	.0050	.0100	.0050
Low			-.0100	-.0050	-.0050	-.0100	-.0050

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	W_2079	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0049	-.0001	-.0057	-.0014	-.0008	.0049	-.0001
SDev	.0082	.0004	.0007	.1136	.0014	.0003	.0004
%RSD	167.1	310.3	11.49	7944.	172.3	5.600	753.0
#1	.0009	.0002	-.0061	-.0818	.0002	.0047	.0002
#2	L-.0108	-.0004	-.0052	.0789	-.0018	.0051	-.0003
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0100	.0050	.0100	.1000	.0050	.0100	.0050
Low	-.0100	-.0050	-.0100	-.1000	-.0050	-.0100	-.0050

Elem	Zn2062	Zr3496
Units	ppm	ppm
Avge	.0000	-.0003
SDev	.0001	.0006
%RSD	294.2	200.8
#1	-.0000	-.0007
#2	.0001	.0001
Errors	LC Pass	LC Pass
High	.0050	.0050
Low	-.0050	-.0050

IntStd	1	2	3	4	5	6	7
Mode	*Counts	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Sc	--	--	--	--	--	--
Wavlen	361.384	--	--	--	--	--	--
Avge	1588709	10000	--	--	--	--	--
SDev	4105.462	.0000000	--	--	--	--	--
%RSD	.2584150	.0000000	--	--	--	--	--
#1	1585806	10000	--	--	--	--	--
#2	1591612	10000	--	--	--	--	--

011022

SOUTHWEST RESEARCH INSTITUTE
CLIENT: Tetra Tech
TASK ORDER#: 160115-1
SRR#: 56591, 56639, 56785, 56876
SDG: 588049
VTSR: 11.20.15, 12.01.15, 12.01.15, 01.15.16
PROJECT#: 21431.01.001

RANDOM EMANATION RAW DATA

Southwest Research Institute
Lucas Cell Efficiency

James Mah 4/20/16

TO# 160115-1
Project # 21431.01.001

Lucas Cell	Loaded hh:mm	Counted hh:mm	Ingrowth min	Alpha Fact	Gas Vol ml Gas	Cnt Time min	Counts	corr DPM	STD dpm	Eff	AVG	STD	RSD
1	10:06	11:06	65	2.450	10	10	12980	529.7228	804	65.89%			
1	10:06	11:16	75	2.521	10	10	13286	527.0908	804	65.56%			
1	10:06	11:26	85	2.580	10	10	13586	526.5033	804	65.49%	**65.64%**	**0.21%**	**0.32%**
2	11:21	12:21	65	2.450	10	10	12612	514.7044	804	64.02%			
2	11:21	12:31	75	2.521	10	10	13066	518.3628	804	64.47%			
2	11:21	12:41	85	2.580	10	10	13413	519.7989	804	64.65%	**64.38%**	**0.33%**	**0.51%**
3	12:22	13:22	65	2.450	10	10	12362	504.5018	804	62.75%			
3	12:22	13:32	75	2.521	10	10	12522	496.7809	804	61.79%			
3	12:22	13:42	85	2.580	10	10	13034	505.1114	804	62.82%	**62.45%**	**0.58%**	**0.92%**

RSpir 4/20/16

011023

Radon Source Verification via Gamma Spec

Run	Loaded	Counted	Ingrowth	Pb-214	Bi-214	Pb-214 RAW	Pb-214 Raw TPU	Bi-214 RAW	Bi-214 Raw TPU	Gas Vol ml	Cnt Time	Pb-214 Corr	Bi-214 Corr	Ra-226	Ra-226 TPU (1s)	Average	Average TPU (1s)	Standard Label	Criteria
	hh:mm	hh:mm	min	Factor	Factor	pCi	pCi	pCi	pCi	Sample	min	pCi	pCi	DPM/ml	DPM/ml	DPM/ml	DPM/ml	DPM/ml	
1	12:00	17:34	364	0.956	0.860	4.56E+04	2.13E+03	3.86E+04	1.13E+03	1200	60	47712	44875	85.6	4.7				Verified 95-105%R, within 1s error of TV
2	13:00	18:40	370	0.955	0.860	4.39E+04	2.05E+03	3.66E+04	1.07E+03	1200	60	45968	42581	81.9	4.5	84.2	4.6	80.4	
3	14:00	19:41	371	0.955	0.859	4.50E+04	2.10E+03	3.84E+04	1.12E+03	1200	60	47126	44681	84.9	4.7				

Radon Generator Information

Manuf.	Model	Serial No	MFG Date	Ra-226 kBq	Rn-222 mBq/min	Flow Rate ml/min	Rn-222 Bq/ml	Rn-222 DPM/ml
Pylon	RN-1025	A-309	27-Apr-93	1.06E+03	1.34E+05	100	1.34	80.4

011024

Southwest Research Institute
Radon Emanation

TO# 160115-1
Project # 21431.01.001

Sample Information						Counting Information																	
Sys ID	Cond	Initial Ingrowth	Date Counted	Sampled Gas Volume	Lucas Cell #	Time in Lucas Cell	Count Start Time	Count Time	Raw Counts	BG Corr. CPM	Lucas Cell Ingrowth Time	Lucas Cell Ingrowth Factor	RAW DPM	Cnt Err RAW DPM (1s)	MDA RAW DPM	Initial Ingrowth Time	Corr. Activity	Cnt Err Corr Activity (1s)	MDA	Sample weigt	Corr. Activity	TPU Corr Activity (1s)	MDA
		mm/dd/yy hh:mm	mm/dd/yy	ml		hh:mm	hh:mm	mm			min					min	DPM/samp	DPM/samp	DPM/samp	g	pCi/g	pCi/g	pCi/g
590214	2	03/04/16 20:25	03/14/16	10.0	3	8:18	9:22	30	2656	88.5	79	2.5397	55.8	1.1	5.1	13673	6659	129	609	51.840	57.9	3.1	5.3
591000	2	03/04/16 20:25	03/14/16	10.0	1	8:58	9:58	30	5642	186.7	75	2.5206	112.8	1.5	7.1	13713	13448	180	846	50.077	121	6.3	7.6
588049	1	03/04/16 18:35	03/14/16	10.0	2	9:51	10:51	30	20416	680.4	75	2.5206	419.3	2.9	13.7	13876	49760	348	1627	50.517	444	22	15
590214	1	03/04/16 18:35	03/14/16	10.0	3	10:23	11:23	30	4269	142.3	75	2.5206	90.4	1.4	6.5	13908	10717	164	770	50.318	95.9	5.0	6.9
591000	1	03/04/16 18:35	03/14/16	10.0	1	10:58	11:58	30	7554	250.4	75	2.5206	151.3	1.8	8.2	13943	17929	207	972	50.711	159	8.2	8.6
588049D	1	03/04/16 18:35	03/14/16	10.0	2	11:29	12:29	30	19383	645.9	75	2.5141	399.1	2.9	13.4	13974	47242	339	1586	50.529	421	21	14
588556	2	03/04/16 20:25	03/14/16	10.0	3	12:00	13:00	30	7745	258.1	75	2.5141	164.4	1.9	8.8	13895	19502	222	1038	54.971	160	8.2	8.5
588556R	1	03/04/16 18:35	03/14/16	10.0	1	12:33	13:33	30	7098	235.2	75	2.5141	142.5	1.7	8.0	14038	16843	201	942	51.770	147	7.5	8.2
588049	2	03/04/16 20:25	03/14/16	10.0	2	13:05	14:05	30	9451	314.9	75	2.5141	194.5	2.0	9.4	13960	23037	237	1110	53.498	194	9.9	9.3
588556D	2	03/04/16 20:25	03/14/16	10.0	3	13:36	14:36	30	7866	262.2	75	2.5141	167.0	1.9	8.8	13991	19757	223	1044	55.580	160	8.2	8.5
590213	2	03/04/16 20:25	03/14/16	10.0	1	14:10	15:10	30	6441	213.3	75	2.5141	129.2	1.6	7.6	14025	15280	192	898	52.018	132	6.8	7.8
590212	2	03/04/16 20:25	03/14/16	10.0	2	14:42	15:42	30	10175	339.0	75	2.5206	208.9	2.1	9.7	14057	24676	245	1145	51.714	215	11	10
590213	1	03/04/16 18:35	03/14/16	10.0	3	15:12	16:13	30	13867	462.2	76	2.5206	293.6	2.5	11.7	14197	34558	293	1372	50.300	309	16	12
590212	1	03/04/16 18:35	03/14/16	10.0	1	15:45	16:45	30	27132	903.0	75	2.5141	547.2	3.3	15.5	14230	64349	391	1827	50.548	573	29	16
588049-2	2	03/04/16 20:25	03/14/16	10.0	3	16:52	17:52	30	8572	285.7	75	2.5141	182.0	2.0	9.2	14187	21422	231	1084	53.498	180	9.2	9.1

LCS Calculation

Sys ID	Cond	Initial Ingrowth	Date Counted	Sampled Gas Volume	Lucas Cell #	Time in Lucas Cell	Count Start Time	Count Time	Raw Counts	BG Corr. CPM	Lucas Cell Ingrowth Time	Lucas Cell Ingrowth Factor	RAW DPM	Cnt Err RAW DPM (1s)	MDA RAW DPM	Initial Ingrowth Time	Corr. Activity	Cnt Err Corr Activity (1s)	MDA	
		mm/dd/yy hh:mm	mm/dd/yy	ml		hh:mm	hh:mm	mm			min					min	DPM	DPM	DPM	
LCS		03/14/16 10:31	03/14/16	10.0	2	16:21	17:21	30	40856	1361.7	75	2.5206	839.1	4.2	19.4	350	87.7	0.4	2.0	109%

Cell Calibration

Cell #	Efficiency
1	65.64%
2	64.38%
3	62.45%

Background

Time/Date	Count Time	Counts	CPM
03/14/16 6:38	30	42	1.40
03/14/16 7:09	30	5	0.17
03/14/16 7:42	30	1	0.03

011025

Southwest Research Institute
Radon Emanation

TO# 160115-1
Project # 21431.01.001

Sample Information			Counting Information																			
Sys ID	Cond	Initial Ingrowth	Date Counted	Sampled Gas Volume	Lucas Cell #	Time in Lucas Cell	Count Start Time	Count Time	Raw Counts	BG Corr. CPM	Lucas Cell Ingrowth Time	Lucas Cell Ingrowth Factor	RAW DPM	Cnt Err RAW DPM (1s)	MDA RAW DPM	Initial Ingrowth Time	Corr. Activity	Cnt Err Corr Activity (1s)	MDA	Sample weigt	Corr. Activity	TPU Corr Activity (1s)	MDA
		mm/dd/yy hh:mm	mm/dd/yy	ml		hh:mm	hh:mm	mm			min					min	DPM/samp	DPM/samp	DPM/samp	g	pCi/g	pCi/g	pCi/g
PB	---	03/10/16 17:30	03/15/16	10.0	3	7:46	8:46	30	2	0.0	75	2.5206	-0.021	0.030	0.20	6616	-3.7	5	35	50	-0.03	0.05	0.32
590214	4	03/10/16 16:35	03/15/16	10.0	2	8:19	9:19	30	1263	42.0	75	2.5206	25.9	0.7	3.5	6704	4446	125	594	51.435	39	2.2	5.2
590214	7	03/10/16 17:00	03/15/16	10.0	1	8:51	9:51	30	1953	64.0	75	2.5206	38.7	0.9	4.2	6711	6642	153	722	52.58	57	3.1	6.2
591000	4	03/10/16 16:35	03/15/16	10.0	3	9:22	10:22	30	2556	85.1	75	2.5206	54.1	1.1	5.0	6767	9239	183	862	47.666	87	4.7	8.1
591000	7	03/10/16 17:47	03/15/16	10.0	2	9:55	10:55	30	7101	236.6	75	2.5206	145.8	1.7	8.1	6728	25005	297	1391	53.34	211	11	12
590214	4	03/10/16 16:35	03/15/16	20.0	1	10:27	11:27	30	2913	96.0	75	2.5206	58.0	1.1	5.1	6832	4926	92	435	51.435	43	2.3	3.8
588556	4	03/10/16 16:35	03/15/16	10.0	3	10:59	11:59	30	4425	147.4	75	2.5141	93.9	1.4	6.6	6864	15900	239	1123	54.275	132	6.9	9.3
588556	7	03/10/16 17:21	03/15/16	10.0	2	11:30	12:30	30	9369	312.2	75	2.5206	192.4	2.0	9.3	6849	32626	337	1578	54.67	269	14	13
591000-2	4	03/10/16 16:35	03/15/16	10.0	1	12:03	13:03	30	2801	92.2	75	2.5206	55.7	1.1	5.0	6928	9386	180	845	47.666	89	4.7	8.0
588556D	4	03/10/16 16:35	03/15/16	10.0	3	12:34	13:34	30	5148	171.5	75	2.5141	109.2	1.5	7.1	6959	18341	256	1200	52.722	157	8.1	10
588556D	7	03/10/16 18:12	03/15/16	10.0	2	13:06	14:06	30	8322	277.3	75	2.5206	170.9	1.9	8.8	6894	28859	317	1482	50.97	255	13	13
590213	4	03/10/16 16:35	03/15/16	10.0	1	13:38	14:38	30	3448	113.8	75	2.5141	69.0	1.2	5.6	7023	11513	198	931	51.567	101	5.3	8.1
588049	4	03/10/16 16:35	03/15/16	10.0	3	14:10	15:10	30	5156	171.8	75	2.5141	109.4	1.5	7.2	7055	18213	254	1191	52.95	155	8.0	10
590213	7	03/10/16 17:59	03/15/16	10.0	2	14:42	15:43	30	9824	327.3	76	2.5271	201.2	2.0	9.5	7003	33651	340	1590	55.00	276	14	13
590212	4	03/10/16 16:35	03/15/16	10.0	1	15:15	16:15	30	6319	209.5	75	2.5206	126.6	1.6	7.5	7120	20961	265	1243	50.70	186	9.6	11
Capsul	---	03/11/16 8:38	03/15/16	10.0	3	15:46	16:47	30	7077	235.8	76	2.5271	149.4	1.8	8.3	6188	27055		1508	4	3047	152.3	169.8
588049	7	03/10/16 17:11	03/15/16	10.0	2	16:18	17:19	30	14944	498.0	76	2.5206	306.9	2.5	11.7	7147	50684	415	1939	56.42	405	21	15
590212	7	03/10/16 17:36	03/15/16	10.0	1	16:51	17:51	30	16241	540.2	75	2.5141	327.4	2.6	12.0	7155	54028	425	1986	56.40	432	22	16

LCS Calculation

Sys ID	Cond	Initial Ingrowth	Date Counted	Sampled Gas Volume	Lucas Cell #	Time in Lucas Cell	Count Start Time	Count Time	Raw Counts	BG Corr. CPM	Lucas Cell Ingrowth Time	Lucas Cell Ingrowth Factor	RAW DPM	Cnt Err RAW DPM (1s)	MDA RAW DPM	Initial Ingrowth Time	Corr. Activity	Cnt Err Corr Activity (1s)	MDA	
		mm/dd/yy hh:mm	mm/dd/yy	ml		hh:mm	hh:mm	mm			min					min	DPM	DPM	DPM	
LCS	---	03/15/16 13:09	03/15/16	10.0	3	17:22	18:22	30	39803	1326.7	75	2.5206	842.7	4.2	19.7	253	87.0	0.4	2.0	108%

Cell Calibration Background

Cell #	Efficiency	Time/Date	Count Time	Counts	CPM
1	65.64%	03/15/16 6:46	30	34	1.13
2	64.38%	03/15/16 7:21	30	4	0.13
3	62.45%	03/15/16 7:55	30	3	0.10

011026

Southwest Research Institute
Radon Emanation

TO# 160115-1
Project # 21431.01.001

Sample Information						Counting Information																	
Sys ID	Cond	Initial Ingrowth	Date Counted	Sampled Gas Volume	Lucas Cell #	Time in Lucas Cell	Count Start Time	Count Time	Raw Counts	BG Corr. CPM	Lucas Cell Ingrowth Time	Lucas Cell Ingrowth Factor	RAW DPM	Cnt Err RAW DPM (1s)	MDA RAW DPM	Initial Ingrowth Time	Corr. Activity	Cnt Err Corr Activity (1s)	MDA	Sample weigt	Corr. Activity	TPU Corr Activity (1s)	MDA
		mm/dd/yy hh:mm	mm/dd/yy	ml		hh:mm	hh:mm	mm			min					min	DPM/samp	DPM/samp	DPM/samp	g	pCi/g	pCi/g	pCi/g
590214	3	03/04/16 21:15	03/16/16	10.0	3	7:31	8:34	30	1793	59.5	78	2.5397	37.5	0.9	4.2	16456	4206	100	471	51.653	37	2.0	4.1
590214	5	03/11/16 19:00	03/16/16	10.0	2	8:05	9:05	30	2802	93.4	75	2.5206	57.5	1.1	5.1	6545	10044	190	893	61.067	74	4.0	6.6
591000	5	03/11/16 18:35	03/16/16	10.0	1	8:37	9:37	30	9731	323.1	75	2.5206	195.3	2.0	9.3	6602	33905	345	1615	63.786	239	12	11
591000	3	03/04/16 21:15	03/16/16	10.0	3	9:10	10:10	30	4110	136.7	75	2.5206	86.9	1.4	6.4	16555	9721	152	714	47.358	92	4.8	6.8
588556	5	03/11/16 19:00	03/16/16	10.0	2	9:42	10:42	30	11114	370.4	75	2.5206	228.3	2.2	10.1	6642	39477	374	1752	64.727	275	14	12
588556	3	03/04/16 21:20	03/16/16	10.0	1	10:15	11:15	30	5179	171.4	75	2.5206	103.6	1.4	6.8	16615	11581	162	760	53.176	98	5.1	6.4
591000-2	5	03/11/16 18:35	03/16/16	10.0	3	10:47	11:47	30	10614	353.5	75	2.5141	225.2	2.2	10.2	6732	38607	375	1755	63.786	273	14	12
590213	5	03/11/16 18:35	03/16/16	10.0	2	11:19	12:19	30	12076	402.5	75	2.5141	248.7	2.3	10.6	6764	42511	387	1810	56.325	340	17	14
590213	3	03/04/16 21:15	03/16/16	10.0	1	11:51	12:51	30	7052	233.8	75	2.5206	141.3	1.7	7.9	16716	15772	189	885	51.321	138	7.1	7.8
588556R	1	03/04/16 18:35	03/16/16	10.0	3	12:23	13:23	30	7294	242.9	75	2.5206	154.3	1.8	8.5	16908	17161	201	942	51.77	149	7.7	8.2
588049	5	03/11/16 18:35	03/16/16	10.0	2	12:55	13:56	30	12406	413.5	76	2.5271	254.2	2.3	10.7	6860	43063	387	1808	66.795	290	15	12
588049	3	03/04/16 21:15	03/16/16	10.0	1	13:27	14:27	30	9127	303.0	75	2.5141	183.6	1.9	9.0	16812	20456	215	1006	51.71	178	9.1	8.8
588049D	5	03/11/16 18:35	03/16/16	10.0	3	14:00	15:00	30	20297	676.3	75	2.5141	430.7	3.0	14.1	6925	72548	509	2380	67.687	483	24	16
588049D	3	03/04/16 21:20	03/16/16	10.0	2	14:32	15:33	30	9616	320.5	76	2.5271	197.0	2.0	9.4	16872	21926	224	1047	51.585	191	9.8	9.1
590212	5	03/11/16 19:00	03/16/16	10.0	1	15:04	16:04	30	21432	713.2	75	2.5141	432.1	3.0	13.8	6964	72531	496	2318	56.844	575	29	18
590212	3	03/04/16 21:20	03/16/16	10.0	3	15:36	16:36	30	11430	380.7	75	2.5206	241.9	2.3	10.6	16936	26890		1177	50.602	239	12	10
588049	5	03/11/16 18:35	03/16/16	10.0	2	16:08	17:08	30	11886	396.2	75	2.5206	244.1	2.2	10.5	7053	40652	373	1744	66.795	274	14	12
588049D	5	03/11/16 18:35	03/16/16	10.0	1	16:40	17:42	30	20455	680.6	77	2.5271	410.3	2.9	13.4	7085	68129	477	2229	67.687	453	23	15

LCS Calculation

Sys ID	Cond	Initial Ingrowth	Date Counted	Sampled Gas Volume	Lucas Cell #	Time in Lucas Cell	Count Start Time	Count Time	Raw Counts	BG Corr. CPM	Lucas Cell Ingrowth Time	Lucas Cell Ingrowth Factor	RAW DPM	Cnt Err RAW DPM (1s)	MDA RAW DPM	Initial Ingrowth Time	Corr. Activity	Cnt Err Corr Activity (1s)	MDA	
		mm/dd/yy hh:mm	mm/dd/yy	ml		hh:mm	hh:mm	mm			min					min	DPM	DPM	DPM	
LCS	----	03/15/16 13:09	03/16/16	10.0	3	17:13	18:40	30	33882	1129.1	102	2.6597	679.8	3.7	17.2	1684	84.0	0.5	2.1	105%

Cell Calibration — Background

Cell #	Efficiency	Time/Date	Count Time	Counts	CPM
1	65.64%	03/16/16 6:40	30	37	1.23
2	64.38%	03/16/16 7:23	30	1	0.03
3	62.45%	03/16/16 8:04	30	8	0.27

011027

Southwest Research Institute
Radon Emanation

TO# 160115-1
Project # 21431.01.001

Sample Information						Counting Information																	
Sys ID	Cond	Initial Ingrowth	Date Counted	Sampled Gas Volume	Lucas Cell #	Time in Lucas Cell	Count Start Time	Count Time	Raw Counts	BG Corr. CPM	Lucas Cell Ingrowth Time	Lucas Cell Ingrowth Factor	RAW DPM	Cnt Err RAW DPM (1s)	MDA RAW DPM	Initial Ingrowth Time	Corr. Activity	Cnt Err Corr Activity (1s)	MDA	Sample weigt	Corr. Activity	TPU Corr Activity (1s)	MDA
		mm/dd/yy hh:mm	mm/dd/yy	ml		hh:mm	hh:mm	mm			min					min	DPM/samp	DPM/samp	DPM/samp	g	pCi/g	pCi/g	pCi/g
PB	----	03/10/16 17:30	03/17/16	10.0	3	7:15	8:19	30	3	0.1	79	2.5458	0.04	0.04	0.23	9465	6	5	33	50	0.05	0.05	0.29
590214	#2	03/04/16 20:25	03/17/16	10.0	2	7:51	8:51	30	2671	88.9	75	2.5141	54.9	1.1	5.0	17966	6011	116	548	51.840	52	2.8	4.8
590214	#6	03/11/16 20:00	03/17/16	10.0	1	8:23	9:24	30	2774	91.1	76	2.5271	54.9	1.1	5.0	7943	8511	164	772	55.438	69	3.7	6.3
591000	#2	03/04/16 20:25	03/17/16	10.0	3	8:59	9:59	30	5626	187.5	75	2.5206	119.1	1.6	7.4	18034	13016	174	814	50.077	117	6.1	7.3
591000	#6	03/11/16 19:35	03/17/16	10.0	2	9:31	10:31	30	10168	338.8	75	2.5206	208.8	2.1	9.7	8036	32152	319	1493	50.867	285	14.5	13
588556	#2	03/04/16 20:20	03/17/16	10.0	1	10:03	11:03	30	8483	281.4	75	2.5206	170.0	1.9	8.7	18103	18565	203	949	54.971	152	7.8	7.8
588556	#6	03/11/16 19:35	03/17/16	10.0	3	10:35	11:35	30	16155	538.5	75	2.5141	342.9	2.7	12.6	8100	52567	414	1933	58.238	407	21	15
588556D	#2	03/04/16 20:20	03/17/16	10.0	2	11:07	12:07	30	8621	287.3	75	2.5141	177.5	1.9	9.0	18167	19359	209	977	55.580	157	8.0	7.9
588556D	#6	03/11/16 19:35	03/17/16	10.0	1	11:39	12:39	30	6656	220.5	75	2.5206	133.2	1.6	7.7	8164	20332	251	1175	56.168	163	8.4	9.4
591000-2	#6	03/11/16 19:35	03/17/16	10.0	3	12:11	13:11	30	11457	381.9	75	2.5206	242.6	2.3	10.6	8196	36932	345	1614	50.867	327	17	14
590213	#2	03/04/16 20:20	03/17/16	10.0	2	12:43	13:43	30	7057	235.1	75	2.5141	145.3	1.7	8.1	18263	15824	188	883	52.018	137	7.0	7.6
590213	#6	03/11/16 20:00	03/17/16	10.0	1	13:15	14:17	30	11923	396.0	77	2.5271	238.7	2.2	10.3	8235	36250	333	1558	53.002	308	16	13
588556-2	#6	03/11/16 19:35	03/17/16	10.0	3	13:47	14:47	30	17153	571.7	75	2.5206	363.2	2.8	13.0	8292	54930	419	1960	58.238	425	21	15
588556D-2	#6	03/11/16 19:35	03/17/16	10.0	2	14:19	15:19	30	6426	214.1	75	2.5141	132.3	1.7	7.7	8324	19963	249	1168	56.168	160	8.3	9.4
588049	#2	03/04/16 20:25	03/17/16	10.0	1	14:51	15:51	30	9543	316.7	75	2.5141	191.9	2.0	9.2	18386	20868	215	1004	53.498	176	9.0	8.5
588049	#6	03/11/16 19:35	03/17/16	10.0	3	15:23	16:24	30	20243	674.7	76	2.5206	428.6	3.0	14.1	8388	64405		2115	56.279	515	26	17
590212	#2	03/04/16 20:20	03/17/16	10.0	2	15:55	16:55	30	10667	355.5	75	2.5206	219.0	2.1	9.9	18455	23797	230	1078	51.714	207	10.6	9.4
590212	#6	03/11/16 20:00	03/17/16	10.0	1	16:31	17:31	30	22507	748.8	75	2.5141	453.7	3.0	14.2	8431	67987	454	2120	52.917	579	29	18

LCS Calculation

Sys ID	Cond	Initial Ingrowth	Date Counted	Sampled Gas Volume	Lucas Cell #	Time in Lucas Cell	Count Start Time	Count Time	Raw Counts	BG Corr. CPM	Lucas Cell Ingrowth Time	Lucas Cell Ingrowth Factor	RAW DPM	Cnt Err RAW DPM (1s)	MDA RAW DPM	Initial Ingrowth Time	Corr. Activity	Cnt Err Corr Activity (1s)	MDA	
		mm/dd/yy hh:mm	mm/dd/yy	ml		hh:mm	hh:mm	mm			min					min	DPM	DPM	DPM	
LCS	----	03/15/16 13:09	03/17/16	10.0	3	17:03	18:03	30	26831	894.3	75	2.5141	569.6	3.5	16.2	3114	84.3	0.5	2.4	105%

Cell Calibration — Background

Cell #	Efficiency	Time/Date	Count Time	Counts	CPM
1	65.64%	03/17/16 7:48	30	42	1.40
2	64.38%	03/17/16 7:12	30	3	0.10
3	62.45%	03/17/16 6:42	30	1	0.03

011028

Southwest Research Institute
Radon Emanation

TO# 160115-1
Project # 21431.01.001

Sample Information			Counting Information																			
Sys ID	Cond	Initial Ingrowth	Date Counted	Sampled Gas Volume	Lucas Cell #	Time in Lucas Cell	Count Start Time	Count Time	Raw Counts	BG Corr. CPM	Lucas Cell Ingrowth Time	Lucas Cell Ingrowth Factor	RAW DPM	Cnt Err RAW DPM (1s)	MDA RAW DPM	Initial Ingrowth Time	Corr. Activity	Cnt Err Corr Activity (1s)	MDA	Sample weigt	Corr. Activity	TPU Corr Activity (1s)	MDA
		mm/dd/yy hh:mm	mm/dd/yy	ml		hh:mm	hh:mm	mm			min					min	DPM/samp	DPM/samp	DPM/samp	g	pCi/g	pCi/g	pCi/g
590214	7	03/10/16 17:00	03/18/16	10.0	1	7:44	8:45	30	2551	83.7	76	2.5206	50.6	1.0	4.8	10964	6620	133	627	52.58	57	3.1	5.4
591000	7	03/10/16 17:47	03/18/16	10.0	3	8:21	9:21	30	8878	295.8	75	2.5206	187.9	2.0	9.3	10954	24613	261	1224	53.34	208	11	10
588556	7	03/10/16 17:21	03/18/16	10.0	2	8:53	9:53	30	11997	399.7	75	2.5206	246.3	2.2	10.5	11012	32182	294	1375	54.67	265	13	11
588556D	7	03/10/16 18:12	03/18/16	10.0	1	9:25	10:25	30	10675	354.5	75	2.5141	214.8	2.1	9.8	10993	28086	273	1277	50.97	248	13	11
590213	7	03/10/16 17:59	03/18/16	10.0	3	9:59	10:59	30	12322	410.6	75	2.5206	260.8	2.4	11.0	11040	34042	307	1435	55.00	279	14	12
588049	7	03/10/16 17:11	03/18/16	10.0	2	10:31	11:37	30	19457	648.4	81	2.5518	394.7	2.8	13.2	11120	51334	368	1720	56.42	410	21	14
590212	7	03/10/16 17:36	03/18/16	10.0	1	11:03	12:08	30	21870	727.6	80	2.5458	435.4	2.9	13.8	11127	56620	384	1791	56.40	452	23	14

LCS Calculation

Sys ID	Cond	Initial Ingrowth	Date Counted	Sampled Gas Volume	Lucas Cell #	Time in Lucas Cell	Count Start Time	Count Time	Raw Counts	BG Corr. CPM	Lucas Cell Ingrowth Time	Lucas Cell Ingrowth Factor	RAW DPM	Cnt Err RAW DPM (1s)	MDA RAW DPM	Initial Ingrowth Time	Corr. Activity	Cnt Err Corr Activity (1s)	MDA	
		mm/dd/yy hh:mm	mm/dd/yy	ml		hh:mm	hh:mm	mm			min					min	DPM	DPM	DPM	
LCS	----	03/15/16 13:09	03/18/16	10.0	3	11:40	12:40	30	22989	766.2	75	2.5206	486.7	3.2	15.0	4231	82.9	0.5	2.6	103%

Cell Calibration

Cell #	Efficiency
1	65.64%
2	64.38%
3	62.45%

Background

Time/Date	Count Time	Counts	CPM
03/18/16 6:40	30	41	1.37
03/18/16 6:40	30	6	0.20
03/18/16 6:40	30	4	0.13

011029

Southwest Research Institute
Radon Emanation

TO# 160115-1
Project # 21431.01.001

Sample Information						Counting Information																
Sys ID	Cond	Initial Ingrowth	Date Counted	Sampled Gas Volume	Lucas Cell #	Time in Lucas Cell	Count Start Time	Count Time	Raw Counts	BG Corr. CPM	Lucas Cell Ingrowth Time	Lucas Cell Ingrowth Factor	RAW DPM	Cnt Err RAW DPM (1s)	MDA RAW DPM	Initial Ingrowth Time	Corr. Activity	Cnt Err Corr Activity (1s)	MDA	Sample weigt	Corr. Activity	TPU Corr Activity (1s)	MDA
		mm/dd/yy hh:mm	mm/dd/yy	ml		hh:mm	hh:mm	mm			min					min	DPM/samp	DPM/samp	DPM/samp	g	pCi/g	pCi/g	pCi/g
590214	8	03/14/16 18:00	03/21/16	10.0	3	7:38	8:40	30	2566	85.5	77	2.5334	54.1	1.1	5.0	9458	7612	150	708	52.786	65	3.5	6.0
590214	9	03/15/16 10:15	03/21/16	10.0	2	8:12	9:12	30	3482	115.7	75	2.5206	71.3	1.2	5.7	8517	10625	181	849	57.783	83	4.4	6.6
591000	8	03/14/16 18:00	03/21/16	10.0	1	8:44	9:45	30	2136	69.6	76	2.5271	41.9	0.9	4.4	9524	5883	130	614	54.141	49	2.7	5.1
591000	9	03/15/16 10:15	03/21/16	10.0	3	9:16	10:16	30	10452	348.4	75	2.5206	221.3	2.2	10.1	8581	32835	321	1503	56.555	262	13	12
588556	8	03/14/16 17:43	03/21/16	10.0	2	9:48	10:45	30	7750	258.0	72	2.4938	160.7	1.8	8.6	9605	22446	255	1196	56.992	177	9.1	9.5
588556	9	03/14/16 18:00	03/21/16	10.0	1	10:20	11:20	30	14272	474.1	75	2.5206	286.5	2.4	11.3	9620	39991	336	1570	58.916	306	16	12
588556D	9	03/14/16 18:25	03/21/16	10.0	3	10:52	11:52	30	15006	500.2	75	2.5206	317.7	2.6	12.1	9627	44331	362	1692	59.729	334	17	13
590213	8	03/14/16 18:00	03/21/16	10.0	2	11:24	12:24	30	6491	216.0	75	2.5206	133.1	1.7	7.8	9684	18517	230	1079	52.216	160	8.2	9.3
590213	9	03/14/16 18:25	03/21/16	10.0	1	11:56	12:56	30	13212	438.8	75	2.5141	265.9	2.3	10.9	9691	36968	323	1510	57.957	287	15	12
588049	8	03/14/16 17:43	03/21/16	10.0	3	12:28	13:00	30	10673	355.8	47	2.2902	248.7	2.4	11.3	9765	34451	333	1560	52.490	296	15	13
588049	9	03/14/16 18:25	03/21/16	10.0	2	13:00	14:00	30	8606	286.5	75	2.5206	176.6	1.9	8.9	9755	24469	264	1236	56.946	194	9.9	10
588049D	8	03/14/16 17:43	03/21/16	10.0	1	13:34	14:34	30	10314	342.2	75	2.5141	207.3	2.1	9.6	9831	28619	283	1325	54.016	239	12	11
590212	8	03/14/16 17:43	03/21/16	10.0	3	14:06	15:08	30	14414	480.5	77	2.5271	304.4	2.5	11.9	9863	41953	349	1634	52.103	363	18	14
590212	9	03/14/16 18:25	03/21/16	10.0	2	14:38	15:41	30	19992	666.1	78	2.5397	407.4	2.9	13.5	9853	56167	397	1857	54.431	465	23	15
588049-2	9	03/14/16 18:25	03/21/16	10.0	3	15:45	16:45	30	9090	303.0	75	2.5141	193.0	2.0	9.5	9920	26517	278	1302	56.946	210	11	10

LCS Calculation

Sys ID	Cond	Initial Ingrowth	Date Counted	Sampled Gas Volume	Lucas Cell #	Time in Lucas Cell	Count Start Time	Count Time	Raw Counts	BG Corr. CPM	Lucas Cell Ingrowth Time	Lucas Cell Ingrowth Factor	RAW DPM	Cnt Err RAW DPM (1s)	MDA RAW DPM	Initial Ingrowth Time	Corr. Activity	Cnt Err Corr Activity (1s)	MDA	
		mm/dd/yy hh:mm	mm/dd/yy	ml		hh:mm	hh:mm	mm			min					min	DPM	DPM	DPM	
LCS	----	03/21/16 10:30	03/21/16	10.0	1	15:10	16:13	30	41957	1396.9	78	2.5334	840.0	4.1	19.2	280	87.0	0.4	2.0	108%

Cell Calibration / Background

Cell #	Efficiency	Time/Date	Count Time	Counts	CPM
1	65.64%	03/21/16 8:09	30	49	1.63
2	64.38%	03/21/16 7:35	30	10	0.33
3	62.45%	03/21/16 6:52	30	0	0.00

011030

Southwest Research Institute

Radon Emanation

tetra tech
TO# 160115-1 project# 21431.01.001

Sample Information			Counting Information							
Sample ID	Condition	Date and Time Sealed	Date	Vol Gas mL	Lucas Cell #	Time in Lucas Cell	Time in Counter	Count Time min	Counts	Analyst Initials
BKgd 1	NA	NA	3/11/16	—	1	—	7:08	30	24	RSS
2	NA	NA	↓	—	2	—	7:40	30	3	RSS
↓ 3	NA	NA	↓	—	3	—	8:13	30	5	JAM
588049 D	#1	3/4/16 18:35	3/11/16	10mL	1	8:47	TE JAM 3/11/16 ~~9:17~~ 9:56	30	14944	JAM
591000	#21	3/4/16 18:35	3/11/16	10mL	2	9:21	10:27	30	6411	JAM
590214	#1	3/4/16 18:35	3/11/16	10mL	3	9:59	11:00	30	3165	JAM
588556 R	#1	3/4/16 18:35	3/11/16	10mL	1	10:36	11:38	30	8153	JAM
590213	#1	3/4/16 18:35	3/11/16	10mL	2	11:17	12:17	30	12565	JAM
588049	#1	3/4/16 18:35	3/11/16	10mL	3	12:48	TE JAM 3/11/16 ~~13~~ ~~13:18~~ 13:48	30	16005	JAM
590212	#1	3/4/16 18:35	3/11/16	10mL	2	13:18	14:19	30	24455	JAM
LCS	#NA	3/11/16 8:25	3/11/16	10mL	1	13:51	14:51	30	24830	JAM
LCS			3/11/16	10mL	1	17:01	17:04	30	21440	JAM
			3/11/16	10mL	1	17:01	18:14	30	21752	JAM
cylinder			3/11/16	10mL	2	17:37	17:38	30	31052	JAM
			3/11/16	10mL	2	17:37	TE JAM 3/11/16 ~~18~~ ~~18:48~~	30	N/A	JAM
Bkgd 1			3/12/16	—	1	—	7:15	30	TE JAM 3/12/16 ~~0~~ 26	JAM
2			3/12/16	—	2	—	8:00	30	TE JAM 3/12/16 ~~26~~ 0	JAM
LCS	N/A	3/12/16 8:30	3/12/16	10mL	1	10:51	11:02	30	39433	JAM
LCB	N/A	3/12/16 8:30	3/12/16	10mL	2	11:51	12:53	30	42895	JAM
				SAM 4/6/16						

T0103

Southwest Research Institute

Radon Emanation

tetratech

To # 160115-1 project # 21431.01.001

Sample Information			Counting Information							
Sample ID	Condition	Date and Time Sealed	Date	Vol Gas mL	Lucas Cell #	Time in Lucas Cell	Time in Counter	Count Time min	Counts	Analyst Initials
Background 1	N/A	N/A	3/14/16	—	1	—	6:38	30min	42	JAM
2	N/A	N/A	3/14/16	—	2	—	7:09	30min	5	JAM
3	N/A	N/A	3/14/16	—	3	—	7:42	30min	1	JAM
590214	#2	3/4/16 20:25	3/14/16	10mL	3	8:18	9:22	30min	26656	JAM
591000	#2	3/4/16 20:25	3/14/16	10mL	1	8:58	9:58	30min	56642	JAM
588049	#1	3/4/16 18:35	3/14/16	10mL	2	9:51	10:51	30min	20416	JAM
590214	#1	3/4/16 18:35	3/14/16	10mL	3	10:23	11:23	30min	4269	JAM
591000	#1	3/4/16 18:35	3/14/16	10mL	1	10:58	11:58	30min	7554	JAM
588049D	#1	3/4/16 18:35	3/14/16	10mL	2	11:29	12:29	30min	19383	JAM
588556	#2	3/4/16 20:25	3/14/16	10mL	3	12:00	13:00	30min	7745	JAM
588556R	#1	3/4/16 18:35	3/14/16	10mL	1	12:33	13:33	30min	7098	JAM
588049	#2	3/4/16 20:25	3/14/16	10mL	2	13:05	14:05	30min	9451	JAM
588556D	#2	3/4/16 20:25	3/14/16	10mL	3	13:36	14:36	30min	7866	JAM
590213	#2	3/4/16 20:25	3/14/16	10mL	1	14:10	15:10	30min	6441	JAM
590212	#2	3/4/16 20:25	3/14/16	10mL	2	14:42	15:42	30min	10175	JAM
590213	#1	3/4/16 18:35	3/14/16	10mL	3	15:12	16:13	30min	13867	JAM
590212	#1	3/4/16 18:35	3/14/16	10mL	1	15:45	16:45	30min	27132	JAM
LCS	—	3/14/16 10:31	3/14/16	10mL	2	16:21	17:21	30min	40856	JAM
588049-2	#2	3/14/16 20:25	3/14/16	10mL	3	16:52	17:52	30min	8572	JAM

JAM 4/16/16

011032

Southwest Research Institute

Radon Emanation

tetra tech TO# 160115-1 — project # 21431.01.001

Sample Information			Counting Information							
Sample ID	Condition	Date and Time Sealed	Date	Vol Gas mL	Lucas Cell #	Time in Lucas Cell	Time in Counter	Count Time min	Counts	Analyst Initials
Bk ground 3	N/A	N/A	3/15/16	—	3	—	6:46	30min	3	JAM
2	N/A	N/A	3/15/16	—	2	—	7:21	30min	4	JAM
1	N/A	N/A	3/16/16	—	1	—	7:55	30min	34	JAM
590214	#4	3/10/16 16:35	3/15/16	10mL	2	8:19	9:19	30min	1263	JAM
PB	—	3/10/16 17:30	3/15/16	10mL	3	7:46	8:46	30min	2	JAM
590214	#7	3/10/16 17:00	3/15/16	10mL	1	8:51	9:51	30min	1953	JAM
591000	#4	3/10/16 16:35	3/15/16	10mL	3	9:22	10:22	30min	2556	JAM
591000	#7	3/10/16 17:47	3/15/16 TO# 3/15/16	10mL	2	9:55	10:55	30min	7101	JAM
590214	#4	3/10/16 16:35	3/15/16	20mL	1	10:27	11:27	30min	2913	JAM
588556	#4	3/10/16 16:35	3/15/16	10mL	3	10:59	11:59	30min	4425	JAM
588556	#7	3/10/16 17:21	3/15/16 TO# 3/15/16	10mL	2	11:30	12:30	30min	93669	JAM
591000-2	#4	3/10/16 16:35	3/15/16	10mL	1	12:03	13:03	30min	2801	JAM
588556D	#4	3/10/16 16:35	3/15/16	10mL	3	12:34	13:34	30min	5148	JAM
588556D	#7	3/10/16 16:12	3/15/16	10mL	2	13:06	14:06	30min	8322	JAM
590213	#4	3/10/16 16:35	3/15/16	10mL	1	13:38	14:38	30min	3448	JAM
588049	#4	3/10/16 16:35	3/15/16	10mL	3	14:10	15:10	30min	5156	JAM
590213	#7	3/10/16 17:59	3/15/16	10mL	2	14:42	15:43	30min	9824	JAM
590212	#4	3/10/16 16:35	3/15/16	10mL	1	15:15	16:16	30min	6319	JAM
Capsul ①	—	3/11/16 8:30	3/15/16 TO# 3/15/16	10mL	3	15:46	16:47	30min	7077	JAM
588049	#7	3/10/16 17:11	3/15/16	10mL	2	16:18	TO# 3/15/16 17:19	30min	14944	JAM
590217	#7	3/10/16 17:36	3/15/16	10mL	1	16:51	17:51	30min	16241	JAM
LCS	—	3/15/16 13:09	3/15/16	10mL	3	17:22	18:22	30min	39803	JAM
① 4mL of	Ra-226 #33275									

EW 3/30/16

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Southwest Research Institute

Radon Emanation

tetra tech TO# 160115-1 project # 21431.01.001

Sample Information			Counting Information							
Sample ID	Condition	Date and Time Sealed	Date	Vol Gas mL	Lucas Cell #	Time in Lucas Cell	Time in Counter	Count Time min	Counts	Analyst Initials
Background 1	—	—	3/16/16	—	3	6:—	6:40	30min	8	JAM
2	—	—	3/16/16	—	2	—	7:23	30min	1	JAM
3	—	—	3/16/16	—	1	—	8:04	30min	37	JAM
590214	#3	3/14/16 21:15	3/16/16	10mL	3	7:31	8:34	30min	1793	JAM
590214	#5	3/11/16 19:00	3/16/16	10mL	2	8:05	9:05	30min	2802	JAM
591000	#5	3/11/16 18:35	3/16/16	10mL	1	8:37	9:37	30min	9731	JAM
591000	#3	3/14/16 21:15	3/16/16	10mL	3	9:~~42~~ 10 TESAM 3/16/16	10:10	30min	4110	JAM
588556	#5	3/11/16 19:00	3/16/16	10mL	2	9:42	10:42	30min	11114	JAM
588556	#3	3/14/16 21:20	3/16/16	10mL	1	10:15	11:15	30min	5179	JAM
591000-2	#5	3/11/16 18:35	3/16/16	10mL	3	10:47	11:47	30min	10614	JAM
590213	#5	3/11/16 18:35	3/16/16	10mL	2	11:19	12:19	30min	~~12:~~ 12074 TESAM 3/16/16	JAM
590213	#3	3/14/16 21:15	3/16/16	10mL	1	11:51	~~12:~~ 12:51 TESAM 3/16/16	30min	7052	JAM
588556B	#1	3/14/16 18:35	3/16/16	10mL	3	12:23	13:23	30min	7244	JAM
588049	#5	3/11/16 18:35	3/16/16	10mL	2	12:55	13:56	30min	12406	JAM
588049	#3	3/14/16 21:15	3/16/16	10mL	1	13:27	14:~~32~~ 27 TESAM 3/16/16	30min	9127	JAM
588049D	#5	3/11/16 18:35	3/16/16	10mL	3	14:00	15:00	30min	20297	JAM
588049D	#3	3/14/16 21:~~18~~ 20 TESAM 3/17/16	3/16/16	10mL	2	14:32	15:33	30min	9616	JAM
590212	#5	3/11/16 19:00	3/16/16	10mL	1	15:04	16:04	30min	21432	JAM
590212	#3	3/14/16 21:20	3/16/16	10mL	3	15:36	16:36	30min	11430	JAM
588049	#5	3/11/16 18:35	3/16/16	10mL	2	16:08	17:08	30min	11586	JAM
588049D	#5	3/11/16 18:35	3/16/16	10mL	1	16:40	17:42	30min	20455	JAM
LCS	—	3/15/16 13:09	3/16/16	10mL	3	17:13	18:~~24~~ 40 TESAM 3/16/16	30min	33882	JAM

#3 of 10

Southwest Research Institute

Radon Emanation

tetra tech

TO# 160115-1 project# 21431.01.001

Sample Information			Counting Information							
Sample ID	Condition	Date and Time Sealed	Date	Vol Gas mL	Lucas Cell #	Time in Lucas Cell	Time in Counter	Count Time min	Counts	Analyst Initials
Bk ground 1	—	—	3/17/16	—	3	—	6:41	30min	1	JAM
2	—	—	3/17/16	—	2	—	7:12	30min	3	JAM
3	—	—	3/17/16	—	1	—	7 TEXAM 3/17/16 8:48	30min	42	JAM
PB	—	3/10/16 17:30	3/17/16	10mL	3	7:15	8:19	30min	3	JAM
590214	#2	3/14/16 20:25 5 TEXAM 3/17/16	3/17/16	10mL	2	7:51	8:51	30min	2671	JAM
540214	#6	3/11/16 20:00	3/17/16	10mL	1	8:23	9:24	30min	2774	JAM
591000	#2	3/14/16 20:25	3/17/16	10mL	3	8:59	9:59	30min	5626	JAM
541000	#6	3/11/16 19:35	3/17/16	10mL	2	9:29 TEXAM 3/17/16 31	10:31	30min	10168	JAM
588556	#2	3/14/16 20:20	3/17/16	10 mL	1	10:03	11:03	30min	8483	JAM
588556	#6	3/11/16 19:35	3/17/16	10mL	3	10:35	11:35	30min	16155	JAM
588556D	#2	3/4/16 20:20	3/17/16	10mL	2	11:07	12:07	30min	8621	JAM
588556D	#6	3/11/16 19:35	3/17/16	10mL	1	11:39	12:39	30min	16656	JAM
591000-2	#6	3/11/16 19:35	3/17/16	10mL	3	12:11	TEXAM 3/17/16 12:47 13:11	30min	11457 TEXAM 3/17/16 ~~7~~	JAM
540213	#2	3/14/16 20:20	3/17/16	10mL	2	12:43	13:43	30min	7057	JAM
590213	#6	3/11/16 20:00	3/17/16	10mL	1	13:15	14:15	30min	11923	JAM
588556-2	#6	3/11/16 19:35	3/17/16	10mL	3	13:47	14:47	30min	17153	JAM
588556D-2	#6	3/11/16 19:35	3/17/16	10mL	2	14:19	15:19	30min	6426	JAM
586044	#2	3/14/16 20:25	3/17/16	10mL	1	14:51	15:51	30min	9543	JAM
586044	#6	3/11/16 20:25 19:35 TEXAM 3/17/16	3/17/16	10mL	3	15:23	16:24	30min	19 TEXAM 3/17/16 20243	JAM
590213	#2	3/14/16 20:20	3/17/16	10mL	2	15:55	16:55	30min	10667	JAM
590212	#6	3/11/16 20:00	3/17/16	10mL	1	16:31	17:31	30min	22507	JAM
LCS	—	3/15/16 13:09 15 TEXAM 3/17/16	3/17/16	10mL	3	17:03	18:03	30min	~~2~~ 26831 TEXAM 3/17/16	JAM

Southwest Research Institute

Radon Emanation

tetra tech
TO# 160115-1 project # 21431.01.001

Sample Information			Counting Information							
Sample ID	Condition	Date and Time Sealed	Date	Vol Gas mL	Lucas Cell #	Time in Lucas Cell	Time in Counter	Count Time min	Counts	Analyst Initials
Background	—	—	3/18/16	—	1	—	6:40	30min	41	JAM
2	—	—	3/18/16	—	2	—	7:11	30min	6	JAM
3	—	—	3/18/16	—	3	—	7:42	30min	4	JAM
590214	#7	3 TEXAM 3/11/16 6/10/16 17:00	3/18/16	10mL	1	7:44	8:45	30min	2551	JAM
591000	#7	3/10/16 17:47	3/18/16	10mL	TEXAM 3/11/16 3	8:21	09:21	30min	8878	JAM
588556	#7	3/10/16 17:21	3/18/16	10mL	TEXAM 3/10/16 2	8:53	09:53	30min	11997	JAM
588556D	#7	3/10/16 18:12	3/18/16	10mL	1	9:25	10:25	30min	10675	JAM
590213	#7	3/10/16 17:54	3/18/16	10mL	3	9:54	10:54	30min	12322	JAM
583649	#7	3/10/16 17:11	3/18/16	10mL	2	10:31	11:37	30min	19457	JAM
590212	#7	3/10/16 17:36	3/18/16	10mL	1	11:03	11:08	30min	21870	JAM
LCS	—	3 TEXAM 3/11/16 3/11/16 13:04	3/18/16	10mL	3	11:40	12:40	30min	22489	JAM

JAM 4/6/16

011036

Southwest Research Institute

Radon Emanation

tetra tech
TO# 160115-1 project # 2143.01.001

Sample Information			Counting Information							
Sample ID	Condition	Date and Time Sealed	Date	Vol Gas mL	Lucas Cell #	Time in Lucas Cell	Time in Counter	Count Time min	Counts	Analyst Initials
Background 1	—	—	3/21/16	—	1	—	8:09	30min	49	JAM
2	—	—	3/21/16	—	2	—	7:35	30 min	10	JAM
3	—	—	3/21/16	—	3	~~6:52~~ TEtech 3/21/16	6:52	30min	0	JAM
590214	8	3/14/16 18:00	3/21/16	10mL	3	7:38	8:40	30min	2566	JAM
590214	9	3/15/16 10:15	3/21/16	10mL	2	8:12	9:12	30min	3482	JAM
590000	8	3/14/16 18:00	3/21/16	10mL	1	8:44	9:45	30 min	2136	JAM
591000	9	3/15/16 10:15	3/21/16	10mL	3	9:16	10:16	30min	10452	JAM
588556	8	3/14/16 17:43	3/21/16	10mL	2	9:48	10:45	30min	7750	JAM
588556	9	3/14/16 18:00	3/21/16	10mL	1	10:20	11:20	30min	14272	JAM
588556D	9	3/14/16 18:25	3/21/16	10mL	3	10:52	11:52	30min	15006	JAM
590213	8	3/14/16 18:00	3/21/16	10mL	2	11:24	12:24	30min	6491	JAM
590213	9	3/14/16 18:25	3/21/16	10mL	1	11:56	12:56	30min	13212	JAM
588049	8	3/14/16 17:43	3/21/16	10mL	3	12:28	13:~~30~~ TEtech 3/21/16	30min	10673	JAM
588049	9	3/14/16 18:25	3/21/16	10mL	2	13:00	14:00	30min	8606	JAM
588049D	8	3/14/16 17:43	3/21/16	10mL	1	13:34	14:34	30min	10314	JAM
590212	8	3/14/16 17:43	3/21/16	10mL	3	14:06	15:08	30min	14414	JAM
590212	9	3/14/16 18:25	3/21/16	10mL	2	14:38	15:41	30min	19992	JAM
LCS	—	3/21/16 10:30	3/21/16	10mL	1	15:10	16:13	30min	11957	JAM
588049-2	9	3/14/16 18:25	3/21/16	10mL	3	15:45	16:45	30min	9090	JAM
				JAM	4/6/16					

011037

011038

SOUTHWEST RESEARCH INSTITUTE
CLIENT: Tetra Tech
TASK ORDER#: 160115-1
SRR#: 56591, 56639, 56785, 56876
SDG: 588049
VTSR: 11.20.15, 12.01.15, 12.01.15, 01.15.16
PROJECT#: 21431.01.001

GAMMA SPEC RAW DATA FOR RADON GENERATOR VERIFICATION

Tetra Tech
TO#160115-1

4/20/16

Radon Source Verification via Gamma Spec

Run	Loaded	Counted	Ingrowth	Pb-214	Bi-214	Pb-214 RAW	Pb-214 Raw TPU	Bi-214 RAW	Bi-214 Raw TPU	Gas Vol ml	Cnt Time	Pb-214 Corr	Bi-214 Corr	Ra-226	Ra-226 TPU (1s)	Average	Average TPU (1s)	Standard Label	Criteria
	hh:mm	hh:mm	min	Factor	Factor	pCi	pCi	pCi	pCi	Sample	min	pCi	pCi	DPM/ml	DPM/ml	DPM/ml	DPM/ml	DPM/ml	
1	12:00	17:34	364	0.956	0.860	4.56E+04	2.13E+03	3.86E+04	1.13E+03	1200	60	47712	44875	85.6	4.7				Verified 95-105%R, within 1s error of TV
2	13:00	18:40	370	0.955	0.860	4.39E+04	2.05E+03	3.66E+04	1.07E+03	1200	60	45968	42581	81.9	4.5	84.2	4.6	80.4	
3	14:00	19:41	371	0.955	0.859	4.50E+04	2.10E+03	3.84E+04	1.12E+03	1200	60	47126	44681	84.9	4.7				

Radon Generator Information

Manuf.	Model	Serial No	MFG Date	Ra-226 kBq	Rn-222 mBq/min	Flow Rate ml/min	Rn-222 Bq/ml	Rn-222 DPM/ml
Pylon	RN-1025	A-309	27-Apr-93	1.06E+03	1.34E+05	100	1.34	80.4

4/20/16

011039

011040

Analysis Report for Gas #1

GAMMA SPECTRUM ANALYSIS

Sample Identification	: Gas #1
Sample Description	:
Sample Type	: Gas
Sample Size	: 1.000E+00 std
Facility	: Default
Sample Taken On	: 3/11/2016 12:00:00PM
Acquisition Started	: 3/11/2016 5:34:24PM
Procedure	: 1.2L MB
Operator	: Administrator
Detector Name	: DET01
Geometry	: 1.2L MB Gas
Live Time	: 3600.0 seconds
Real Time	: 3618.4 seconds
Dead Time	: 0.51 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 3/10/2011
Efficiency Calibration Description	: 1.2L MB Gas
Sample Number	: 7273

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/std)	Wt mean Activity Uncertainty	Comments
BI-214	0.943	3.86E+04	1.13E+03	
PB-214	0.993	4.56E+04	2.13E+03	

! = nuclide was corrected for parent/daughter

Analysis Report for Gas #1

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/5/2016 4:36:49PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	31.05	3.36942E-01	5.71		
	2	53.17	7.92722E-01	4.20		
M	3	74.88	5.26328E+00	0.87		
m	4	77.15	9.39537E+00	0.62		
M	5	87.35	1.51782E+00	3.19		
m	6	89.95	5.33342E-01	3.56		
	7	242.09	4.19422E+00	1.03		
	8	259.07	2.64028E-01	7.85		
	9	274.86	1.78958E-01	13.32		
	12	389.45	2.07333E-01	11.19		
	13	480.60	3.77777E-03	363.32		
	14	487.50	4.57639E-02	35.92		
	15	580.37	7.91667E-02	17.80		
	17	665.84	2.70347E-01	5.42		
	18	703.63	7.61528E-02	18.61	Sum	
	19	720.22	5.02222E-02	23.74		
	20	768.88	9.18722E-01	2.41		
	21	786.45	1.84764E-01	6.40		
	22	806.54	1.98722E-01	6.52		
	23	839.51	9.81944E-02	13.12		
	24	934.69	4.65750E-01	4.11		
	25	964.72	6.22222E-02	18.49		
	26	1052.68	4.26250E-02	20.15		
	28	1155.97	2.02111E-01	5.74		
	29	1208.66	6.26667E-02	15.73		
	30	1238.92	6.65250E-01	2.64		
	31	1281.77	1.56319E-01	6.45		
M	32	1378.51	4.80700E-01	2.66		
m	33	1386.20	9.10209E-02	7.42		
M	34	1402.30	1.36590E-01	5.74		
m	35	1408.79	2.34544E-01	4.11		
	36	1510.06	2.16778E-01	5.85		
	37	1584.14	5.61806E-02	15.23		
	38	1662.47	9.63194E-02	7.24		
	39	1730.51	3.43389E-01	3.37	Sum	

Analysis Report for Gas #1

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
41	1848.34	1.89278E-01	5.05		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

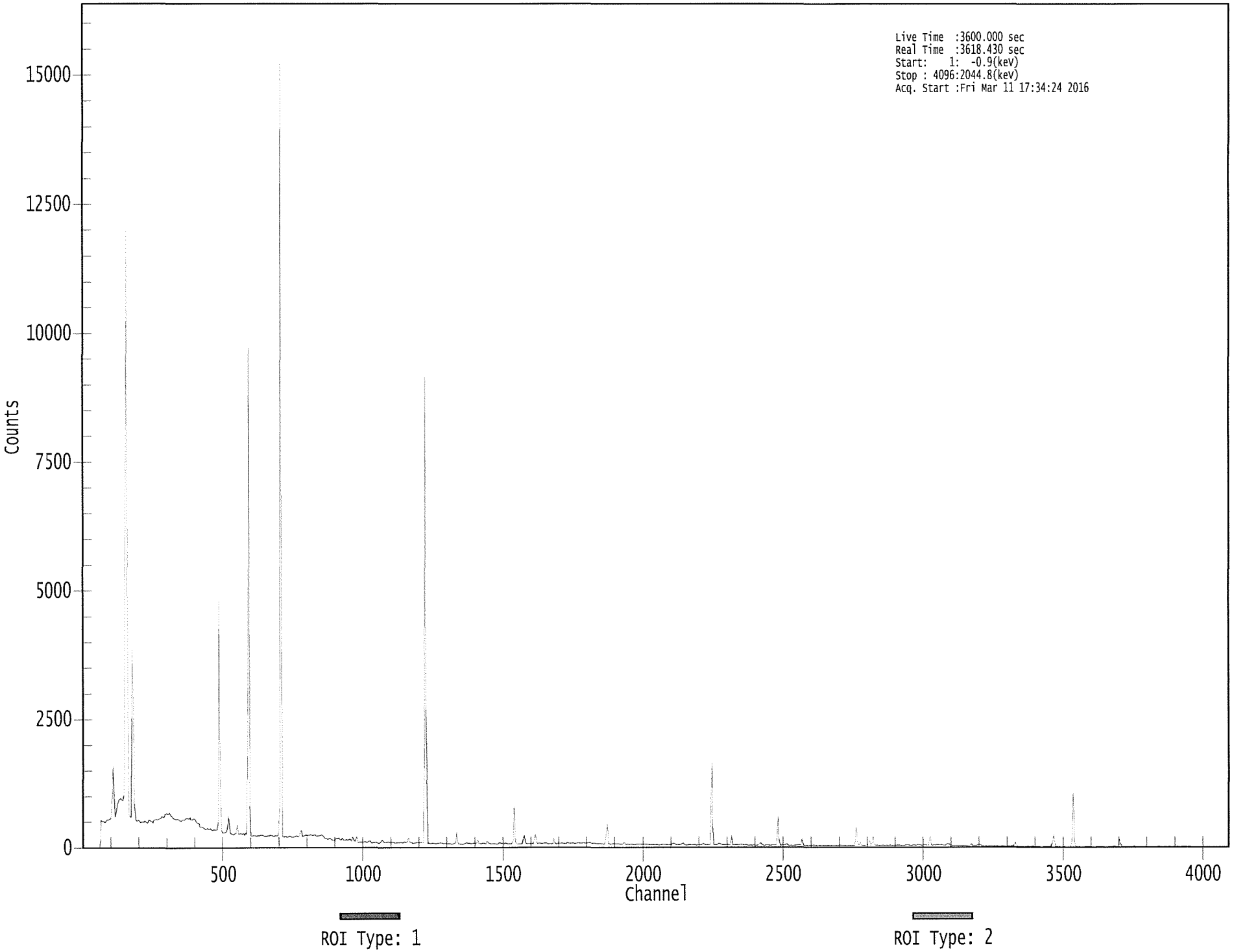
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/std)	Nuclide MDA (pCi/std)	Line MDA (pCi/std)
	K-40	1460.83		10.67	-5.76E+02	1.69E+03	1.69E+03
+	BI-214	609.31	*	44.80	4.12E+04	3.27E+02	3.27E+02
		1120.29	*	14.80	3.88E+04		9.35E+02
		1764.49	*	15.36	3.37E+04		7.02E+02
+	PB-214	295.21	*	18.50	4.59E+04	3.98E+02	5.67E+02
		351.92	*	35.80	4.55E+04		3.98E+02
	RA-226	186.10		3.50	1.13E+03	2.77E+03	2.77E+03

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

0000007273.CNF



011043

Apex™

Analysis Report for Gas #2

GAMMA SPECTRUM ANALYSIS

Sample Identification	: Gas #2
Sample Description	:
Sample Type	: Gas
Sample Size	: 1.000E+00 std
Facility	: Default
Sample Taken On	: 3/11/2016 1:00:00PM
Acquisition Started	: 3/11/2016 6:39:50PM
Procedure	: 1.2L MB
Operator	: Administrator
Detector Name	: DET01
Geometry	: 1.2L MB Gas
Live Time	: 3600.0 seconds
Real Time	: 3617.4 seconds
Dead Time	: 0.48 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 3/10/2011
Efficiency Calibration Description	: 1.2L MB Gas
Sample Number	: 7276

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/std)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.943	3.66E+04	1.07E+03	
PB-214	0.994	4.39E+04	2.05E+03	

! = nuclide was corrected for parent/daughter

Analysis Report for Gas #2

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/5/2016 4:39:53PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	31.05	3.11803E-01	6.07		
	2	53.27	7.19306E-01	4.77		
M	3	74.87	5.13943E+00	0.58		
m	4	77.15	8.76879E+00	0.44		
m	5	79.12	6.31445E-02	21.89		
M	6	87.31	2.74996E+00	1.23		
m	7	89.94	9.97258E-01	2.30		
	8	242.17	3.99597E+00	1.03		
	9	259.09	2.36458E-01	9.43		
	10	275.01	1.66778E-01	15.29		
M	13	387.01	7.67342E-02	12.19		
m	14	389.09	1.34056E-01	8.21		
	15	480.83	7.11110E-03	200.91		
	16	487.38	3.59028E-02	45.02		
	17	534.11	2.49722E-02	64.75		
	18	580.49	6.30556E-02	18.40		
	20	665.85	2.53125E-01	4.94		
	21	703.45	7.06944E-02	14.16	Sum	
	22	720.30	8.04583E-02	12.82		
	23	768.82	8.55500E-01	2.25		
	24	786.35	1.95750E-01	6.61		
	25	806.64	1.79778E-01	6.89		
	26	839.56	1.03611E-01	12.30		
	27	934.70	4.65778E-01	3.62		
	28	1070.94	2.20000E-02	28.73		
	30	1155.88	2.24542E-01	5.69		
	31	1208.17	4.54583E-02	22.14		
	32	1238.91	6.69389E-01	2.49		
	33	1281.76	1.30972E-01	7.95		
M	34	1378.51	4.79015E-01	2.64		
m	35	1386.08	8.44401E-02	7.64		
M	36	1402.36	1.25192E-01	6.08		
m	37	1408.85	2.30946E-01	4.11		
	38	1510.15	2.14208E-01	6.24		
	39	1539.32	1.88889E-02	38.60		

Analysis Report for Gas #2

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
40	1584.18	6.05556E-02	12.04		
41	1662.14	8.78333E-02	8.32		
42	1685.21	1.37778E-02	32.57		
43	1730.56	3.06625E-01	3.62	Sum	
45	1848.47	1.93333E-01	4.56		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

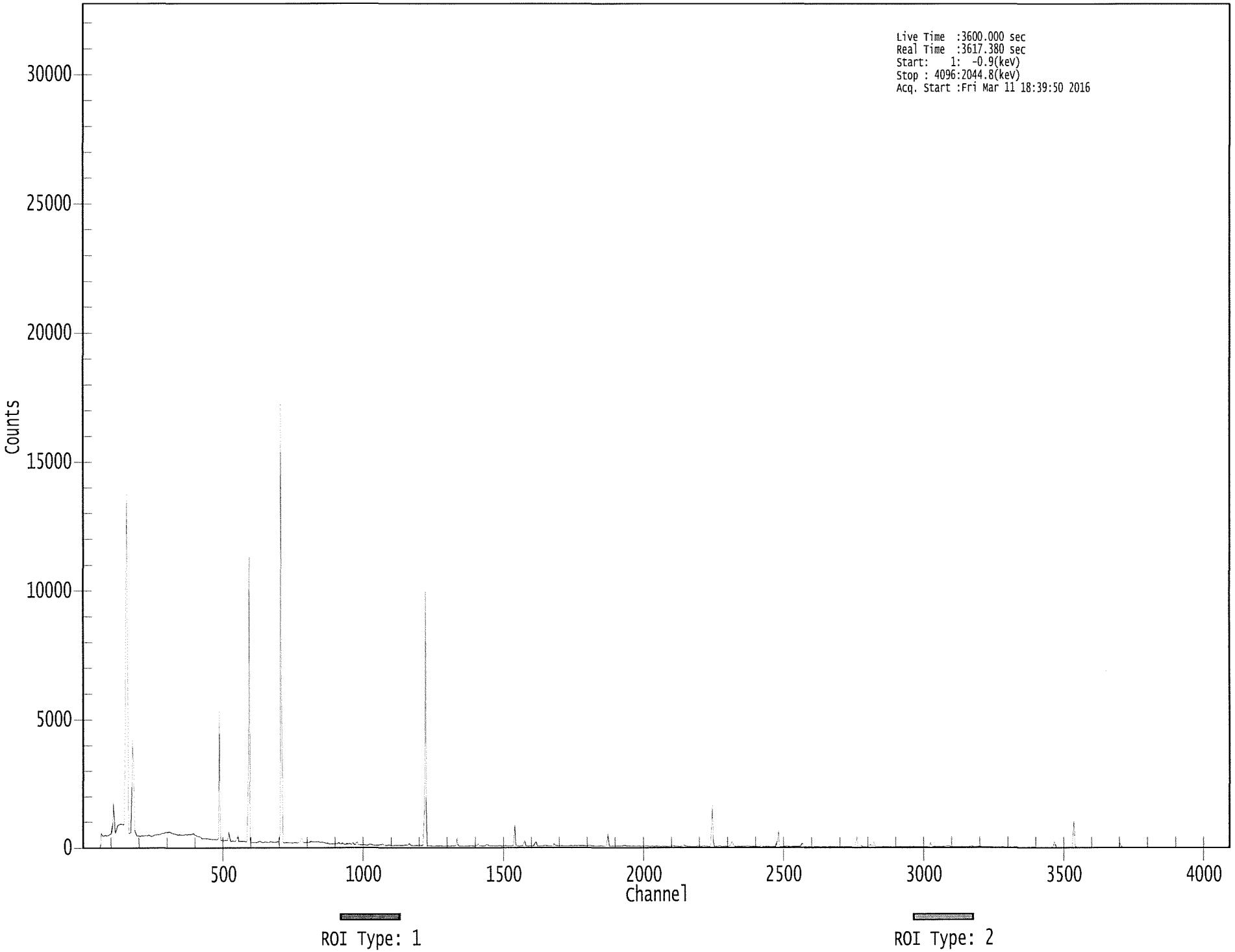
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/std)	Nuclide MDA (pCi/std)	Line MDA (pCi/std)
	K-40	1460.83		10.67	3.68E+02	1.69E+03	1.69E+03
+	BI-214	609.31	*	44.80	3.92E+04	3.17E+02	3.17E+02
		1120.29	*	14.80	3.66E+04		9.78E+02
		1764.49	*	15.36	3.21E+04		5.30E+02
+	PB-214	295.21	*	18.50	4.40E+04	3.58E+02	5.31E+02
		351.92	*	35.80	4.39E+04		3.58E+02
	RA-226	186.10		3.50	9.01E+02	2.67E+03	2.67E+03

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

0000007276.CNF



011047

Apex™

Analysis Report for Gas #3

GAMMA SPECTRUM ANALYSIS

Sample Identification	: Gas #3
Sample Description	:
Sample Type	: Gas
Sample Size	: 1.000E+00 std
Facility	: Default
Sample Taken On	: 3/11/2016 2:00:00PM
Acquisition Started	: 3/11/2016 7:41:41PM
Procedure	: 1.2L MB
Operator	: Administrator
Detector Name	: DET01
Geometry	: 1.2L MB Gas
Live Time	: 3600.0 seconds
Real Time	: 3618.0 seconds
Dead Time	: 0.50 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 3/10/2011
Efficiency Calibration Description	: 1.2L MB Gas
Sample Number	: 7278

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/std)	Wt mean Activity Uncertainty	Comments
BI-214	0.939	3.84E+04	1.12E+03	
PB-214	0.993	4.50E+04	2.10E+03	

! = nuclide was corrected for parent/daughter

Analysis Report for Gas #3

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/5/2016 4:40:59PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	31.05	2.97776E-01	6.46		
	2	53.27	6.58514E-01	5.25		
M	3	74.88	5.27885E+00	0.83		
m	4	77.15	9.02946E+00	0.62		
M	5	87.30	2.85418E+00	1.20		
m	6	89.94	1.05099E+00	2.23		
	7	242.14	4.20169E+00	0.98		
	8	259.04	2.12153E-01	10.61		
	9	274.83	1.91833E-01	11.92		
	12	389.20	1.96917E-01	10.51		
	13	455.02	1.93056E-02	85.30		
	14	480.84	3.77778E-02	34.56		
	15	487.35	2.82500E-02	55.06		
	16	580.40	9.08333E-02	16.84		
	18	665.87	2.73917E-01	4.71		
	19	703.39	6.31944E-02	18.56	Sum	
	20	720.32	6.22222E-02	20.75		
	21	768.89	8.49444E-01	2.26		
	22	786.50	2.00028E-01	7.45		
	23	806.69	1.87514E-01	6.78		
	24	839.54	1.20778E-01	9.45		
	25	934.68	4.36611E-01	3.43		
	26	1071.01	3.32083E-02	23.05		
	28	1156.03	2.25944E-01	6.52		
	29	1208.31	4.41667E-02	18.70		
	30	1238.98	6.91833E-01	2.38		
	31	1281.74	1.74333E-01	6.64		
M	32	1378.55	4.92647E-01	2.64		
m	33	1386.12	8.02848E-02	8.09		
M	34	1402.47	1.40064E-01	5.58		
m	35	1408.90	2.45012E-01	4.00		
	36	1510.16	2.27722E-01	5.35		
M	37	1539.50	4.05653E-02	13.58		
m	38	1544.25	4.75536E-02	11.81		
	39	1583.98	5.24306E-02	17.91		

Analysis Report for Gas #3

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
40	1662.41	1.17889E-01	6.90		
41	1730.43	3.36625E-01	3.35	Sum	
43	1839.40	-7.60833E-02	- 8.7		
44	1848.41	1.82292E-01	5.08		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

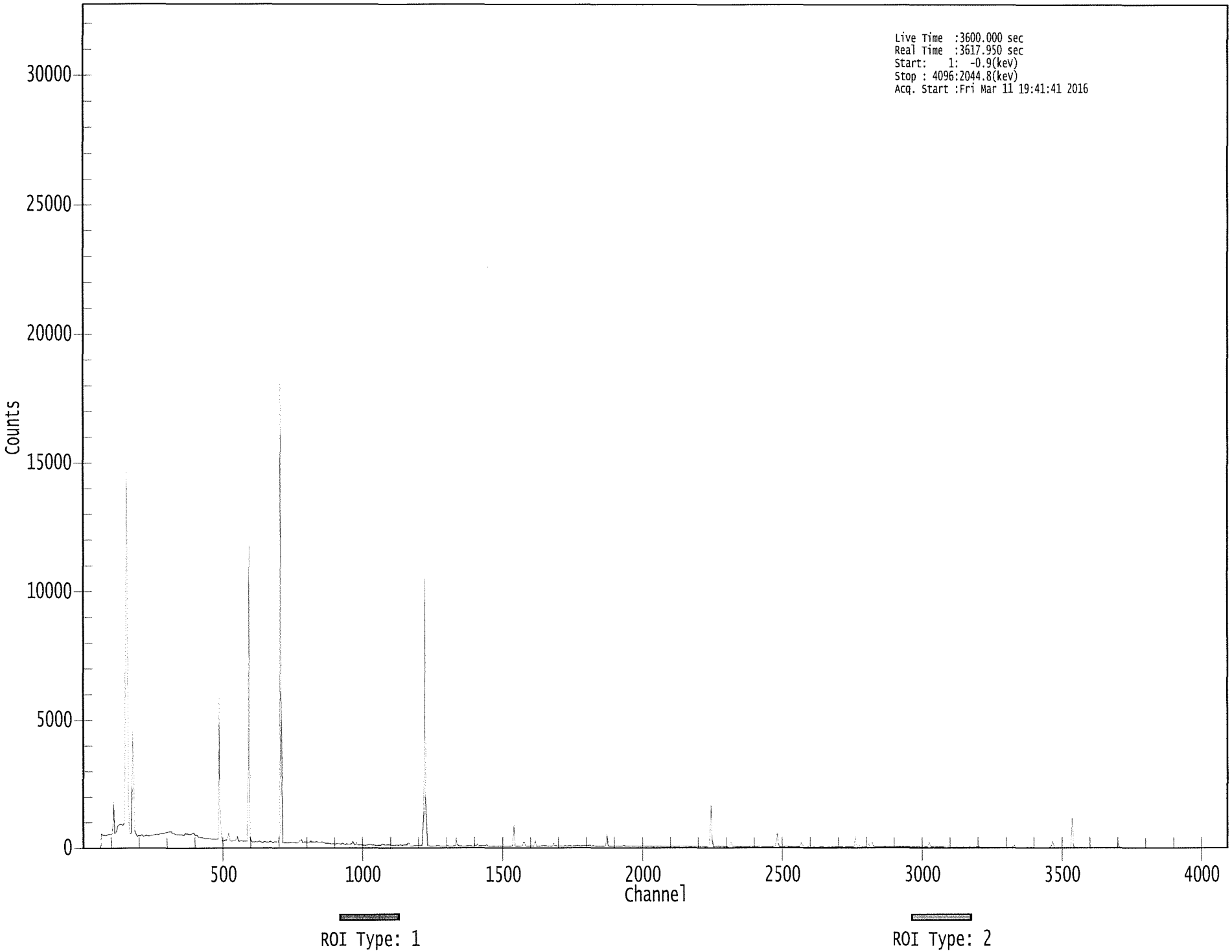
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/std)	Nuclide MDA (pCi/std)	Line MDA (pCi/std)
	K-40	1460.83		10.67	2.40E+02	1.75E+03	1.75E+03
+	BI-214	609.31	*	44.80	4.04E+04	2.41E+02	2.41E+02
		1120.29	*	14.80	3.86E+04		1.11E+03
		1764.49	*	15.36	3.43E+04		6.56E+02
+	PB-214	295.21	*	18.50	4.50E+04	3.43E+02	5.48E+02
		351.92	*	35.80	4.51E+04		3.43E+02
	RA-226	186.10		3.50	5.29E+02	2.71E+03	2.71E+03

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

0000007278.CNF



011051

011052

SOUTHWEST RESEARCH INSTITUTE
CLIENT: Tetra Tech
TASK ORDER#: 160115-1
SRR#: 56591, 56639, 56785, 56876
SDG: 588049
VTSR: 11.20.15, 12.01.15, 12.01.15, 01.15.16
PROJECT#: 21431.01.001

GAMMA SPEC RAW DATA FOR EMANATION CHAMBERS

Summary of Gamma Spec Results.

Set 1
Sample Treatment: None ("As Received")
Moisture Saturation (relative): "As Received"

Tetra Tech
TO#160115-1

System ID	Sample Wt	%Solids As Rec'd	%Solids Treatment	%Solids As Tested	Gamma Units	Gamma Date	Bi214 Activity	Bi214 TPU	Bi214 MDA	Pb214 Activity	Pb214 TPU	Pb214 MDA
588049	50.517	81.06	NA	81.06	pCi/g	3/15/2016	3084.75	75.47	27.38	3237.65	152.58	37.19
588049D	50.529	NA	NA	81.06	pCi/g	3/16/2016	2966.74	72.86	30.07	3128.98	147.46	46.05
588556R	51.770	78.76	NA	78.76	pCi/g	3/16/2016	2144.61	53.73	21.72	2267.56	107.14	35.70
588556D	NA	78.33										
590212	50.548	85.05	NA	85.05	pCi/g	3/16/2016	4339.88	104.43	36.98	4595.51	216.15	55.05
590213	50.300	86.33	NA	86.33	pCi/g	3/16/2016	2125.52	53.63	27.76	2293.91	108.40	38.87
590214	50.318	81.35	NA	81.35	pCi/g	3/16/2016	196.09	7.35	8.23	209.35	10.78	12.37
591000	50.711	73.37	NA	73.37	pCi/g	3/16/2016	1144.50	30.59	16.28	1202.63	57.20	23.89

4/20/16

4/20/16

011053

Y:\METALS\JACKIE\Final Spreadsheets\Tetra Tech\Other\Tetra Tech 160115-1 Summary rev2g MD

Set 2

Sample Treatment: Heated 105oC 16 hours

Moisture Saturation (relative): "As Found" After Treatment

Tetra Tech

TO#160115-1

System ID	Sample Wt	%Solids As Rec'd	%Solids Treatment	%Solids As Tested	Gamma Units	Gamma Date	Bi214 Activity	Bi214 TPU	Bi214 MDA	Pb214 Activity	Pb214 TPU	Pb214 MDA
588049	53.498	81.06	82.37	99.72	pCi/g	3/16/2016	3683.11	88.89	27.64	3869.02	182.01	44.89
588049D	NA	NA										
588556	54.971	78.76	79.02	99.86	pCi/g	3/16/2016	2946.00	72.02	23.69	3206.71	151.05	41.21
588556D	55.580	78.33	78.79	99.91	pCi/g	3/16/2016	2954.59	72.22	29.01	3240.62	152.60	43.22
590212	51.714	85.05	85.91	99.98	pCi/g	3/16/2016	5452.45	129.76	31.99	5764.63	270.98	51.16
590213	52.018	86.33	87.48	99.80	pCi/g	3/16/2016	2458.92	61.04	20.50	2578.56	121.75	35.55
590214	51.840	81.35	81.73	100.00	pCi/g	3/16/2016	236.10	8.42	8.75	271.33	13.61	10.11
591000	50.077	73.37	72.53	99.68	pCi/g	3/16/2016	2177.69	54.77	21.87	2245.36	106.32	34.94

011054

Set 3

Sample Treatment: Heated 250oC 16 hours

Moisture Saturation (relative): "As Found" After Treatment

Tetra Tech

TO#160115-1

System ID	Sample Wt	%Solids As Rec'd	%Solids Treatment	%Solids As Tested	Gamma Units	Gamma Date	Bi214 Activity	Bi214 TPU	Bi214 MDA	Pb214 Activity	Pb214 TPU	Pb214 MDA
588049	51.710	81.06	81.27	100.10	pCi/g	3/16/2016	4197.61	100.84	28.57	4469.04	210.15	47.51
588049D	51.585	NA	80.98	100.15	pCi/g	3/16/2016	4471.00	107.12	39.18	4654.44	218.87	41.39
588556	53.176	78.76	76.05	100.49	pCi/g	3/17/2016	3097.36	75.48	30.37	3304.79	155.59	35.70
588556D	NA	78.33										
590212	50.602	85.05	84.49	100.46	pCi/g	3/17/2016	5192.87	123.87	40.12	5405.97	254.28	56.56
590213	51.321	86.33	85.37	100.42	pCi/g	3/17/2016	2930.71	71.98	24.71	3095.50	145.88	35.54
590214	51.653	81.35	80.08	100.70	pCi/g	3/17/2016	269.89	9.34	7.58	322.60	16.04	12.33
591000	47.358	73.37	68.02	100.74	pCi/g	3/17/2016	2057.56	52.24	20.51	2195.57	103.82	36.23

@JP 4/20/16 used 100% for all.

011055

Set 4

Sample Treatment: Heated 250oC 48 hours

Moisture Saturation (relative): "As Found" After Treatment

Tetra Tech

TO#160115-1

System ID	Sample Wt	%Solids As Rec'd	%Solids Treatment	%Solids As Tested	Gamma Units	Gamma Date	Bi214 Activity	Bi214 TPU	Bi214 MDA	Pb214 Activity	Pb214 TPU	Pb214 MDA
588049	52.950	81.06	80.80	99.80	pCi/g	3/17/2016	4135.09	99.35	30.42	4334.79	203.91	44.02
588049D	NA	NA										
588556	54.275	78.76	77.14	96.76	pCi/g	3/17/2016	2903.32	71.00	30.01	3092.10	145.73	37.29
588556D	52.722	78.33	75.59	98.55	pCi/g	3/17/2016	3032.13	74.16	22.84	3253.58	153.24	37.69
590212	50.700	85.05	84.37	93.20	pCi/g	3/17/2016	5535.11	131.70	36.67	5768.40	271.13	56.46
590213	51.567	86.33	85.58	105.43	pCi/g	3/17/2016	2242.69	56.17	19.89	2381.95	112.43	32.82
590214	51.435	81.35	80.16	100.25	pCi/g	3/17/2016	276.83	9.50	8.77	320.28	15.93	12.77
591000	47.666	73.37	67.63	99.85	pCi/g	3/17/2016	2919.91	72.06	21.89	3153.94	148.62	46.60

(2) 12/20/16
used 100%
for all

011056

Set 5

Sample Treatment: Heated 250oC 48 hours

Moisture Saturation (relative): "As Received"

Tetra Tech

TO#160115-1

System ID	Sample Wt	%Solids As Rec'd	%Solids Treatment	%Solids As Tested	Gamma Units	Gamma Date	Bi214 Activity	Bi214 TPU	Bi214 MDA	Pb214 Activity	Pb214 TPU	Pb214 MDA
588049	66.795	81.06	80.97	80.94	pCi/g	3/17/2016	3243.78	77.81	24.69	3221.98	151.66	39.80
588049D	67.687	NA	81.58	79.68	pCi/g	3/17/2016	2822.61	68.27	25.51	2830.16	133.29	39.17
588556	64.727	78.76	77.75	76.21	pCi/g	3/17/2016	1921.73	47.82	22.66	1968.27	92.93	24.06
588556D	NA	78.33										
590212	56.844	85.05	83.38	85.14	pCi/g	3/18/2016	4236.01	101.45	24.80	4545.65	213.67	51.57
590213	56.325	86.33	84.75	86.14	pCi/g	3/18/2016	2036.49	50.88	18.43	2114.86	99.93	33.66
590214	61.067	81.35	80.23	81.36	pCi/g	3/18/2016	185.57	6.70	7.46	208.34	10.59	10.09
591000	63.786	73.37	71.00	74.00	pCi/g	3/18/2016	2588.64	63.08	18.40	2688.73	126.64	32.31

011057

Set 6

Sample Treatment: Heated 250oC 48 hours

Moisture Saturation (relative): TBD (10% Est)

Tetra Tech

TO#160115-1

System ID	Sample Wt	%Solids As Rec'd	%Solids Treatment	%Solids As Tested	Gamma Units	Gamma Date	Bi214 Activity	Bi214 TPU	Bi214 MDA	Pb214 Activity	Pb214 TPU	Pb214 MDA
588049	56.279	81.06	80.72	90.21	pCi/g	3/18/2016	3724.38	89.64	33.75	3980.17	187.35	44.74
588049D	NA	NA										
588556	58.238	78.76	77.54	89.53	pCi/g	3/18/2016	2785.12	68.00	28.84	3080.03	145.01	38.62
588556D	56.168	78.33	76.22	90.06	pCi/g	3/18/2016	2530.51	62.33	24.94	2734.98	128.94	39.06
590212	52.917	85.05	85.65	89.73	pCi/g	3/18/2016	4798.33	114.59	38.82	4858.59	228.98	52.62
590213	53.002	86.33	84.80	89.56	pCi/g	3/18/2016	2154.17	53.88	25.30	2277.01	107.56	35.84
590214	55.438	81.35	80.37	89.88	pCi/g	3/18/2016	188.31	7.00	8.00	223.75	11.36	11.38
591000	50.867	73.37	67.98	89.92	pCi/g	3/18/2016	3101.59	75.87	25.17	3266.55	153.89	40.99

011058

Set 7

Sample Treatment: None ("As Received")

Moisture Saturation (relative): 100% (Saturated)

Tetra Tech

TO#160115-1

System ID	Sample Wt	%Solids As Rec'd	%Solids Treatment	%Solids As Tested	Gamma Units	Gamma Date	Bi214 Activity	Bi214 TPU	Bi214 MDA	Pb214 Activity	Pb214 TPU	Pb214 MDA
588049	56.42	81.06	NA	70.99	pCi/g	3/18/2016	2918.58	71.22	30.59	3112.16	146.57	39.66
588049D	NA	NA										
588556	54.67	78.76	NA	68.46	pCi/g	3/18/2016	1781.77	45.30	20.97	1904.75	90.08	32.19
588556D	50.97	78.33	NA	65.67	pCi/g	3/19/2016	1746.38	44.56	15.86	1858.80	88.00	31.43
590212	56.40	85.05	NA	73.99	pCi/g	3/19/2016	3569.73	86.08	26.49	3723.35	175.22	37.85
590213	55.00	86.33	NA	70.42	pCi/g	3/19/2016	1681.66	42.75	19.42	1734.13	82.15	26.82
590214	52.58	81.35	NA	67.22	pCi/g	3/19/2016	149.45	5.96	6.97	168.62	8.82	11.93
591000	53.34	73.37	NA	59.13	pCi/g	3/19/2016	1661.26	42.52	17.73	1703.00	80.62	24.61

011059

Set 8

Tetra Tech

Sample Treatment: Heat 60oC until at or below desired saturation

TO#160115-1

Moisture Saturation (relative): TBD from TGA (5% Est) - target 2-5%

System ID	Sample Wt	%Solids As Rec'd	%Solids Treatment	%Solids As Tested	Gamma Units	Gamma Date	Bi214 Activity	Bi214 TPU	Bi214 MDA	Pb214 Activity	Pb214 TPU	Pb214 MDA
588049	52.490	81.06	83.01	98.18	pCi/g	3/19/2016	4009.49	96.49	25.44	4294.03	201.96	42.90
588049D	54.016	NA	82.76	98.80	pCi/g	3/19/2016	3716.97	89.78	23.05	3949.46	185.87	48.68
588556	56.992	78.76	80.53	99.32	pCi/g	3/21/2016	2717.64	66.49	22.60	2932.24	138.12	40.89
588556D	NA	78.33										
590212	52.103	85.05	89.44	97.80	pCi/g	3/21/2016	4931.54	117.75	36.93	5205.86	244.79	52.01
590213	52.216	86.33	88.23	99.34	pCi/g	3/21/2016	2376.48	59.06	23.39	2511.70	118.51	35.27
590214	52.786	81.35	83.03	98.85	pCi/g	3/21/2016	405.71	12.90	10.20	466.20	22.77	17.59
591000	54.141	73.37	74.88	98.01	pCi/g	3/21/2016	2067.05	51.74	22.05	2097.78	99.17	36.69

011060

Set 9

Tetra Tech

Sample Treatment: Heat 60oC until at or below desired saturation

TO#160115-1

Moisture Saturation (relative): TBD from TGA (10% Est) - target 9-11% (8-12%)

System ID	Sample Wt	%Solids As Rec'd	%Solids Treatment	%Solids As Tested	Gamma Units	Gamma Date	Bi214 Activity	Bi214 TPU	Bi214 MDA	Pb214 Activity	Pb214 TPU	Pb214 MDA
588049	56.946	81.06	89.75	91.81	pCi/g	3/21/2016	3513.95	84.84	25.08	3647.66	171.73	40.33
588049D		NA										
588556	58.916	78.76	86.88	91.47	pCi/g	3/21/2016	2459.53	60.47	20.51	2597.19	122.48	32.50
588556D	59.729	78.33	86.33	91.22	pCi/g	3/21/2016	2334.14	57.61	21.08	2482.27	117.04	35.19
590212	54.431	85.05	93.57	93.30	pCi/g	3/21/2016	4547.09	108.73	28.98	4855.95	228.23	41.35
590213	57.957	86.33	94.19	93.38	pCi/g	3/21/2016	1982.90	49.60	24.81	2043.79	96.69	35.27
590214	57.783	81.35	91.49	89.34	pCi/g	3/21/2016	203.56	7.24	7.97	219.62	11.14	10.66
591000	56.555	73.37	80.87	87.27	pCi/g	3/21/2016	2382.82	58.88	17.81	2508.82	118.27	32.75

011061

011062

Southwest Research Institute, Division 1, Radiochemistry

Gamma Spectroscopy Summary Sheet (1 sig)

Client: Tetra Tech (Set#1)
Task Order: 160115-1
Prep Page: N/A
Prep Date: N/A

JR 4/14/16

R Spurs 4/19/16

Project #: 21431.01.001
SRR: 56591, 56639, 56785, 56876
TPU sig factor: 1
Units: g

Notes: _____

Sample ID 588049 | Sample # 7265 | Sample Size 1 Each | Date Analyzed 3/15/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	50.517	100.0%	1.0	3.08E+03	7.55E+01	2.74E+01	2.11E+01		
^{214}Pb	50.517	100.0%	1.0	3.24E+03	1.53E+02	3.72E+01	1.98E+01		
^{226}Ra	50.517	100.0%	1.0	4.06E+03	2.60E+02	5.16E+02	1.23E+02		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 588049D | Sample # 7263 | Sample Size 1 Each | Date Analyzed 3/16/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RPDs	DER	
^{214}Bi	50.529	100.0%	1.0	2.97E+03	7.29E+01	3.01E+01	2.10E+01		3.9	1.1	Pass
^{214}Pb	50.529	100.0%	1.0	3.13E+03	1.47E+02	4.61E+01	2.04E+01		3.4	0.5	Pass
^{226}Ra	50.529	100.0%	1.0	3.80E+03	2.35E+02	3.83E+02	9.73E+01		6.7	0.7	Pass

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.
Duplicate Evaluation = (Sample-Duplicate) / sqrt ((TPUsample^2) + (TPUdup^2)) # 3

Sample ID 588556R | Sample # 7261 | Sample Size 1 Each | Date Analyzed 3/16/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	51.770	100.00%	1.0	2.14E+03	5.37E+01	2.17E+01	1.76E+01		
^{214}Pb	51.770	100.00%	1.0	2.27E+03	1.07E+02	3.57E+01	1.67E+01		
^{226}Ra	51.770	100.00%	1.0	2.90E+03	1.80E+02	2.89E+02	7.65E+01		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 590212 | Sample # 7259 | Sample Size 1 Each | Date Analyzed 3/16/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	50.548	100.00%	1.0	4.34E+03	1.04E+02	3.70E+01	2.53E+01		
^{214}Pb	50.548	100.00%	1.0	4.60E+03	2.16E+02	5.51E+01	2.47E+01		
^{226}Ra	50.548	100.00%	1.0	5.46E+03	3.28E+02	4.40E+02	1.13E+02		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Note: Ra 226 is not Reported from this spreadsheet. JR 4/20/16

011063

Southwest Research Institute, Division 1, Radiochemistry

Gamma Spectroscopy Summary Sheet (1 sig)

Client: Tetra Tech (Set#1)
Task Order: 160115-1
Prep Page: N/A
Prep Date: N/A

Project #: 21431.01.001
SRR: 56591, 56639, 56785, 56876
TPU sig factor: 1
Units: g

Notes: _____

Sample ID 590213 | Sample # 7257 | Sample Size 1 Each | Date Analyzed 3/16/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	50.300	100.00%	1.0	2.13E+03	5.36E+01	2.78E+01	1.80E+01		
^{214}Pb	50.300	100.00%	1.0	2.29E+03	1.08E+02	3.89E+01	1.73E+01		
^{226}Ra	50.300	100.00%	1.0	2.75E+03	1.75E+02	3.15E+02	8.08E+01		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 590214 | Sample # 7255 | Sample Size 1 Each | Date Analyzed 3/16/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	50.318	100.00%	1.0	1.96E+02	7.35E+00	8.23E+00	5.44E+00		
^{214}Pb	50.318	100.00%	1.0	2.09E+02	1.08E+01	1.24E+01	5.06E+00		
^{226}Ra	50.318	100.00%	1.0	9.50E+02	6.74E+01	1.48E+02	4.10E+01		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 591000 | Sample # 7253 | Sample Size 1 Each | Date Analyzed 3/16/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	50.711	100.00%	1.0	1.14E+03	3.06E+01	1.63E+01	1.29E+01		
^{214}Pb	50.711	100.00%	1.0	1.20E+03	5.72E+01	2.39E+01	1.23E+01		
^{226}Ra	50.711	100.00%	1.0	1.62E+03	1.11E+02	2.48E+02	6.30E+01		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Apex™

Analysis Report for 588049 Set#2

Tetra Tech TO#160115-1 Set#2

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 588049 Set#2
Sample Description	: Tetra Tech TO#160115-1 Set#2
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/16/2016 4:18:58AM
Acquisition Started	: 3/16/2016 2:00:37PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3619.9 seconds
Dead Time	: 0.55 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7251

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.969	1.97E+05	4.76E+03	
PB-214	0.997	2.07E+05	9.74E+03	
RA-226	0.994	2.33E+05	1.44E+04	

Analysis Report for 588049 Set#2

Tetra Tech TO#160115-1 Set#2

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 2:14:39PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.22	2.21681E+00	1.56		
	2	36.38	-5.87500E-02	- 57.6		
	3	46.63	3.56327E-01	9.04		
M	4	50.20	-4.90052E-02	- 28.5		
m	5	53.27	-1.22189E-01	- 23.7		
	6	67.77	1.88783E+00	2.53		
M	7	74.88	5.80628E-01	4.36		
m	8	77.16	1.12700E+00	4.27		
m	9	81.14	2.57451E-01	4.78		
m	10	83.89	6.80298E-01	4.32		
m	11	87.35	3.67422E-01	4.51		
m	12	89.97	5.09260E-02	11.50		
	13	94.74	-1.50556E-01	- 24.4		
	14	144.16	1.06867E+00	4.99		
	15	154.31	6.15556E-01	5.81		
	17	236.12	1.09944E-01	26.78		
	18	242.12	2.04078E+00	1.88		
M	19	256.36	5.27618E-01	3.43		
m	20	259.04	1.68760E-01	7.91		
M	21	269.62	1.06727E+00	2.04		
m	22	271.38	8.66952E-01	2.33		
m	23	274.78	1.09385E-01	11.34		
M	24	283.82	2.62234E-02	65.88		
m	25	286.22	2.59988E-02	65.88		
m	27	300.17	3.23928E-01	4.37		
m	28	302.87	1.92142E-01	6.60		
	29	324.00	9.19305E-02	22.56		
	30	330.06	8.11667E-02	27.31		
	31	338.52	1.11486E-01	15.71		
M	33	387.06	7.51940E-02	12.96		
m	34	389.30	8.49095E-02	11.80		
M	35	402.04	3.68037E-01	3.78		
m	36	405.16	2.45024E-01	5.00		
	37	427.35	9.43056E-02	16.95		

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Analysis Report for 588049 Set#2

Tetra Tech TO#160115-1 Set#2

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	38	455.11	5.15139E-02	20.59		
	39	480.66	3.53889E-02	30.98		
	40	487.29	3.98056E-02	43.52		
	41	580.43	4.90000E-02	27.35		
	43	665.81	2.66583E-01	5.66		
	44	703.51	9.24167E-02	12.10	Sum	
	45	720.18	3.75000E-02	37.31		
	46	768.77	7.56583E-01	2.44		
	47	786.31	1.72583E-01	7.54		
	48	806.60	1.74444E-01	6.92		
	49	832.29	6.05417E-02	18.77		
	50	839.72	5.02500E-02	18.92		
	51	934.50	3.87833E-01	4.53		
	52	964.60	3.70833E-02	21.43		
	53	1052.71	3.81667E-02	22.92		
	55	1134.47	4.10556E-02	21.81		
	56	1155.77	1.64375E-01	6.41		
	57	1182.51	3.05556E-02	23.31		
	58	1208.47	3.98889E-02	17.97		
	59	1238.71	5.96042E-01	2.48		
	60	1281.55	1.18708E-01	7.27		
M	61	1378.28	3.87294E-01	2.91		
m	62	1386.02	6.79981E-02	8.21		
M	63	1402.19	1.19925E-01	5.76		
m	64	1408.63	2.25221E-01	3.98		
	65	1509.87	1.77194E-01	6.66		
	66	1539.09	2.83194E-02	23.80		
	67	1583.98	5.19306E-02	13.01		
	68	1661.74	9.73611E-02	7.92		
	69	1730.26	2.41944E-01	3.81	Sum	
	71	1848.09	1.40694E-01	5.54		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

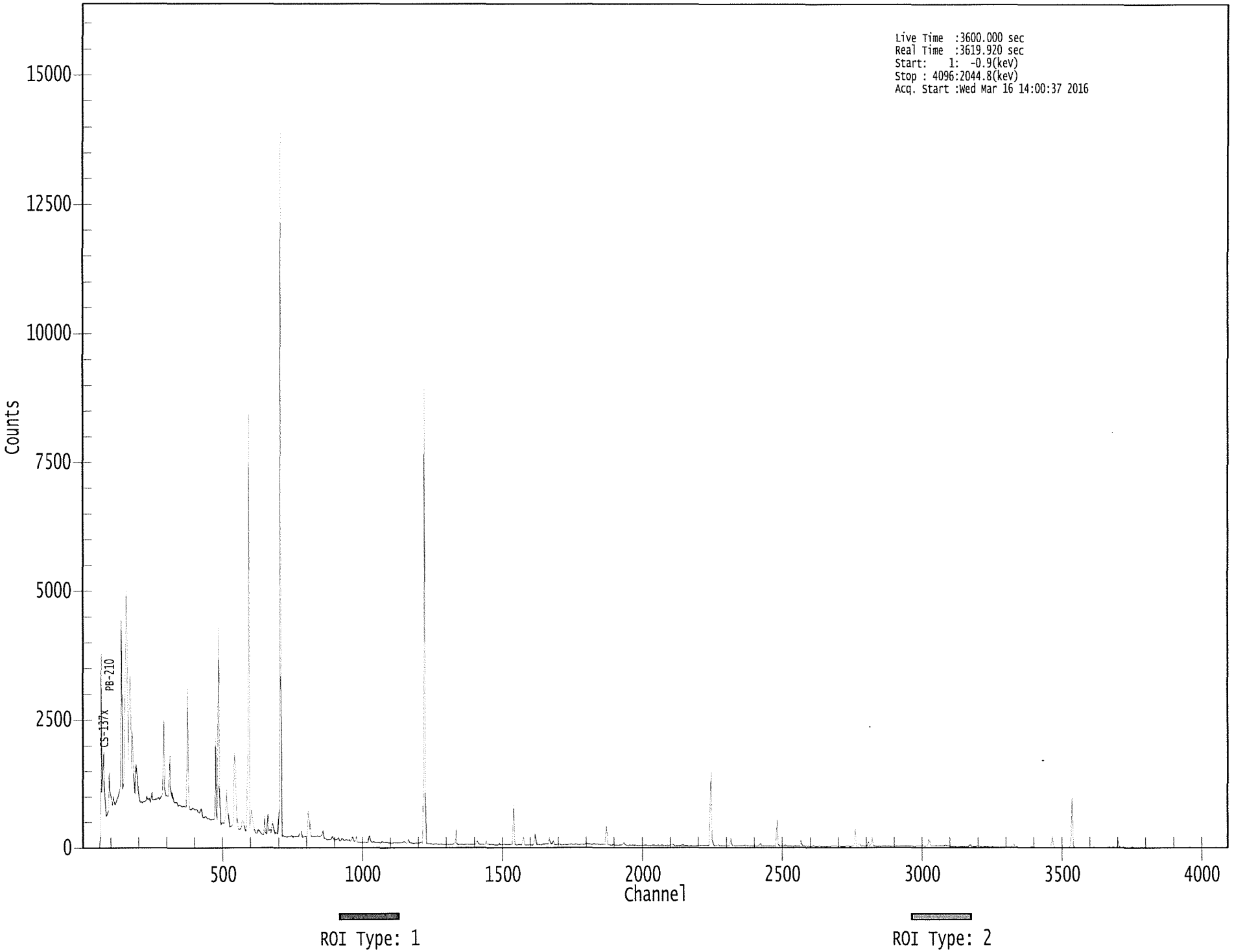
Analysis Report for 588049 Set#2

Tetra Tech TO#160115-1 Set#2

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	1.79E+03	9.70E+03	9.70E+03
+	BI-214	609.31	*	44.80	1.95E+05	1.48E+03	1.48E+03
		1120.29	*	14.80	1.97E+05		5.10E+03
		1764.49	*	15.36	1.99E+05		3.55E+03
+	PB-214	295.21	*	18.50	2.03E+05	2.40E+03	3.19E+03
		351.92	*	35.80	2.12E+05		2.40E+03
+	RA-226	186.10	*	3.50	2.33E+05	2.42E+04	2.42E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 588556 Set#2

TetraTech TO#160115-1 Set #2

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 588556 Set#2
Sample Description	: TetraTech TO#160115-1 Set #2
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/16/2016 2:38:59PM
Acquisition Started	: 3/16/2016 3:02:41PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3617.7 seconds
Dead Time	: 0.49 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7249

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.966	1.62E+05	3.96E+03	
PB-214	0.997	1.76E+05	8.30E+03	
RA-226	0.994	2.02E+05	1.23E+04	

Analysis Report for 588556 Set#2

TetraTech TO#160115-1 Set #2

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 2:14:08PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.18	2.42208E+00	1.45		
	2	36.38	7.77778E-03	429.46		
	3	46.68	4.55660E-01	7.05		
M	4	50.29	-7.23601E-02	- 33.7		
m	5	53.29	-4.54453E-02	- 34.1		
	6	67.78	1.96835E+00	2.49		
M	7	74.89	6.06499E-01	4.07		
m	8	77.17	1.31998E+00	3.96		
m	9	81.18	2.78340E-01	4.52		
m	10	83.89	7.90222E-01	4.01		
m	11	87.33	3.40706E-01	4.32		
m	12	89.86	5.23092E-02	11.80		
M	13	94.67	-5.35631E-01	- 10.2		
m	14	97.76	-3.79805E-02	- 31.4		
	15	144.13	9.53889E-01	4.63		
	16	154.31	5.93333E-01	5.62		
	18	236.17	-3.80000E-01	- 8.9		
	19	242.14	1.95044E+00	1.65		
M	20	256.33	5.61244E-01	3.16		
m	21	259.01	1.49526E-01	8.34		
M	22	269.58	9.56866E-01	2.11		
m	23	271.38	7.65167E-01	2.42		
m	24	274.86	1.07342E-01	10.43		
	25	283.76	-4.19781E+00	- 1.0		
m	27	300.10	2.87574E-01	4.33		
m	28	302.84	1.60252E-01	6.79		
	29	324.07	1.29875E-01	13.27		
	30	330.02	7.30556E-02	28.05		
	31	338.59	1.15347E-01	14.18		
	33	389.18	1.08278E-01	19.09		
M	34	402.07	3.62644E-01	3.69		
m	35	405.15	2.51594E-01	4.72		
	36	427.46	1.09611E-01	17.63		
	37	455.06	4.05417E-02	31.64		

Analysis Report for 588556 Set#2

TetraTech TO#160115-1 Set #2

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	38	480.45	1.13889E-02	131.40		
	39	487.35	3.57361E-02	33.42		
	40	511.06	1.86091E-01	8.41		
	41	580.43	4.27778E-02	22.96		
	43	665.80	2.15750E-01	6.30		
	44	703.56	5.82778E-02	16.22	Sum	
	45	768.79	6.43361E-01	2.63		
	46	786.31	1.41375E-01	7.54		
	47	806.60	1.51389E-01	7.13		
	48	832.30	4.93056E-02	21.32		
	49	839.44	-1.16667E-02	- 95.2		
	50	934.53	3.19833E-01	5.02		
	51	1052.66	3.91111E-02	19.51		
	53	1155.73	1.45764E-01	6.60		
	54	1208.21	2.54167E-02	21.81		
	55	1238.72	4.83361E-01	2.71		
	56	1281.64	1.17583E-01	6.80		
M	57	1378.32	3.20634E-01	3.23		
m	58	1385.78	5.34724E-02	9.38		
M	59	1402.08	9.82639E-02	6.36		
m	60	1408.58	1.79712E-01	4.55		
	61	1509.87	1.49722E-01	7.14		
	62	1583.94	4.83333E-02	12.09		
	63	1661.90	7.97222E-02	8.34		
	64	1730.37	1.97153E-01	4.11	Sum	
	66	1848.08	1.06500E-01	6.63		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	2.19E+03	8.71E+03	8.71E+03
+	BI-214	609.31	*	44.80	1.64E+05	1.30E+03	1.30E+03
		1120.29	*	14.80	1.68E+05		5.20E+03
		1764.49	*	15.36	1.57E+05		3.09E+03

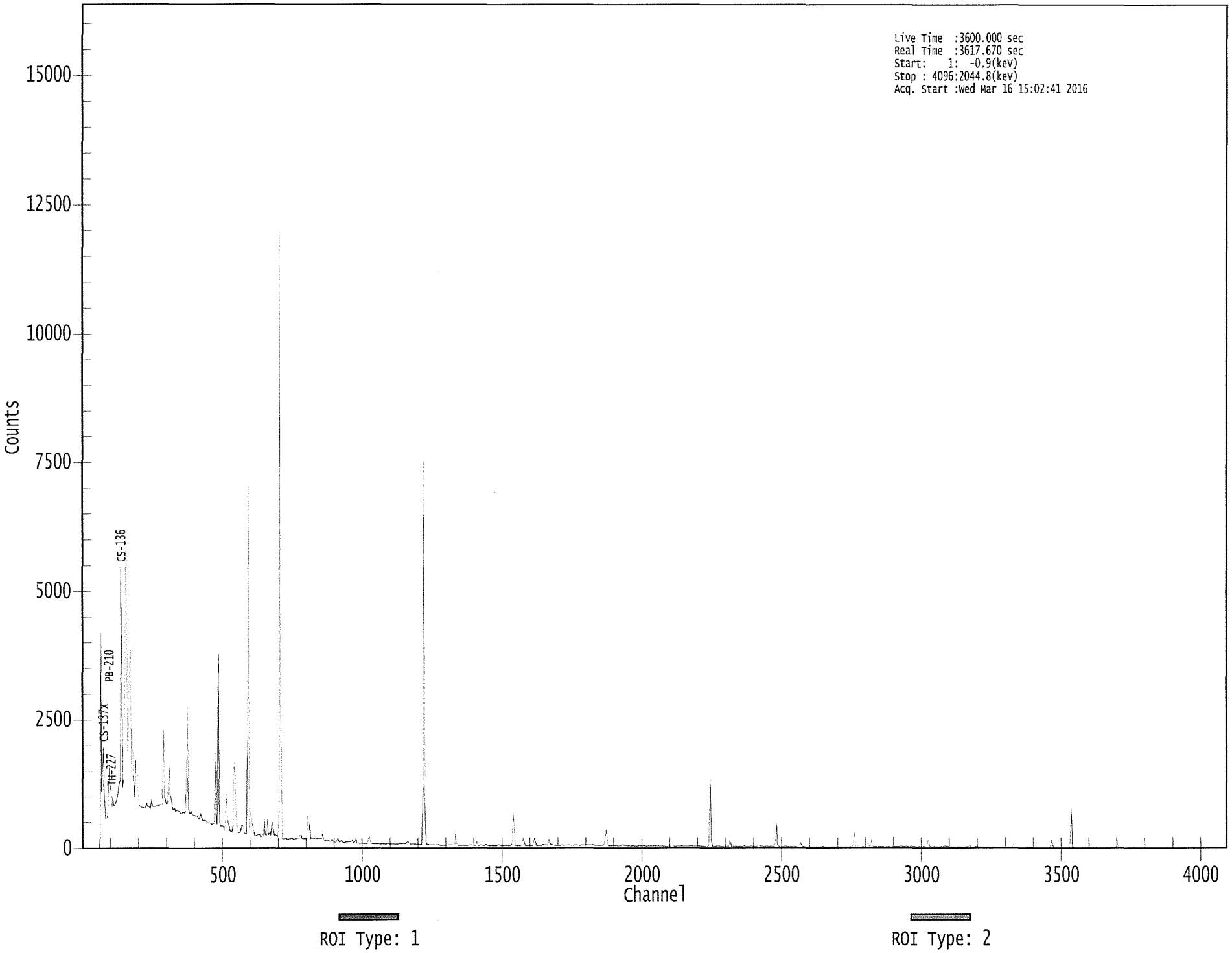
Analysis Report for 588556 Set#2

TetraTech TO#160115-1 Set #2

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
+	PB-214	295.21	*	18.50	1.70E+05	2.27E+03	2.84E+03
		351.92	*	35.80	1.84E+05		2.27E+03
+	RA-226	186.10	*	3.50	2.02E+05	1.83E+04	1.83E+04

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 588556Dup.Set#2

TetraTech TO#160115-1 Set 2

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 588556Dup.Set#2
Sample Description	: TetraTech TO#160115-1 Set 2
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/16/2016 2:42:46PM
Acquisition Started	: 3/16/2016 4:06:39PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3617.7 seconds
Dead Time	: 0.49 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7247

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.962	1.64E+05	4.01E+03	
PB-214	0.996	1.80E+05	8.48E+03	
RA-226	0.994	2.11E+05	1.28E+04	

Analysis Report for 588556Dup.Set#2

TetraTech TO#160115-1 Set 2

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 2:13:34PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.21	2.41042E+00	1.46		
	2	36.36	3.47222E-03	965.13		
	3	46.59	3.78091E-01	9.05		
M	4	50.29	-8.41688E-02	- 34.1		
m	5	53.30	-3.70812E-02	- 34.8		
	6	67.77	2.11103E+00	2.35		
M	7	74.90	5.64764E-01	4.44		
m	8	77.17	1.21565E+00	4.36		
m	9	81.14	2.83429E-01	4.71		
m	10	83.88	7.21186E-01	4.40		
m	11	87.36	3.31832E-01	4.60		
m	12	89.95	2.58437E-02	19.37		
	13	94.66	-5.54764E-01	- 9.9		
	14	122.34	9.19444E-02	32.78		
	15	144.13	9.64750E-01	3.45		
	16	154.29	6.97333E-01	5.87		
	18	210.85	3.86667E-02	68.80		
	19	236.16	-3.74500E-01	- 9.0		
	20	242.13	1.81710E+00	1.96		
M	21	256.36	5.11991E-01	3.34		
m	22	259.08	1.36000E-01	8.72		
M	23	269.61	9.78718E-01	2.07		
m	24	271.37	7.71242E-01	2.41		
M	25	283.79	-2.67191E-01	- 18.1		
m	26	286.21	-1.21309E-01	- 36.0		
m	28	300.17	3.17585E-01	4.21		
m	29	302.90	1.71190E-01	6.73		
	30	324.01	9.95139E-02	17.27		
	31	330.14	8.50555E-02	24.19		
	32	338.40	9.59028E-02	16.75		
	34	389.25	1.32708E-01	13.52		
M	35	402.05	3.55844E-01	3.74		
m	36	405.09	2.37100E-01	4.89		
	37	427.37	1.37681E-01	17.20		

Analysis Report for 588556Dup.Set#2
TetraTech TO#160115-1 Set 2

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	38	445.32	2.45417E-02	72.17		
	39	480.71	-1.71111E-02	- 91.3	Sum	
	40	487.25	1.25000E-02	121.07		
	41	580.49	6.58333E-02	22.89		
	43	665.84	2.16778E-01	5.24		
	44	703.45	7.17222E-02	15.87	Sum	
	45	720.17	4.76667E-02	15.59		
	46	768.79	6.27931E-01	2.95		
	47	786.29	1.22208E-01	7.82		
	48	806.64	1.55542E-01	8.69		
	49	832.36	5.98056E-02	18.77		
	50	839.69	-3.14583E-02	- 35.5		
	51	934.53	3.48889E-01	3.74		
	52	964.63	2.92361E-02	28.74		
	54	1155.77	1.47139E-01	7.87		
	55	1208.20	2.78333E-02	23.60		
	56	1238.77	5.03722E-01	2.71		
	57	1281.64	1.08306E-01	7.56		
M	58	1378.35	3.05105E-01	3.30		
m	59	1386.17	5.96110E-02	8.52		
M	60	1402.14	1.11112E-01	5.93		
m	61	1408.66	1.76205E-01	4.56		
	62	1509.97	1.33972E-01	6.61		
	63	1583.93	5.31111E-02	12.69		
	64	1661.99	7.25000E-02	8.74		
	65	1730.34	1.97014E-01	4.14	Sum	
	67	1848.12	1.22556E-01	5.66		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	-1.34E+03	8.36E+03	8.36E+03
+	BI-214	609.31	*	44.80	1.64E+05	1.61E+03	1.61E+03
		1120.29	*	14.80	1.67E+05		5.89E+03

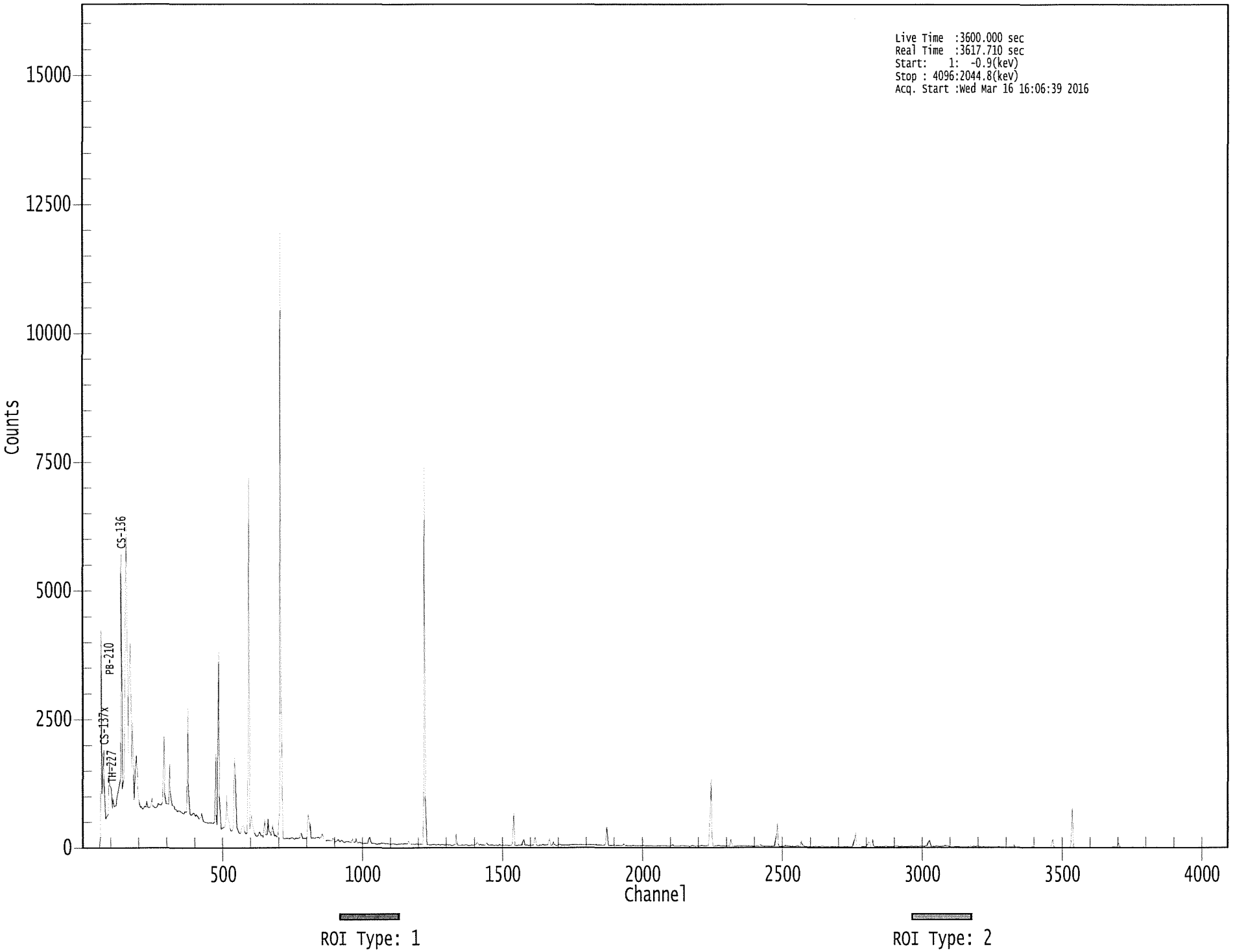
Analysis Report for 588556Dup.Set#2

TetraTech TO#160115-1 Set 2

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	BI-214	1764.49	*	15.36	1.62E+05	1.61E+03	3.42E+03
+	PB-214	295.21	*	18.50	1.75E+05	2.40E+03	2.88E+03
		351.92	*	35.80	1.87E+05		2.40E+03
+	RA-226	186.10	*	3.50	2.11E+05	1.81E+04	1.81E+04

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 590212 Set#2

TetraTech TO# 160115-1 Set#2

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 590212 Set#2
Sample Description	: TetraTech TO# 160115-1 Set#2
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/16/2016 2:55:36PM
Acquisition Started	: 3/16/2016 5:08:56PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3629.0 seconds
Dead Time	: 0.80 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7245

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.964	2.82E+05	6.71E+03	
PB-214	0.996	2.98E+05	1.40E+04	
RA-226	0.994	3.39E+05	2.04E+04	

Analysis Report for 590212 Set#2

TetraTech TO# 160115-1 Set#2

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 2:13:03PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.20	3.86917E+00	1.16		
	2	36.40	1.19583E-01	35.78		
	3	46.60	4.03146E-01	10.15		
	4	50.17	-5.99862E-02	- 48.7		
	5	67.77	2.34736E+00	2.67		
M	6	74.90	9.67504E-01	3.05		
m	7	77.16	2.02305E+00	2.97		
m	8	81.15	4.41785E-01	3.44		
m	9	83.88	1.25090E+00	3.01		
m	10	87.33	6.27253E-01	3.19		
m	11	89.89	1.05067E-01	7.70		
	12	94.68	-9.55278E-01	- 7.4		
	13	122.54	1.70153E-01	21.39		
	14	144.12	1.55874E+00	3.35		
	15	154.31	9.69722E-01	4.46		
	17	210.84	-6.30556E-02	- 68.2		
	18	236.15	-8.49778E-01	- 5.6		
	19	242.14	2.45963E+00	2.26		
M	20	254.18	2.30524E-01	6.99		
m	21	256.37	8.46195E-01	2.61		
m	22	258.98	2.66079E-01	6.12		
M	23	269.62	1.59562E+00	1.65		
m	24	271.38	1.29719E+00	1.88		
m	25	274.78	1.68078E-01	8.58		
M	26	283.81	1.65636E-01	8.96		
m	27	286.25	1.47940E-01	9.67		
m	29	300.20	5.01098E-01	3.29		
m	30	302.86	2.86085E-01	5.19		
	31	324.08	7.27083E-02	38.17		
	32	330.08	1.69431E-01	14.99		
	33	338.49	2.04028E-01	11.07		
	35	389.20	2.37500E-01	13.18		
M	36	402.05	6.42377E-01	2.80		
m	37	405.19	4.06919E-01	3.80		

Analysis Report for 590212 Set#2

TetraTech TO# 160115-1 Set#2

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	38	427.37	1.57778E-01	15.95		
	39	445.20	8.21806E-02	18.48		
	40	454.93	4.47778E-02	32.67		
	41	480.53	2.52778E-02	63.26		
	42	487.35	5.52083E-02	34.46		
	43	580.38	1.07306E-01	14.63		
	45	665.81	3.46250E-01	3.98		
	46	703.34	9.80556E-02	12.64	Sum	
	47	720.30	7.55000E-02	15.67		
	48	768.76	1.11694E+00	2.07		
	49	786.31	2.16944E-01	7.80		
	50	806.57	2.49750E-01	5.62		
	51	832.38	9.73056E-02	14.32		
	52	839.39	1.64722E-02	73.75		
	53	934.50	5.73361E-01	3.24		
	54	964.78	5.79444E-02	18.35		
	55	1052.49	5.21111E-02	17.90		
	57	1155.74	2.59333E-01	5.28		
	58	1208.09	6.41667E-02	17.84		
	59	1238.73	8.58472E-01	2.44		
	60	1281.62	1.93556E-01	6.06		
M	61	1378.35	5.65551E-01	2.39		
m	62	1385.95	1.05785E-01	6.58		
M	63	1402.17	1.77257E-01	4.73		
m	64	1408.64	3.11823E-01	3.40		
	65	1509.83	2.73444E-01	5.45		
	66	1539.38	3.08889E-02	31.71		
	67	1583.87	9.21667E-02	8.44		
	68	1662.11	1.28819E-01	5.99		
	69	1693.06	2.48889E-02	22.62		
	70	1730.34	3.44375E-01	3.36	Sum	
	72	1839.00	-9.01667E-02	- 8.6		
	73	1848.10	1.95611E-01	4.75		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

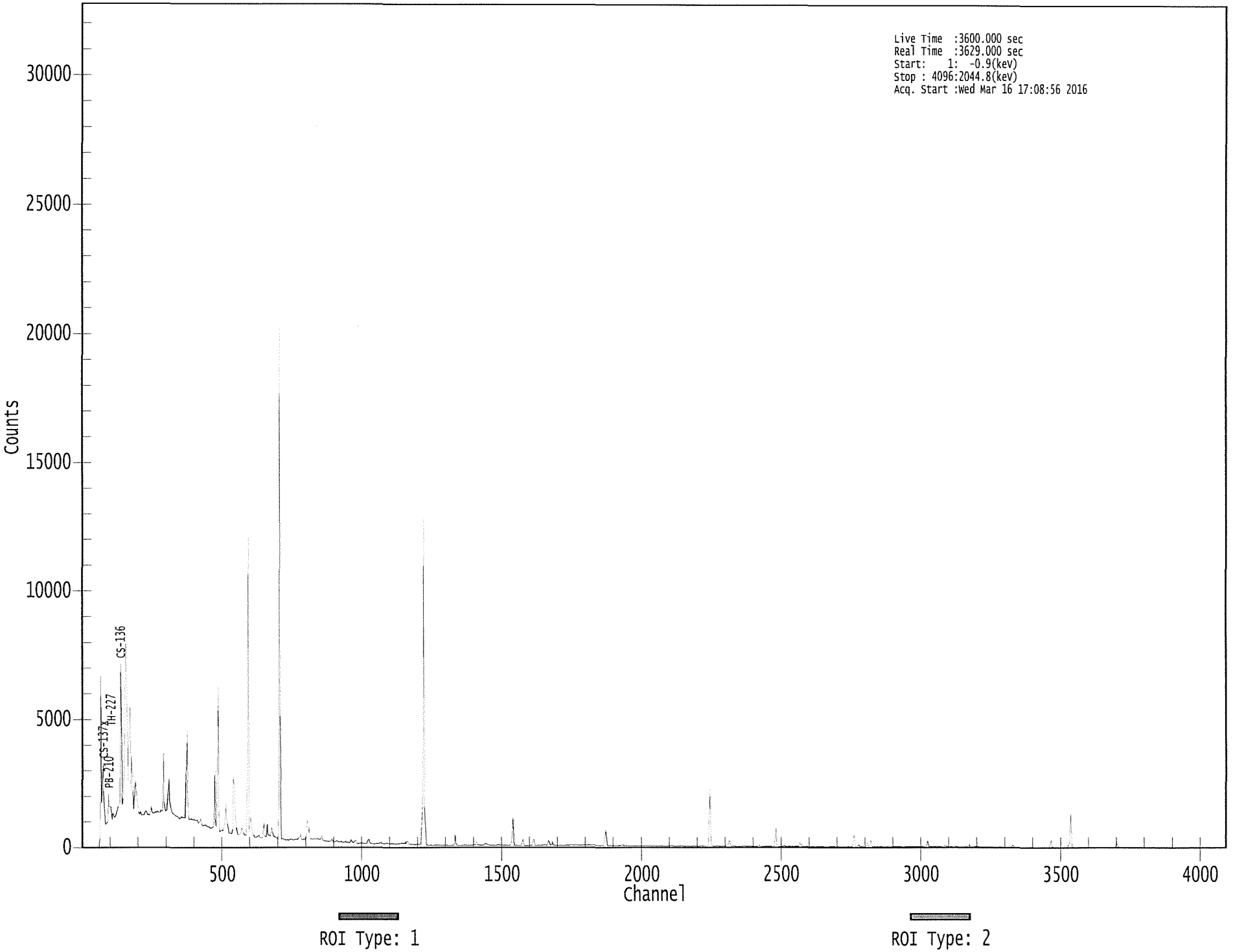
Analysis Report for 590212 Set#2

TetraTech TO# 160115-1 Set#2

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	-2.42E+03	1.10E+04	1.10E+04
+	BI-214	609.31	*	44.80	2.82E+05	1.65E+03	1.65E+03
		1120.29	*	14.80	2.82E+05		8.24E+03
		1764.49	*	15.36	2.82E+05		4.71E+03
+	PB-214	295.21	*	18.50	2.86E+05	2.65E+03	3.75E+03
		351.92	*	35.80	3.13E+05		2.65E+03
+	RA-226	186.10	*	3.50	3.39E+05	2.91E+04	2.91E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 590213 Set#2

TetraTech TO# 160115-1 Set#2

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 590213 Set#2
Sample Description	: TetraTech TO# 160115-1 Set#2
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/16/2016 2:57:26PM
Acquisition Started	: 3/16/2016 6:12:19PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3613.7 seconds
Dead Time	: 0.38 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7243

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.960	1.28E+05	3.18E+03	
PB-214	0.996	1.34E+05	6.33E+03	
RA-226	0.994	1.67E+05	1.09E+04	

Analysis Report for 590213 Set#2

TetraTech TO# 160115-1 Set#2

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 2:12:16PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.19	1.60529E+00	1.78		
	2	36.42	-1.20695E-02	- 252.7		
	3	46.58	3.74493E-01	7.64		
M	4	50.28	-7.70296E-02	- 30.0		
m	5	53.24	-3.31788E-02	- 31.7		
	6	67.77	1.90706E+00	2.31		
M	7	74.90	2.88086E-01	6.57		
m	8	77.19	6.61969E-01	6.42		
M	9	81.10	-2.04186E-02	- 23.6		
m	10	83.84	-9.70401E-01	- 5.6		
m	11	87.33	-3.52204E-01	- 5.7		
m	12	90.05	-1.92074E-03	- 217.5		
	13	94.77	-9.80556E-02	- 40.3		
	14	144.08	7.07792E-01	3.67		
	15	154.33	5.21833E-01	6.32		
	17	236.15	-4.27861E-01	- 7.6		
	18	242.14	1.21525E+00	2.83		
M	19	256.39	4.00240E-01	3.81		
m	20	259.04	1.24319E-01	8.92		
M	21	269.61	7.54847E-01	2.38		
m	22	271.40	6.17101E-01	2.69		
m	23	274.85	7.69076E-02	12.64		
	24	283.79	-3.70422E+00	- 1.1		
m	26	300.23	2.51847E-01	4.77		
m	27	302.88	1.21449E-01	8.10		
	28	324.08	8.77639E-02	17.40		
M	29	330.11	6.23453E-02	26.92		
m	30	334.49	1.36717E-02	28.79		
m	31	338.50	4.38720E-02	27.01		
	33	389.25	8.89444E-02	18.61		
M	34	402.06	2.75412E-01	4.33		
m	35	405.23	1.71337E-01	5.98		
	36	445.34	-8.47222E-03	- 170.9		
	37	455.19	3.94444E-02	28.39		

Analysis Report for 590213 Set#2

TetraTech TO# 160115-1 Set#2

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	38	480.80	1.22917E-02	87.46	Sum	
	39	487.43	3.98333E-02	22.08		
	41	665.86	1.52083E-01	6.03		
	42	703.76	5.11528E-02	17.06	Sum	
	43	720.20	4.56528E-02	23.36		
	44	768.79	5.03389E-01	3.33		
	45	786.41	1.00750E-01	11.07		
	46	806.63	1.12944E-01	6.99		
	47	832.39	4.61528E-02	19.75		
	48	839.43	6.38885E-04	1448.68		
	49	934.55	2.42944E-01	4.44		
	51	1155.81	1.03458E-01	9.03		
	52	1208.34	4.02083E-02	16.55		
	53	1238.85	4.06194E-01	3.16		
	54	1281.63	8.79722E-02	8.97		
	55	1378.51	2.06222E-01	4.74		
M	56	1402.19	7.43348E-02	7.32		
m	57	1408.72	1.33225E-01	5.27		
	58	1509.96	1.18611E-01	7.96		
	59	1584.10	3.09583E-02	17.41		
	60	1662.00	6.19167E-02	8.86		
	61	1730.36	1.33278E-01	5.23	Sum	
	63	1848.19	9.20000E-02	6.79		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	2.06E+03	8.23E+03	8.23E+03
+	BI-214	609.31	*	44.80	1.26E+05	1.07E+03	1.07E+03
		1120.29	*	14.80	1.29E+05		4.83E+03
		1764.49	*	15.36	1.29E+05		3.10E+03
+	PB-214	295.21	*	18.50	1.28E+05	1.85E+03	2.56E+03
		351.92	*	35.80	1.42E+05		1.85E+03
+	RA-226	186.10	*	3.50	1.67E+05	2.35E+04	2.35E+04

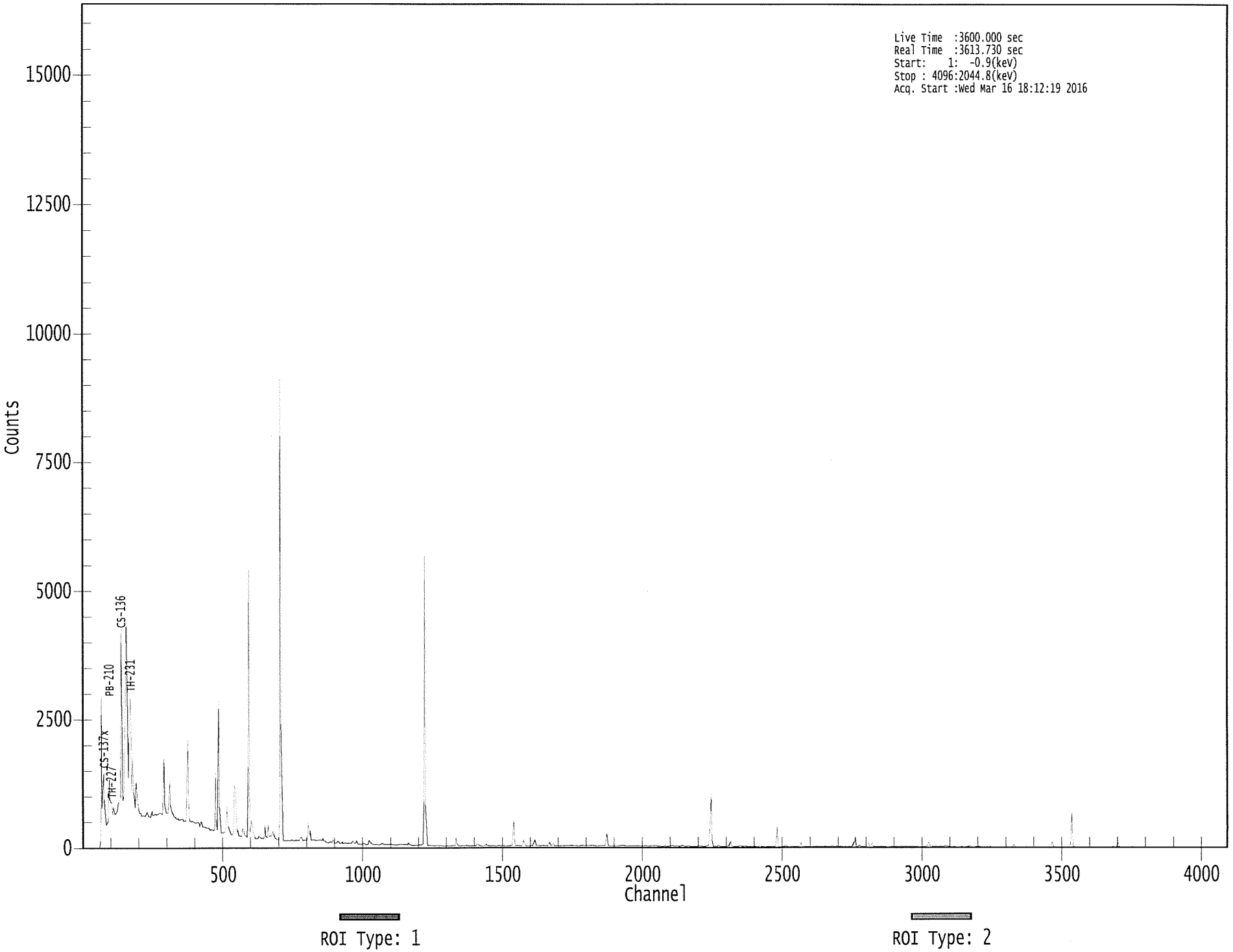
Analysis Report for 590213 Set#2

TetraTech TO# 160115-1 Set#2

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 590214 Set#2

TetraTech TO#160115-1 Set#2

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 590214 Set#2
Sample Description	: TetraTech TO#160115-1 Set#2
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/16/2016 4:08:43PM
Acquisition Started	: 3/16/2016 7:37:14PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3602.9 seconds
Dead Time	: 0.08 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7241

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/Each)	Wt mean Activity Uncertainty	Comments
BI-214	0.961	1.22E+04	4.36E+02	
PB-214	0.998	1.41E+04	7.06E+02	
RA-226	0.998	5.29E+04	3.49E+03	

Analysis Report for 590214 Set#2

TetraTech TO#160115-1 Set#2

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 2:11:41PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M 1	46.57	8.90055E-02	9.19		
m 2	50.08	1.54205E-01	6.47		
3	63.33	2.75167E-01	8.25		
4	67.78	1.68056E-01	11.06		
M 5	74.83	-5.91752E-02	- 20.3		
m 6	77.20	-1.39547E-01	- 16.2		
M 7	81.20	1.69155E-01	7.05		
m 8	83.90	4.37380E-01	3.48		
M 9	92.71	4.84379E-01	3.16		
m 10	94.68	1.69706E-01	6.14		
11	144.03	1.80389E-01	8.48		
12	154.33	1.22722E-01	12.16		
14	236.07	6.83889E-02	22.07		
15	242.20	3.48333E-02	33.12		
16	256.33	1.21917E-01	9.54		
M 17	269.59	2.01885E-01	4.33		
m 18	271.40	1.64331E-01	4.86		
m 20	300.10	5.72095E-02	9.57		
21	324.03	1.38472E-02	48.70		
22	330.23	1.56111E-02	46.67		
M 24	402.04	6.29617E-02	8.13		
m 25	405.15	4.47185E-02	9.67		
27	665.85	1.87361E-02	20.01		
28	768.76	6.50278E-02	8.35		
29	934.64	2.21111E-02	16.72		
31	1238.73	3.53472E-02	10.73		
32	1378.62	2.31250E-02	14.85		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

Analysis Report for 590214 Set#2

TetraTech TO#160115-1 Set#2

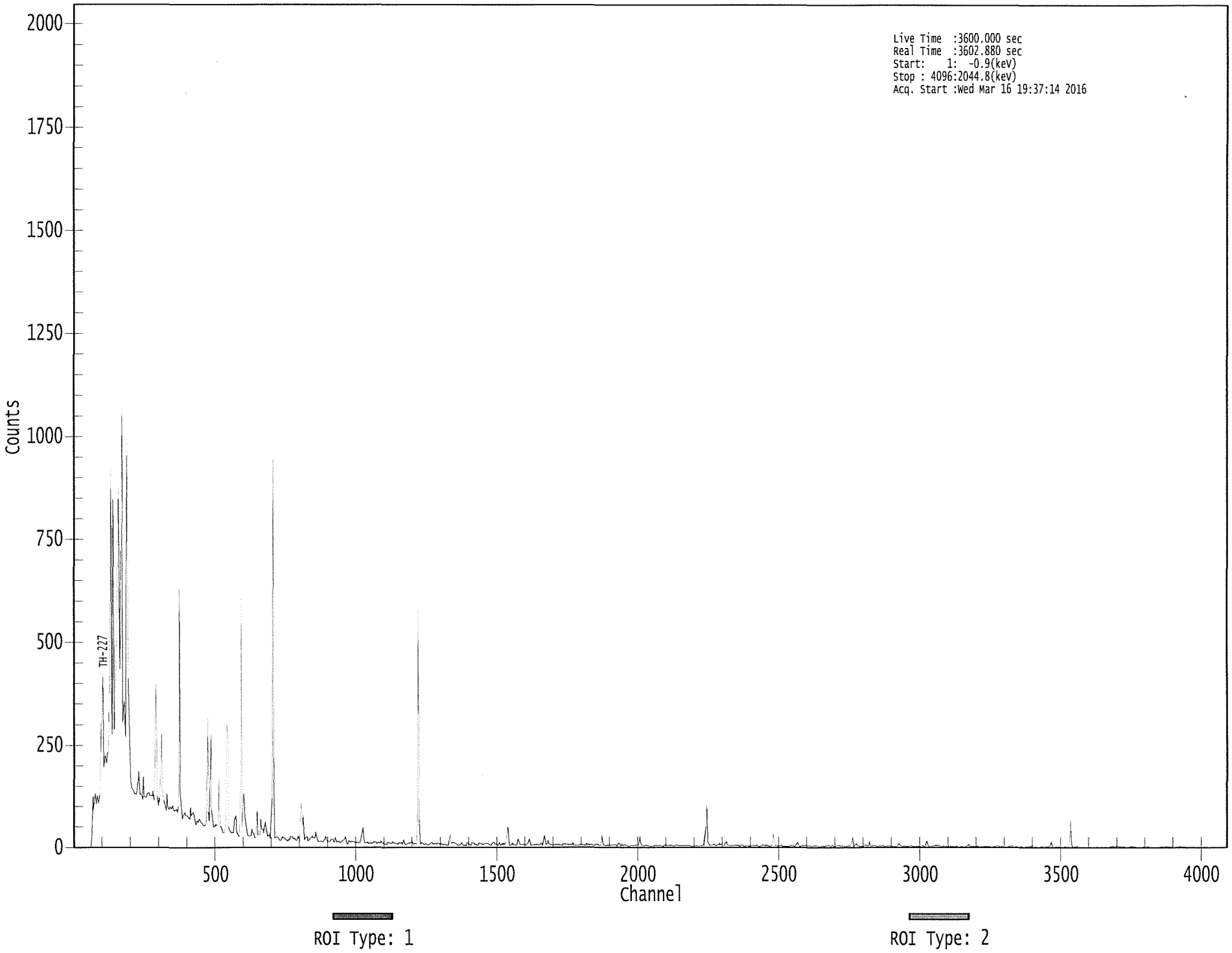
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	2.20E+03	3.52E+03	3.52E+03
+	BI-214	609.31	*	44.80	1.22E+04	4.54E+02	4.54E+02
		1120.29	*	14.80	1.17E+04		1.38E+03
		1764.49	*	15.36	1.29E+04		1.20E+03
+	PB-214	295.21	*	18.50	1.31E+04	5.24E+02	1.06E+03
		351.92	*	35.80	1.53E+04		5.24E+02
+	RA-226	186.10	*	3.50	5.29E+04	5.59E+03	5.59E+03

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 591000 Set#2

TetraTech TO#160115-1 Set #2

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 591000 Set#2
Sample Description	: TetraTech TO#160115-1 Set #2
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/16/2016 4:11:02PM
Acquisition Started	: 3/16/2016 8:38:24PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3611.7 seconds
Dead Time	: 0.32 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7239

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.964	1.09E+05	2.74E+03	
PB-214	0.996	1.12E+05	5.32E+03	
RA-226	0.994	1.37E+05	8.52E+03	

Analysis Report for 591000 Set#2

TetraTech TO#160115-1 Set #2

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 2:10:52PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.16	1.16736E+00	2.18		
	2	36.39	-9.76386E-03	- 274.1		
	3	46.57	3.66424E-01	7.71		
M	4	50.10	-6.24190E-02	- 28.6		
m	5	53.29	-2.28081E-01	- 14.0		
	6	67.77	1.37133E+00	2.88		
M	7	74.90	4.34327E-01	5.07		
m	8	77.18	8.53663E-01	4.97		
m	9	81.15	1.30226E-01	6.17		
m	10	83.90	3.73783E-01	5.11		
m	11	87.36	2.44932E-01	5.31		
m	12	89.84	4.76804E-02	10.76		
	13	94.79	-1.08194E-01	- 26.1		
	14	144.11	5.47569E-01	5.45		
	15	154.30	3.73611E-01	8.10		
	17	236.14	-3.02305E-01	- 8.5		
	18	242.17	1.05679E+00	3.27		
M	19	256.46	2.55845E-01	5.11		
m	20	259.12	1.08082E-01	9.63		
M	21	269.61	4.94915E-01	3.09		
m	22	271.33	3.86993E-01	3.64		
m	24	300.14	1.58644E-01	6.69		
m	25	302.82	7.01771E-02	12.36		
	26	324.06	2.41111E-02	67.42		
	27	330.14	2.08333E-02	78.96		
	28	338.54	6.27778E-02	19.68		
M	30	402.02	1.90554E-01	5.44		
m	31	405.14	1.26805E-01	7.26		
	33	665.81	1.35778E-01	7.22		
	34	720.18	3.72917E-02	23.39		
	35	768.75	4.29458E-01	3.27		
	36	786.27	7.57361E-02	10.96		
	37	806.66	9.00278E-02	12.15		
	38	832.29	3.10417E-02	29.57		

Analysis Report for 591000 Set#2

TetraTech TO#160115-1 Set #2

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	39	839.51	5.55556E-04	1677.42		
	40	934.64	2.18611E-01	4.97		
	42	1155.82	9.94861E-02	8.35		
	43	1208.36	2.28333E-02	22.81		
	44	1238.72	3.52083E-01	3.24		
	45	1281.70	9.22639E-02	9.39		
M	46	1378.32	2.12811E-01	4.01		
m	47	1385.97	4.67366E-02	9.58		
M	48	1402.16	8.74541E-02	6.48		
m	49	1408.69	1.30921E-01	5.19		
	50	1509.85	1.05056E-01	7.83		
	51	1662.20	4.23889E-02	11.97		
	52	1730.28	1.28792E-01	5.28	Sum	
	54	1848.14	7.72222E-02	7.33		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

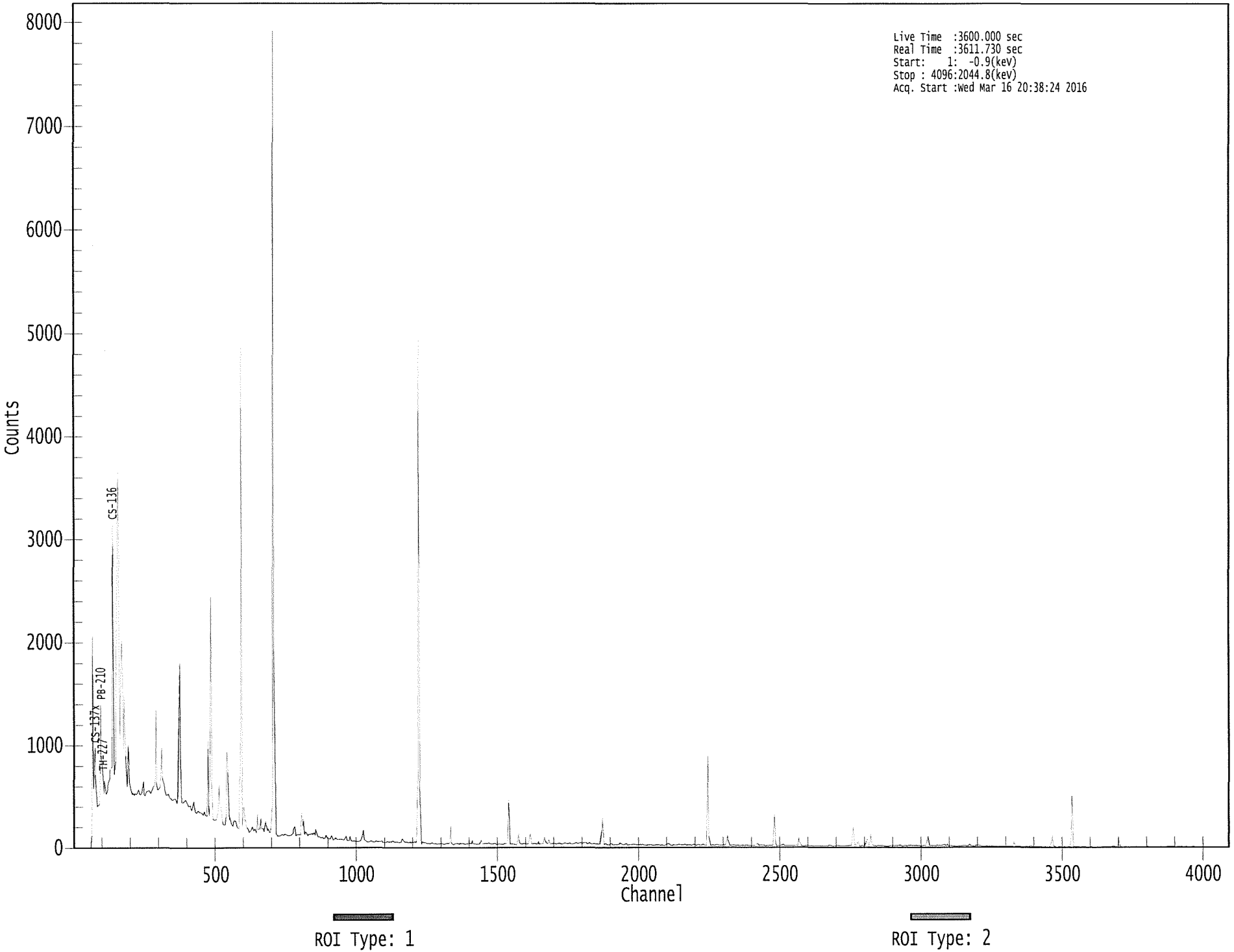
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	7.68E+02	7.57E+03	7.57E+03
+	BI-214	609.31	*	44.80	1.08E+05	1.09E+03	1.09E+03
		1120.29	*	14.80	1.11E+05		4.71E+03
		1764.49	*	15.36	1.09E+05		2.65E+03
+	PB-214	295.21	*	18.50	1.06E+05	1.75E+03	2.43E+03
		351.92	*	35.80	1.21E+05		1.75E+03
+	RA-226	186.10	*	3.50	1.37E+05	1.31E+04	1.31E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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011096

011097

Southwest Research Institute, Division 1, Radiochemistry

Gamma Spectroscopy Summary Sheet (1 sig)

Client: Tetra Tech (Set#2)
Task Order: 160115-1
Prep Page: N/A
Prep Date: N/A JR 4/14/16

RDP 4/19/16

Project #: 21431.01.001
SRR: 56591, 56639, 56785, 56876
TPU sig factor: 1
Units: g

Notes:

Sample ID 588049 | Sample # 7251 | Sample Size 1 Each | Date Analyzed 3/16/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	53.498	100.00%	1	3.68E+03	8.89E+01	2.76E+01	2.25E+01		
^{214}Pb	53.498	100.00%	1	3.87E+03	1.82E+02	4.49E+01	2.17E+01		
^{226}Ra	53.498	100.00%	1	4.36E+03	2.70E+02	4.53E+02	1.11E+02		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 588556 | Sample # 7249 | Sample Size 1 Each | Date Analyzed 3/16/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	54.971	100.0%	1	2.95E+03	7.20E+01	2.37E+01	1.95E+01		
^{214}Pb	54.971	100.0%	1	3.21E+03	1.51E+02	4.12E+01	1.94E+01		
^{226}Ra	54.971	100.0%	1	3.67E+03	2.24E+02	3.33E+02	8.67E+01		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 588556D | Sample # 7247 | Sample Size 1 Each | Date Analyzed 3/16/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RPDs	DER	
^{214}Bi	55.580	100.0%	1	2.95E+03	7.22E+01	2.90E+01	1.99E+01		0.3	0.1	Pass
^{214}Pb	55.580	100.0%	1	3.24E+03	1.53E+02	4.32E+01	1.97E+01		1.1	0.2	Pass
^{226}Ra	55.580	100.0%	1	3.80E+03	2.31E+02	3.25E+02	8.57E+01		3.5	0.4	Pass

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.
Duplicate Evaluation = (Sample-Duplicate) / sqrt ((TPUsample^2) + (TPUdup^2)) # 3

Sample ID 590212 | Sample # 7245 | Sample Size 1 Each | Date Analyzed 3/16/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	51.714	100.00%	1	5.45E+03	1.30E+02	3.20E+01	2.75E+01		
^{214}Pb	51.714	100.00%	1	5.76E+03	2.71E+02	5.12E+01	2.62E+01		
^{226}Ra	51.714	100.00%	1	6.56E+03	3.95E+02	5.63E+02	1.38E+02		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Note: Ra 226 is not Reported from this spreadsheet. JR 4/20/16

011098

Southwest Research Institute, Division 1, Radiochemistry

Gamma Spectroscopy Summary Sheet (1 sig)

Client: Tetra Tech (Set#2)
Task Order: 160115-1
Prep Page: N/A
Prep Date: N/A

Project #: 21431.01.001
SRR: 56591, 56639, 56785, 56876
TPU sig factor: 1
Units: g

Notes: _____

Sample ID 590213 | Sample # 7243 | Sample Size 1 Each | Date Analyzed 3/16/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	52.018	100.00%	1	2.46E+03	6.10E+01	2.05E+01	1.85E+01		
^{214}Pb	52.018	100.00%	1	2.58E+03	1.22E+02	3.55E+01	1.75E+01		
^{226}Ra	52.018	100.00%	1	3.20E+03	2.10E+02	4.51E+02	1.08E+02		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 590214 | Sample # 7241 | Sample Size 1 Each | Date Analyzed 3/16/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	51.840	100.00%	1	2.36E+02	8.42E+00	8.75E+00	5.83E+00		
^{214}Pb	51.840	100.00%	1	2.71E+02	1.36E+01	1.01E+01	5.48E+00		
^{226}Ra	51.840	100.00%	1	1.02E+03	6.74E+01	1.08E+02	3.52E+01		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 591000 | Sample # 7239 | Sample Size 1 Each | Date Analyzed 3/16/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	50.077	100.00%	1	2.18E+03	5.48E+01	2.19E+01	1.78E+01		
^{214}Pb	50.077	100.00%	1	2.25E+03	1.06E+02	3.49E+01	1.66E+01		
^{226}Ra	50.077	100.00%	1	2.74E+03	1.70E+02	2.62E+02	7.16E+01		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Apex™

Analysis Report for 588049 Set#1

Tetra Tech TO#160115-1 Set#1

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 588049 Set#1
Sample Description	: Tetra Tech TO#160115-1 Set#1
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/15/2016 11:24:07PM
Acquisition Started	: 3/15/2016 11:24:50PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3616.4 seconds
Dead Time	: 0.45 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7265

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/Each)	Wt mean Activity Uncertainty	Comments
BI-214	0.959	1.56E+05	3.81E+03	
PB-214	0.996	1.64E+05	7.71E+03	
RA-226	0.994	2.05E+05	1.31E+04	

Analysis Report for 588049 Set#1

Tetra Tech TO#160115-1 Set#1

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 2:18:59PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.22	1.87558E+00	1.64		
	2	36.40	-2.73749E-02	- 118.9		
	3	46.64	3.54132E-01	8.41		
	4	50.08	7.77778E-03	267.19		
	5	67.78	1.91078E+00	2.39		
M	6	74.91	4.87915E-01	4.53		
m	7	77.18	1.04830E+00	4.43		
m	8	81.16	2.34076E-01	4.92		
m	9	83.90	6.33814E-01	4.47		
m	10	87.38	3.21881E-01	4.67		
m	11	89.93	2.62390E-02	19.25		
	12	94.74	-1.08139E-01	- 39.2		
	13	144.12	8.51333E-01	4.41		
	14	154.32	5.35292E-01	5.71		
	16	236.13	-3.75945E-01	- 8.8		
	17	242.13	1.53808E+00	2.40		
M	18	256.36	4.77228E-01	3.58		
m	19	259.14	1.45791E-01	8.55		
M	20	269.64	8.97271E-01	2.25		
m	21	271.41	7.23643E-01	2.58		
m	22	274.96	8.49158E-02	13.09		
	23	286.32	1.64542E-01	16.51		
m	25	300.14	2.71513E-01	4.68		
m	26	302.83	1.52659E-01	7.10		
	27	324.09	7.34028E-02	25.76		
	28	330.08	8.45694E-02	22.57		
	29	338.41	9.04583E-02	17.54		
M	31	402.06	3.29454E-01	3.89		
m	32	405.11	2.32220E-01	4.91		
	33	427.20	9.83611E-02	16.99		
	34	445.30	3.24722E-02	34.94		
	35	480.79	1.66111E-02	84.12	Sum	
	36	487.46	-1.83472E-02	- 90.8		
	37	511.31	1.99924E-01	9.67		

Analysis Report for 588049 Set#1

Tetra Tech TO#160115-1 Set#1

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	38	580.43	3.27778E-02	28.51		
	40	665.83	1.85139E-01	6.48		
	41	703.43	7.04444E-02	13.59	Sum	
	42	720.40	4.04444E-02	26.18		
	43	768.79	5.77444E-01	2.86		
	44	786.43	1.21278E-01	10.03		
	45	806.64	1.41903E-01	8.45		
	46	832.55	3.25000E-02	35.92		
	47	839.37	-5.27778E-03	- 215.7		
	48	934.52	3.22722E-01	4.36		
	50	1155.79	1.33500E-01	7.29		
	51	1238.74	4.87472E-01	2.69		
	52	1281.66	1.21278E-01	8.33		
M	53	1378.36	3.04658E-01	3.32		
m	54	1385.95	6.32532E-02	8.30		
M	55	1402.25	1.01442E-01	6.30		
m	56	1408.77	1.88603E-01	4.38		
	57	1509.86	1.58569E-01	6.22		
	58	1584.21	5.28889E-02	11.99		
	59	1662.08	6.30556E-02	9.32		
	60	1730.41	1.88222E-01	4.24	Sum	
	62	1848.22	1.08819E-01	5.95		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	1.66E+03	8.76E+03	8.76E+03
+	BI-214	609.31	*	44.80	1.56E+05	1.38E+03	1.38E+03
		1120.29	*	14.80	1.58E+05		4.53E+03
		1764.49	*	15.36	1.55E+05		3.12E+03
+	PB-214	295.21	*	18.50	1.57E+05	1.88E+03	2.97E+03
		351.92	*	35.80	1.71E+05		1.88E+03
+	RA-226	186.10	*	3.50	2.05E+05	2.61E+04	2.61E+04

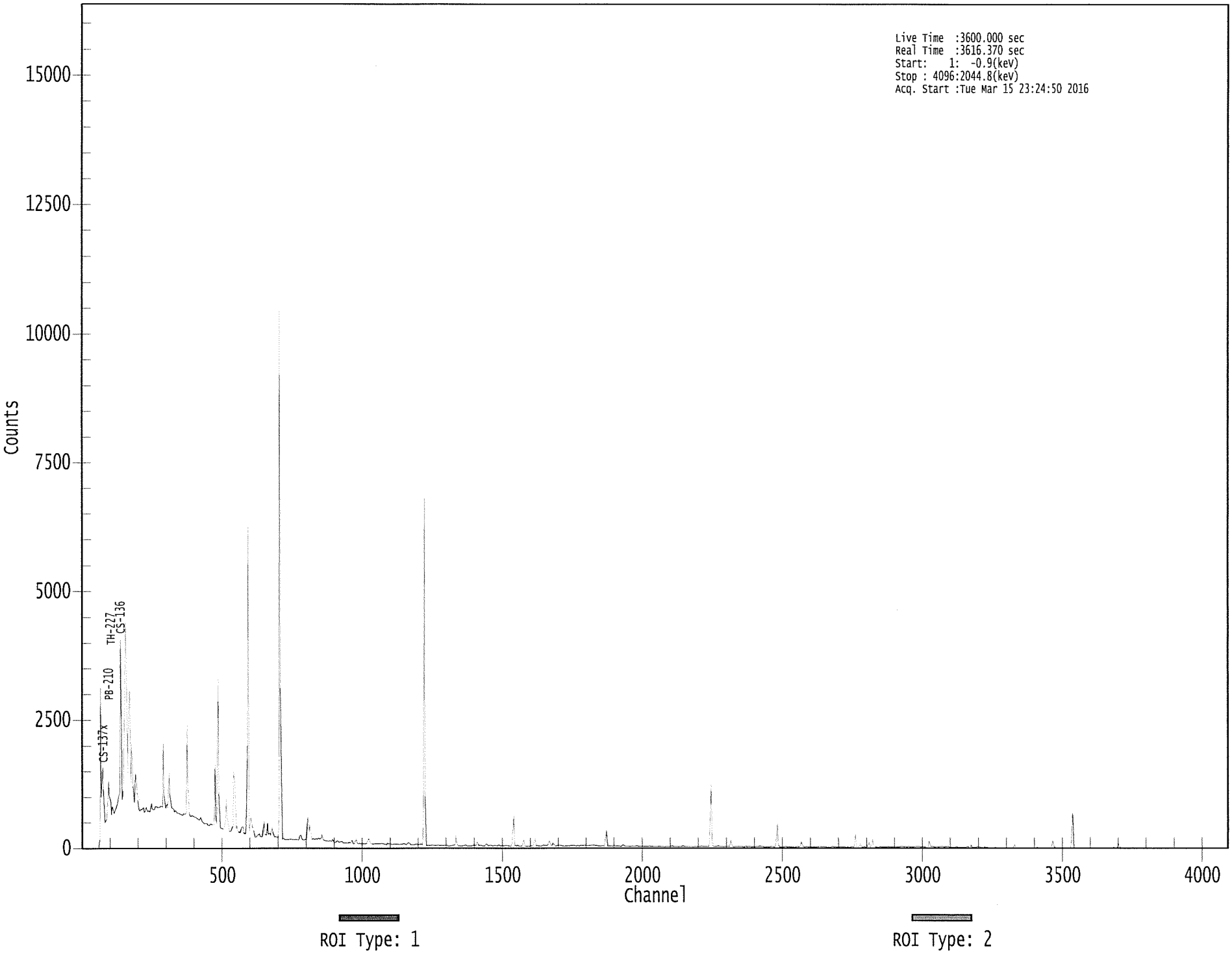
Analysis Report for 588049 Set#1

Tetra Tech TO#160115-1 Set#1

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 588049D Set#1

Tetra Tech TO#160115-1 Set#1

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 588049D Set#1
Sample Description	: Tetra Tech TO#160115-1 Set#1
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/16/2016 1:40:00AM
Acquisition Started	: 3/16/2016 1:40:17AM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3615.7 seconds
Dead Time	: 0.43 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7263

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.962	1.50E+05	3.68E+03	
PB-214	0.996	1.58E+05	7.45E+03	
RA-226	0.994	1.92E+05	1.19E+04	

Analysis Report for 588049D Set#1

Tetra Tech TO#160115-1 Set#1

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 2:18:25PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.19	1.92250E+00	1.65		
	2	36.40	1.09625E-01	26.47		
	3	46.57	3.45591E-01	8.51		
	4	50.30	-5.03334E-02	- 40.1		
	5	67.77	1.51181E+00	3.16		
M	6	74.89	4.21920E-01	5.05		
m	7	77.17	9.38031E-01	4.92		
m	8	81.16	2.14858E-01	5.46		
m	9	83.88	5.57280E-01	4.98		
m	10	87.34	2.64482E-01	5.26		
m	11	89.94	4.12064E-02	12.93		
	12	94.63	-7.47222E-02	- 44.6		
	13	122.46	3.01112E-02	108.38		
	14	144.15	8.16583E-01	4.93		
	15	154.28	3.87389E-01	11.14		
	17	236.15	-3.77736E-01	- 8.9		
	18	242.15	1.40536E+00	2.63		
M	19	256.36	4.64775E-01	3.53		
m	20	259.00	1.33717E-01	8.82		
M	21	269.63	8.46869E-01	2.26		
m	22	271.40	6.59347E-01	2.65		
	23	283.76	1.95056E-01	11.96		
m	25	300.18	2.77079E-01	4.71		
m	26	302.89	1.42383E-01	7.37		
	27	324.15	1.08000E-01	15.17		
	28	330.12	8.22917E-02	22.42		
	29	338.50	9.25000E-02	15.63		
M	31	402.03	2.75619E-01	4.42		
m	32	405.07	1.99790E-01	5.50		
	33	427.34	1.00583E-01	16.83		
	34	445.01	6.10556E-02	21.75		
	35	480.65	4.98610E-03	257.61		
	36	487.45	2.71667E-02	42.21		
	37	580.48	3.56806E-02	28.13		

Analysis Report for 588049D Set#1

Tetra Tech TO#160115-1 Set#1

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	39	665.75	1.87361E-01	5.42		
	40	703.69	7.46667E-02	12.64	Sum	
	41	720.24	3.97222E-02	20.07		
	42	768.77	5.60444E-01	2.94		
	43	786.22	1.45417E-01	8.10		
	44	806.58	1.23611E-01	7.36		
	45	832.39	5.62500E-02	19.60		
	46	839.49	-5.99999E-03	- 151.7		
	47	934.55	2.86250E-01	4.34		
	48	1070.56	1.37500E-02	45.23		
	50	1155.74	1.30222E-01	8.17		
	51	1208.39	3.47222E-02	19.81		
	52	1238.76	4.70528E-01	2.85		
	53	1281.55	1.08667E-01	7.84		
M	54	1378.31	2.86878E-01	3.44		
m	55	1386.02	5.70473E-02	8.94		
M	56	1402.18	8.19600E-02	7.00		
m	57	1408.72	1.54563E-01	4.89		
	58	1509.88	1.31833E-01	7.97		
	59	1583.92	4.28889E-02	15.13		
	60	1661.94	8.14722E-02	8.26		
	61	1730.42	1.86028E-01	4.24	Sum	
	63	1848.20	1.12056E-01	6.75		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	-1.07E+03	8.41E+03	8.41E+03
+	BI-214	609.31	*	44.80	1.49E+05	1.52E+03	1.52E+03
		1120.29	*	14.80	1.54E+05		4.98E+03
		1764.49	*	15.36	1.48E+05		3.29E+03
+	PB-214	295.21	*	18.50	1.54E+05	2.33E+03	2.79E+03
		351.92	*	35.80	1.64E+05		2.33E+03
+	RA-226	186.10	*	3.50	1.92E+05	1.94E+04	1.94E+04

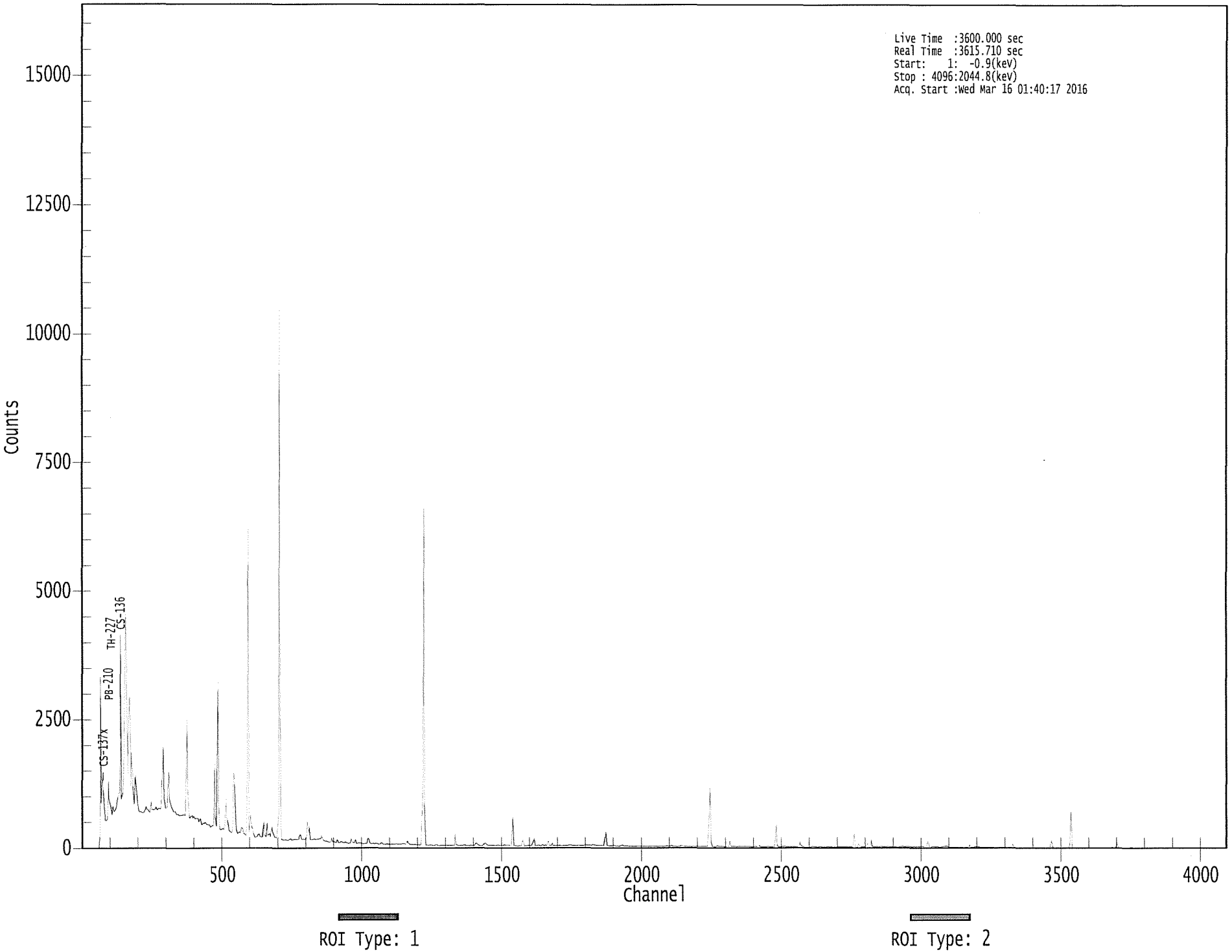
Analysis Report for 588049D Set#1

Tetra Tech TO#160115-1 Set#1

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 588556R Set#1

Tetra Tech TO#160115-1 Set#1

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 588556R Set#1
Sample Description	: Tetra Tech TO#160115-1 Set#1
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/16/2016 4:15:34AM
Acquisition Started	: 3/16/2016 4:15:52AM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3612.4 seconds
Dead Time	: 0.34 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7261

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.964	1.11E+05	2.78E+03	
PB-214	0.997	1.17E+05	5.55E+03	
RA-226	0.994	1.50E+05	9.34E+03	

Analysis Report for 588556R Set#1

Tetra Tech TO#160115-1 Set#1

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 2:17:47PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.22	1.68736E+00	1.73		
	2	36.37	-1.20958E-01	- 24.2		
	3	46.63	4.14549E-01	6.75		
M	4	50.10	-8.58040E-02	- 26.7		
m	5	53.23	-3.52376E-02	- 28.1		
	6	67.78	2.13042E+00	1.93		
M	7	74.90	3.16067E-01	6.19		
m	8	77.19	7.27152E-01	6.04		
m	9	81.15	1.91511E-01	6.47		
m	10	83.87	5.02730E-01	6.08		
m	11	87.33	1.79228E-01	6.50		
m	12	89.90	1.58127E-02	27.71		
M	13	94.76	-3.24308E-01	- 15.0		
m	14	97.90	-2.08043E-03	- 364.8	D-Esc	
	15	144.18	7.34306E-01	5.05		
	16	154.32	4.98681E-01	7.17		
	18	236.11	-8.53334E-02	- 33.1		
	19	242.13	1.14306E+00	2.47		
M	20	256.37	3.85302E-01	3.84		
m	21	259.11	1.23439E-01	8.75		
M	22	269.59	7.33271E-01	2.43		
m	23	271.38	6.28276E-01	2.66		
	24	286.11	-2.42667E+00	- 1.5		
m	26	300.21	2.22535E-01	4.91		
m	27	302.85	1.31690E-01	7.14		
	28	324.01	8.92083E-02	16.00		
	29	330.05	6.00000E-02	25.55		
	30	338.46	8.57639E-02	13.85		
M	32	402.01	2.82955E-01	4.09		
m	33	405.10	1.67145E-01	5.85		
	34	427.27	5.84722E-02	15.54		
	35	445.39	1.47917E-02	90.91		
	36	487.29	1.31944E-02	80.82		
	37	580.33	3.02778E-02	29.79		

Analysis Report for 588556R Set#1

Tetra Tech TO#160115-1 Set#1

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	39	665.84	1.14111E-01	9.00		
	40	768.74	4.25167E-01	3.29		
	41	786.31	1.00111E-01	9.40		
	42	806.53	1.00667E-01	9.56		
	43	832.20	5.61111E-02	13.89		
	44	839.64	6.45833E-03	134.86		
	45	934.54	2.23694E-01	4.91		
	47	1134.34	1.12500E-02	41.96		
	48	1155.76	9.20139E-02	8.84		
	49	1238.70	3.27194E-01	3.45		
	50	1281.70	8.05278E-02	8.47		
M	51	1378.36	2.13795E-01	3.96		
m	52	1385.96	4.49326E-02	9.86		
M	53	1402.20	6.92713E-02	7.46		
m	54	1408.71	1.17779E-01	5.59		
	55	1509.76	1.04208E-01	7.99		
	56	1583.76	2.56111E-02	19.39		
	57	1662.24	3.88333E-02	11.36		
	58	1730.28	1.27958E-01	5.19	Sum	
	60	1848.24	7.38889E-02	8.22		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	1.79E+03	7.21E+03	7.21E+03
+	BI-214	609.31	*	44.80	1.08E+05	1.12E+03	1.12E+03
		1120.29	*	14.80	1.13E+05		3.99E+03
		1764.49	*	15.36	1.13E+05		2.69E+03
+	PB-214	295.21	*	18.50	1.12E+05	1.85E+03	2.37E+03
		351.92	*	35.80	1.24E+05		1.85E+03
+	RA-226	186.10	*	3.50	1.50E+05	1.49E+04	1.49E+04

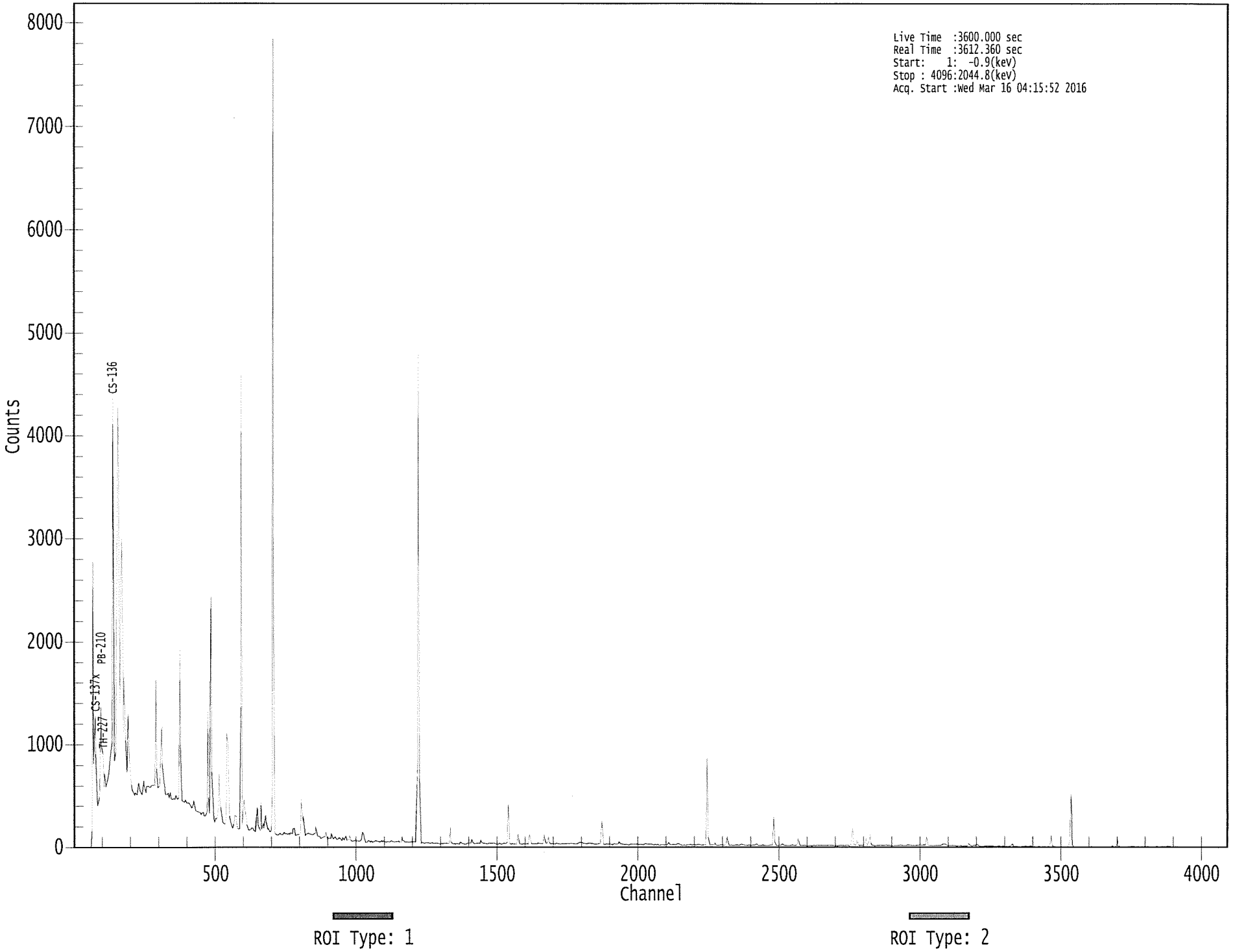
Analysis Report for 588556R Set#1

Tetra Tech TO#160115-1 Set#1

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Analysis Report for 590212 Set#1

Tetra Tech TO#160115-1 Set#1

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 590212 Set#1
Sample Description	: Tetra Tech TO#160115-1 Set#1
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/16/2016 4:16:27AM
Acquisition Started	: 3/16/2016 9:44:22AM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3623.0 seconds
Dead Time	: 0.64 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7259

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/Each)	Wt mean Activity Uncertainty	Comments
BI-214	0.983	2.19E+05	5.28E+03	
PB-214	0.998	2.32E+05	1.09E+04	
RA-226	0.998	2.76E+05	1.66E+04	

Analysis Report for 590212 Set#1

Tetra Tech TO#160115-1 Set#1

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 2:17:16PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	36.46	-7.55138E-02	- 51.9		
	2	46.56	3.46243E-01	9.95		
	3	50.17	1.40972E-02	186.51		
	4	67.71	2.00976E+00	2.76		
M	5	74.94	2.19183E-01	10.85		
m	6	77.13	4.94470E-01	10.72		
M	7	83.89	-7.17478E-01	- 9.0		
m	8	87.43	-2.84035E-01	- 9.5		
	9	94.67	-1.33333E-02	- 300.1		
	10	144.09	1.35633E+00	3.92		
	11	154.33	8.11708E-01	5.54		
	13	236.02	-5.60250E-01	- 7.3		
	14	242.05	2.07300E+00	2.17		
	15	256.21	1.15453E+00	3.53		
M	16	269.61	1.31309E+00	2.16		
m	17	271.40	1.06457E+00	2.49		
m	19	300.17	3.99886E-01	4.05		
	20	324.00	3.03611E-02	85.29		
M	21	329.94	1.28777E-01	17.84		
m	22	334.43	2.59206E-02	19.94		
m	23	338.55	9.47050E-02	17.91		
M	25	402.00	4.62054E-01	3.46		
m	26	405.15	3.27877E-01	4.41		
	27	427.16	1.36306E-01	14.41		
	28	580.32	8.93750E-02	17.64		
	30	665.83	2.56167E-01	5.43		
	31	768.65	8.79167E-01	2.32		
	32	786.11	1.53819E-01	8.16		
	33	806.43	2.14792E-01	6.54		
	34	832.19	7.32361E-02	16.50		
	35	839.38	3.54167E-03	359.05		
	36	934.46	4.46806E-01	4.08		
	37	1052.16	3.92778E-02	21.45		
	38	1070.67	3.11111E-02	26.49		

Analysis Report for 590212 Set#1

Tetra Tech TO#160115-1 Set#1

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	40	1155.65	2.07500E-01	6.29		
	41	1208.11	3.51667E-02	20.06		
	42	1238.52	6.61597E-01	2.45		
	43	1281.39	1.70347E-01	5.84		
	44	1378.09	3.40861E-01	4.15		
	45	1386.11	-2.90833E-01	- 4.9		
M	46	1401.98	1.34792E-01	5.56		
m	47	1408.48	2.35443E-01	3.97		
	48	1509.69	1.79667E-01	6.05		
	49	1583.50	5.92500E-02	14.57		
	50	1595.01	7.72222E-03	86.80		
	51	1661.94	9.50556E-02	7.30		
	52	1729.99	2.48917E-01	3.76	Sum	
	54	1838.73	-7.56389E-02	- 9.3		
	55	1847.78	1.44681E-01	5.71		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

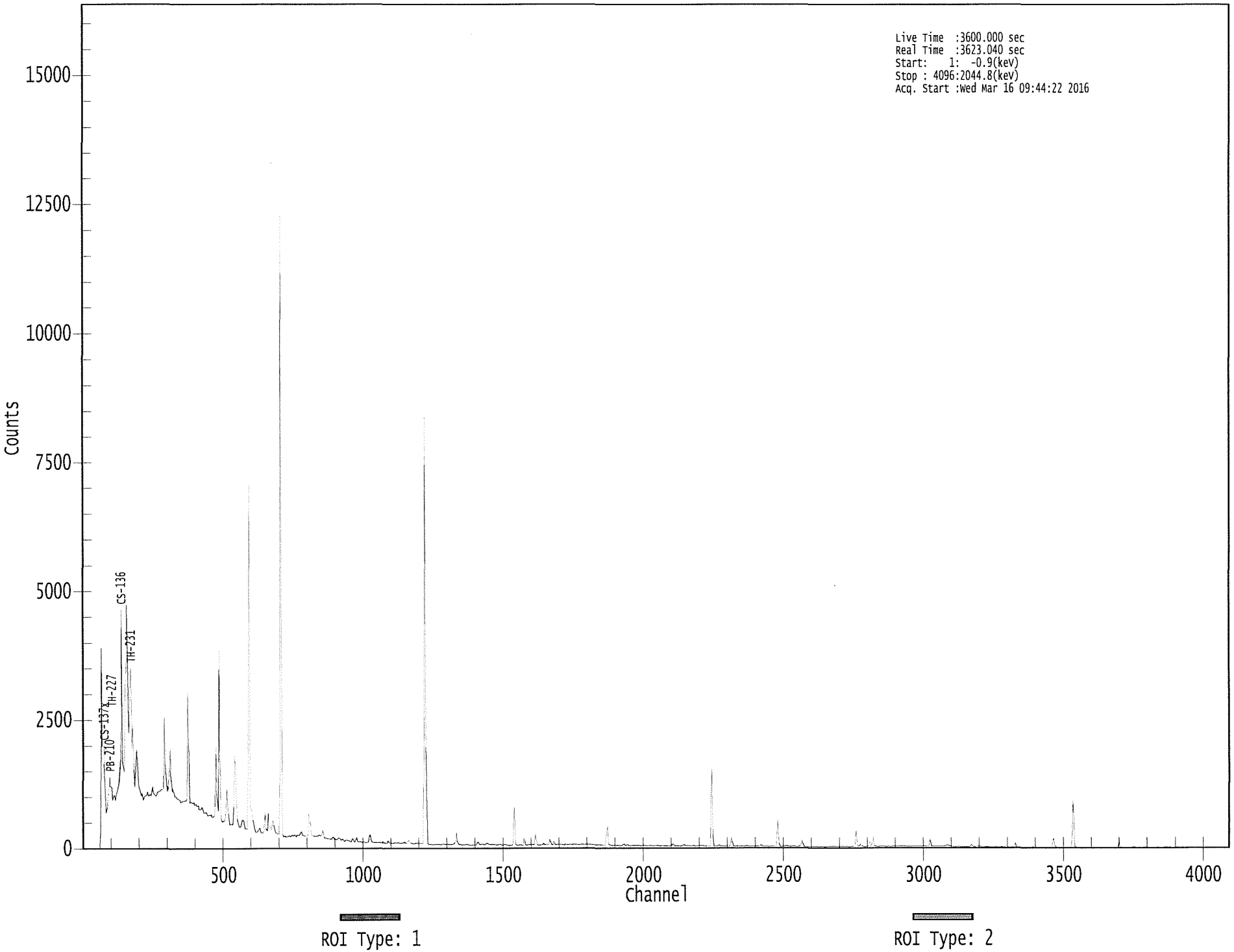
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	4.86E+03	1.06E+04	1.06E+04
+	BI-214	609.31	*	44.80	2.20E+05	1.87E+03	1.87E+03
		1120.29	*	14.80	2.23E+05		6.86E+03
		1764.49	*	15.36	2.16E+05		3.88E+03
+	PB-214	295.21	*	18.50	2.25E+05	2.78E+03	3.99E+03
		351.92	*	35.80	2.41E+05		2.78E+03
+	RA-226	186.10	*	3.50	2.76E+05	2.22E+04	2.22E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 590213 Set#1

Tetra Tech TO#160115-1 Set#1

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 590213 Set#1
Sample Description	: Tetra Tech TO#160115-1 Set#1
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/16/2016 4:17:01AM
Acquisition Started	: 3/16/2016 10:46:12AM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3611.9 seconds
Dead Time	: 0.33 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7257

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.977	1.07E+05	2.70E+03	
PB-214	0.998	1.15E+05	5.45E+03	
RA-226	0.994	1.38E+05	8.80E+03	

Analysis Report for 590213 Set#1

Tetra Tech TO#160115-1 Set#1

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 2:16:47PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.17	1.50264E+00	1.86		
	2	36.47	-8.76389E-02	- 32.3		
	3	46.62	3.29341E-01	8.09		
	4	50.16	-4.07917E-02	- 49.1		
	5	67.77	1.79461E+00	2.34		
M	6	74.90	3.00374E-01	6.07		
m	7	77.17	7.06231E-01	5.94		
m	8	81.16	1.72502E-01	6.36		
m	9	83.85	4.53036E-01	5.98		
m	10	87.33	1.95786E-01	6.25		
m	11	89.84	2.53760E-02	16.10		
	12	94.67	-2.78569E-01	- 16.2		
	13	144.11	6.80278E-01	4.21		
	14	154.30	5.23056E-01	6.96		
	16	210.95	4.08889E-02	63.31		
	17	236.09	-3.43444E-01	- 8.8		
	18	242.11	1.04917E+00	3.02		
	19	256.30	5.94694E-01	4.82		
M	20	269.58	6.85215E-01	2.46		
m	21	271.38	5.28754E-01	2.88		
	22	286.22	-3.15778E+00	- 1.2		
m	24	300.14	2.00736E-01	5.38		
m	25	302.80	1.06423E-01	8.43		
	26	323.92	6.94584E-02	20.52		
	27	329.95	7.89444E-02	21.72		
	28	338.41	7.27917E-02	18.32		
M	30	402.00	2.30656E-01	4.65		
m	31	405.08	1.61298E-01	5.93		
	32	427.04	9.67778E-02	16.28		
	33	445.17	3.13472E-02	26.04		
	34	580.34	4.01806E-02	27.73		
	36	665.73	1.30111E-01	6.83		
	37	703.33	4.43750E-02	17.17	Sum	
	38	720.18	3.86667E-02	20.90		

Analysis Report for 590213 Set#1

Tetra Tech TO#160115-1 Set#1

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	39	768.70	3.85583E-01	3.28		
	40	786.33	8.86944E-02	9.84		
	41	806.52	1.10833E-01	7.84		
	42	832.27	2.56250E-02	35.89		
	43	839.47	4.72222E-03	163.80		
	44	934.49	2.08444E-01	5.13		
	46	1155.63	9.47222E-02	7.49		
	47	1238.61	3.24750E-01	3.48		
	48	1281.59	8.00556E-02	9.13		
M	49	1378.21	2.06770E-01	4.07		
m	50	1385.90	4.18642E-02	10.45		
M	51	1402.14	7.87151E-02	6.94		
m	52	1408.44	1.21001E-01	5.48		
	53	1509.68	9.24444E-02	8.46		
M	54	1539.23	1.94601E-02	18.08		
m	55	1544.07	1.73017E-02	18.54		
	56	1583.85	3.57639E-02	14.92		
	57	1662.05	4.81944E-02	10.73		
	58	1730.04	1.13958E-01	5.45	Sum	
	60	1848.06	7.77083E-02	7.27		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	1.88E+03	7.10E+03	7.10E+03
+	BI-214	609.31	*	44.80	1.05E+05	1.40E+03	1.40E+03
		1120.29	*	14.80	1.13E+05		4.69E+03
		1764.49	*	15.36	1.04E+05		2.84E+03
+	PB-214	295.21	*	18.50	1.11E+05	1.96E+03	2.48E+03
		351.92	*	35.80	1.21E+05		1.96E+03
+	RA-226	186.10	*	3.50	1.38E+05	1.58E+04	1.58E+04

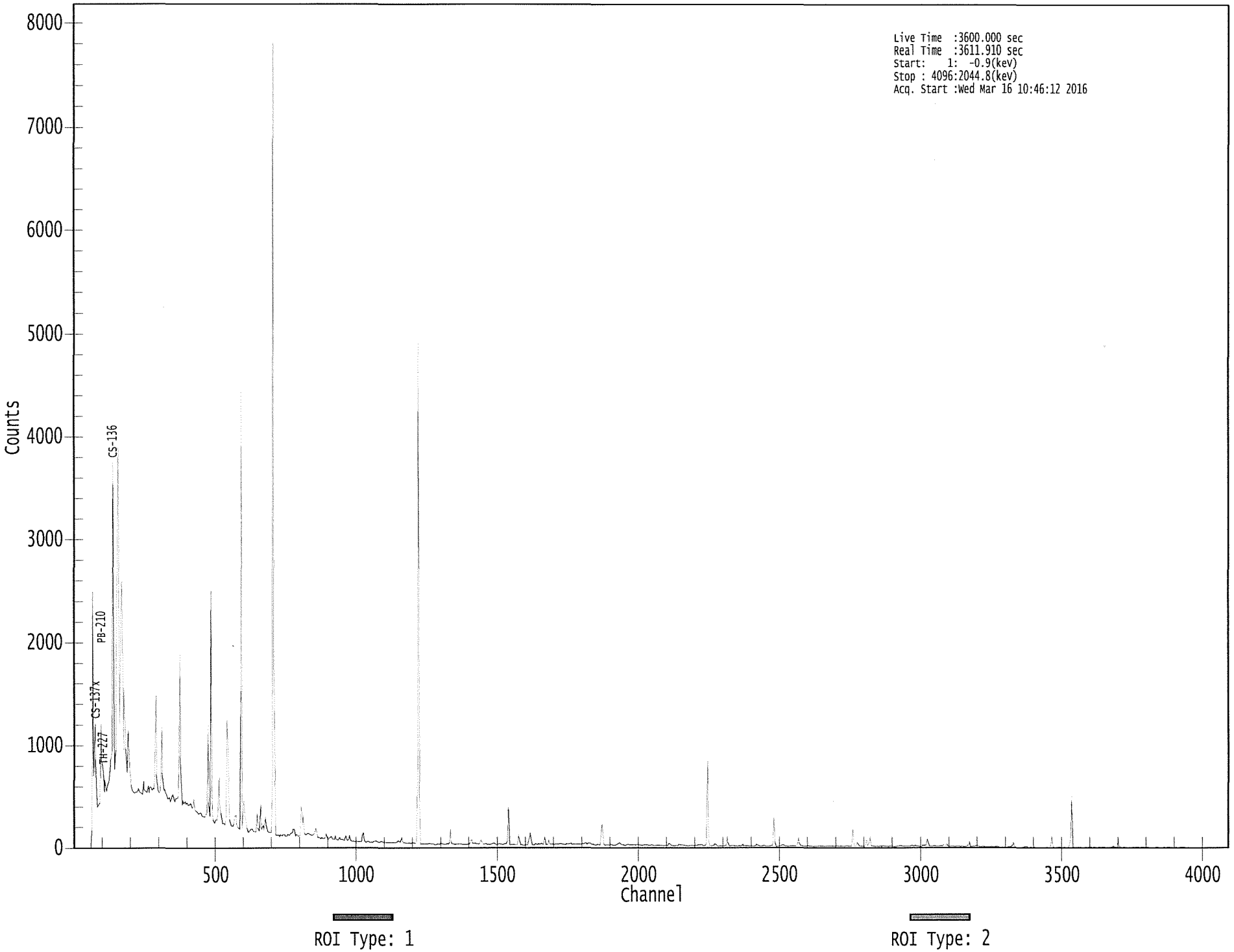
Analysis Report for 590213 Set#1

Tetra Tech TO#160115-1 Set#1

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 590214 Set#1

Tetra Tech TO#160115-1 Set#1

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 590214 Set#1
Sample Description	: Tetra Tech TO#160115-1 Set#1
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/16/2016 4:17:35AM
Acquisition Started	: 3/16/2016 11:53:24AM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3602.5 seconds
Dead Time	: 0.07 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7255

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.974	9.87E+03	3.70E+02	
PB-214	0.998	1.05E+04	5.42E+02	
RA-226	0.997	4.78E+04	3.39E+03	

Analysis Report for 590214 Set#1

Tetra Tech TO#160115-1 Set#1

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 2:16:13PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	46.46	2.55906E-02	57.11		
	2	50.20	7.88333E-02	13.92		
	3	63.34	2.29001E-01	9.25		
	4	67.80	8.27778E-02	23.89		
M	5	74.84	-6.40007E-02	- 18.3		
m	6	77.27	-1.84277E-01	- 12.2		
M	7	81.15	1.79781E-01	6.40		
m	8	83.90	4.19293E-01	3.45		
M	9	92.70	4.62184E-01	3.16		
m	10	94.64	1.45159E-01	6.59		
	11	144.00	1.49444E-01	9.08		
	12	154.30	1.47847E-01	10.04		
	14	236.12	8.55972E-02	15.74		
	15	242.13	3.50000E-02	27.77		
	16	256.28	1.36264E-01	8.67		
M	17	269.59	1.65518E-01	4.80		
m	18	271.35	1.37248E-01	5.34		
m	20	300.13	6.21168E-02	8.53		
	21	323.99	2.10556E-02	31.12		
	22	330.09	2.36111E-02	29.36		
	23	338.54	1.87222E-02	25.55		
M	25	401.99	5.37964E-02	8.55		
m	26	405.13	3.97782E-02	10.24		
	28	768.78	5.66667E-02	9.22		
	29	934.65	1.59028E-02	19.89		
	30	1001.67	1.60278E-02	19.60		
	32	1238.55	3.36111E-02	10.72		
	33	1378.21	1.84444E-02	15.97		

Analysis Report for 590214 Set#1

Tetra Tech TO#160115-1 Set#1

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

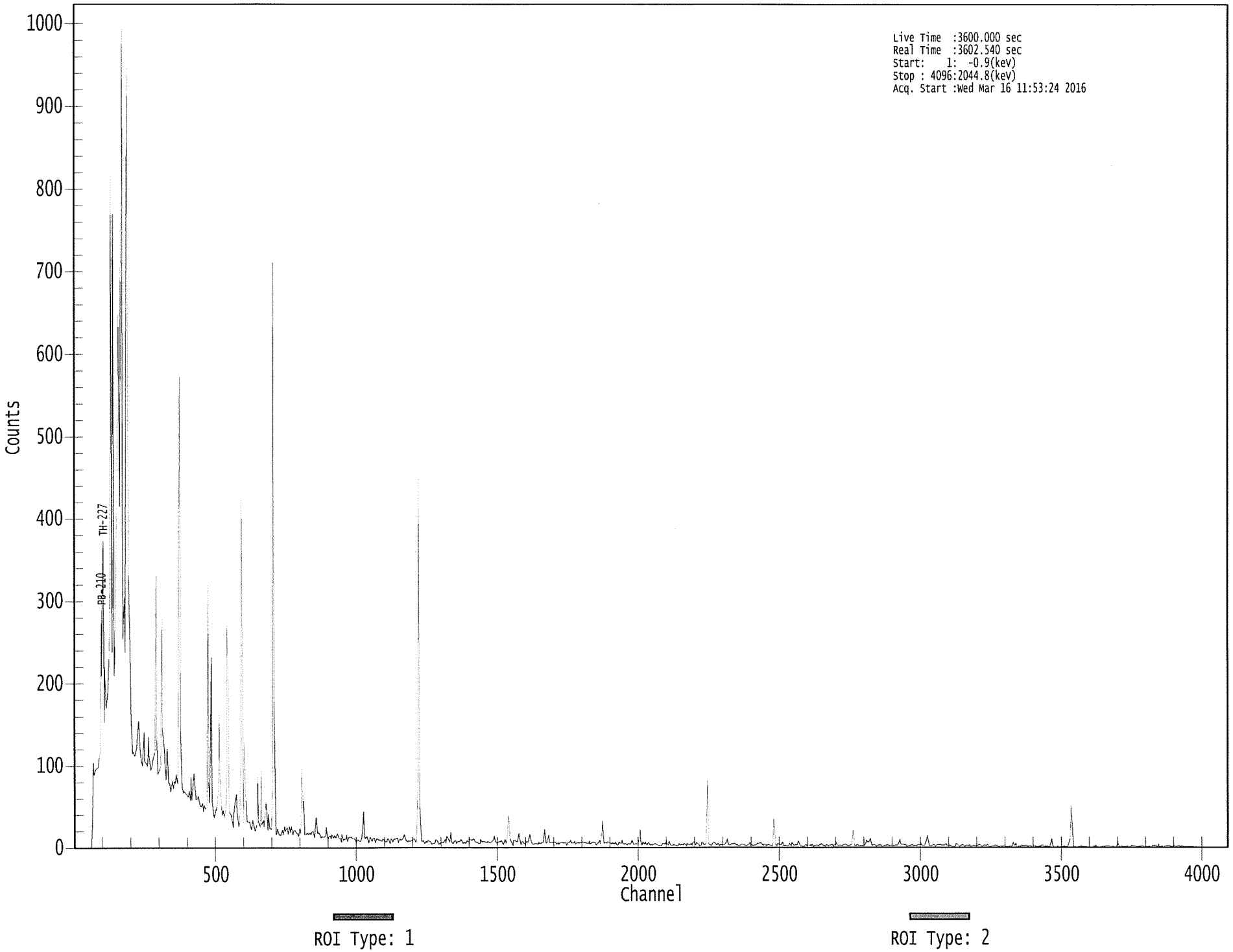
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	2.32E+03	3.45E+03	3.45E+03
+	BI-214	609.31	*	44.80	9.71E+03	4.14E+02	4.14E+02
		1120.29	*	14.80	9.77E+03		1.40E+03
		1764.49	*	15.36	1.03E+04		7.93E+02
+	PB-214	295.21	*	18.50	9.63E+03	6.23E+02	9.62E+02
		351.92	*	35.80	1.18E+04		6.23E+02
+	RA-226	186.10	*	3.50	4.78E+04	7.47E+03	7.47E+03

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 591000 Set#1

Tetra Tech TO#160115-1 Set#1

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 591000 Set#1
Sample Description	: Tetra Tech TO#160115-1 Set#1
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/16/2016 4:18:12AM
Acquisition Started	: 3/16/2016 12:58:58PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3606.6 seconds
Dead Time	: 0.18 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7253

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.972	5.80E+04	1.55E+03	
PB-214	0.997	6.10E+04	2.90E+03	
RA-226	0.995	8.19E+04	5.61E+03	

Analysis Report for 591000 Set#1

Tetra Tech TO#160115-1 Set#1

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 2:15:34PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.22	6.47778E-01	2.92		
	2	36.43	-4.99722E-02	- 39.9		
	3	46.57	4.23354E-01	5.17		
M	4	50.26	-5.03994E-02	- 28.3		
m	5	53.34	-9.11006E-02	- 20.6		
	6	67.75	1.07431E+00	2.92		
M	7	74.91	2.02048E-01	7.11		
m	8	77.16	4.40063E-01	6.92		
M	9	83.82	-5.60401E-01	- 6.9		
m	10	87.32	-3.21057E-01	- 8.8		
	11	94.67	7.97221E-03	257.00		
	12	143.99	3.17500E-01	6.52		
	13	154.33	1.89806E-01	12.55		
	15	236.09	-1.36528E-01	- 13.0		
	16	242.13	6.71389E-01	3.45		
	17	256.32	2.46222E-01	7.98		
M	18	269.55	2.64606E-01	4.12		
m	19	271.35	2.15097E-01	4.70		
m	21	300.20	7.10362E-02	10.23		
	22	324.09	3.20417E-02	31.43		
	23	330.11	2.34722E-02	48.73		
	24	338.39	2.24167E-02	36.43		
M	26	401.99	8.97123E-02	8.27		
m	27	405.07	7.38083E-02	9.46		
	29	665.77	6.28889E-02	10.70		
	30	768.78	2.20278E-01	4.77		
	31	786.47	5.61806E-02	12.03		
	32	806.62	4.62500E-02	14.64		
	33	832.52	4.94444E-03	118.13		
	34	839.36	1.67222E-02	36.05		
	35	934.54	1.09056E-01	7.17		
	37	1155.72	4.78889E-02	12.29		
	38	1238.75	1.77917E-01	4.56		
	39	1281.52	5.11944E-02	11.24		

011129

Analysis Report for 591000 Set#1

Tetra Tech TO#160115-1 Set#1

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M	40	1378.29	1.09792E-01	5.51		
m	41	1385.92	2.06302E-02	14.89		
M	42	1401.93	3.52893E-02	10.58		
m	43	1408.57	5.96110E-02	7.85		
	44	1509.81	4.25139E-02	12.21		
	45	1583.84	1.54583E-02	21.14		
	46	1730.25	6.15278E-02	7.72	Sum	
	48	1847.91	3.84444E-02	10.98		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

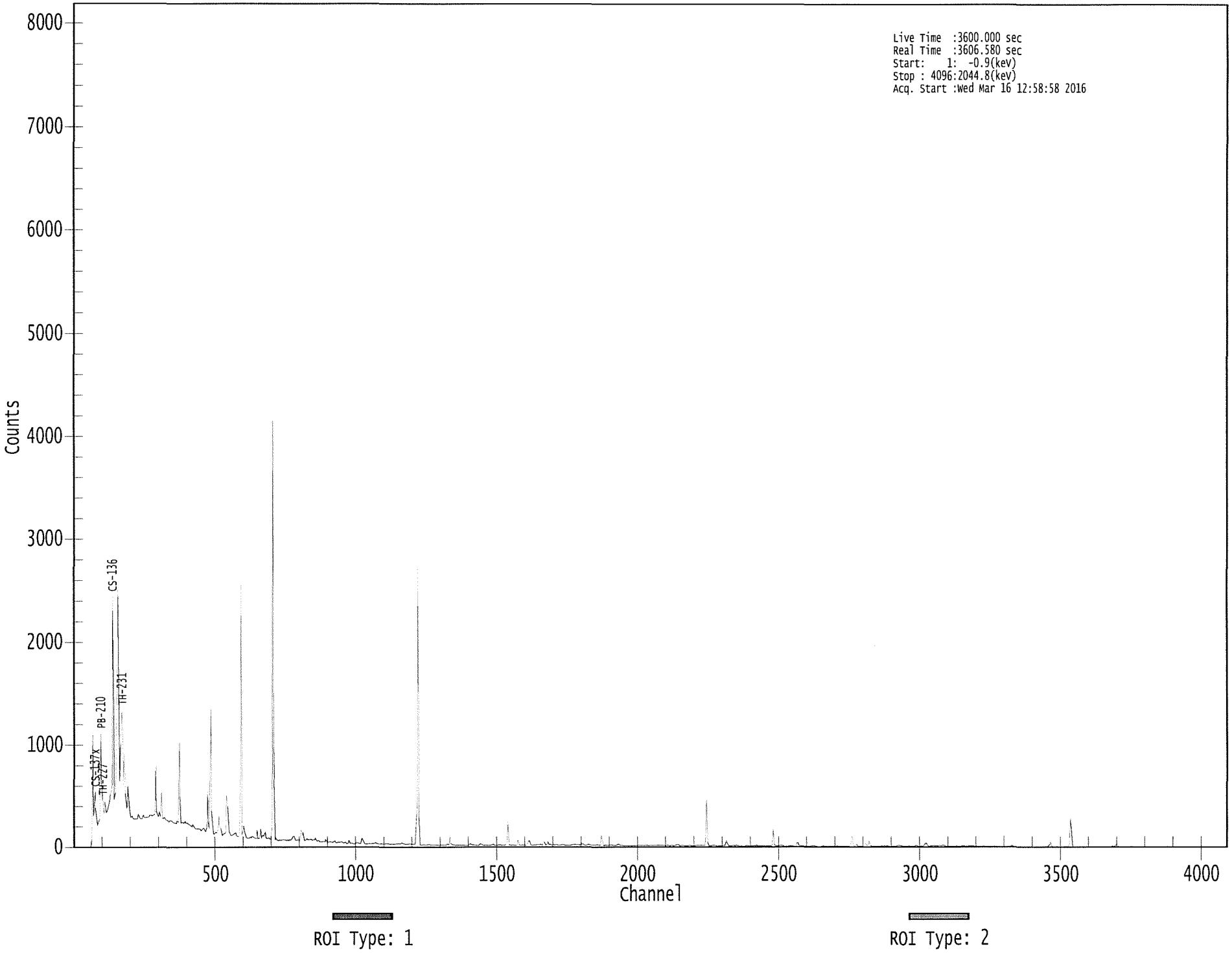
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	2.81E+03	5.74E+03	5.74E+03
+	BI-214	609.31	*	44.80	5.71E+04	8.25E+02	8.25E+02
		1120.29	*	14.80	5.83E+04		2.60E+03
		1764.49	*	15.36	5.88E+04		1.91E+03
+	PB-214	295.21	*	18.50	5.95E+04	1.21E+03	1.80E+03
		351.92	*	35.80	6.27E+04		1.21E+03
+	RA-226	186.10	*	3.50	8.19E+04	1.26E+04	1.26E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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011130

011131

Southwest Research Institute, Division 1, Radiochemistry

Gamma Spectroscopy Summary Sheet (1 sig)

Client: Tetra Tech (Set#3)
Task Order: 160115-1
Prep Page: N/A
Prep Date: N/A
JR 4/4/16

RSpruce 4/19/16

Project #: 21431.01.001
SRR: 56591, 56639, 56785, 56876
TPU sig factor: 1
Units: g

Notes:

Sample ID 588049 | Sample # 7237 | Sample Size 1 Each | Date Analyzed 3/16/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	51.710	100.0%	1	4.20E+03	1.01E+02	2.86E+01	2.43E+01		
^{214}Pb	51.710	100.0%	1	4.47E+03	2.10E+02	4.75E+01	2.36E+01		
^{226}Ra	51.710	100.0%	1	5.08E+03	3.09E+02	4.64E+02	1.16E+02		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 588049D | Sample # 7234 | Sample Size 1 Each | Date Analyzed 3/16/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RPDs	DER	
^{214}Bi	51.585	100.0%	1	4.47E+03	1.07E+02	3.92E+01	2.58E+01		6.3	1.9	Pass
^{214}Pb	51.585	100.0%	1	4.65E+03	2.19E+02	4.14E+01	2.34E+01		4.1	0.6	Pass
^{226}Ra	51.585	100.0%	1	5.39E+03	3.32E+02	5.51E+02	1.33E+02		6.0	0.7	Pass

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.
Duplicate Evaluation = (Sample-Duplicate) / sqrt ((TPUsample^2) + (TPUdup^2)) # 3

Sample ID 588556 | Sample # 7229 | Sample Size 1 Each | Date Analyzed 3/17/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	53.176	100.00%	1	3.10E+03	7.55E+01	3.04E+01	2.09E+01		
^{214}Pb	53.176	100.00%	1	3.30E+03	1.56E+02	3.57E+01	1.96E+01		
^{226}Ra	53.176	100.00%	1	4.03E+03	2.49E+02	4.18E+02	1.04E+02		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 590212 | Sample # 7226 | Sample Size 1 Each | Date Analyzed 3/17/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	50.602	100.00%	1	5.19E+03	1.24E+02	4.01E+01	2.76E+01		
^{214}Pb	50.602	100.00%	1	5.41E+03	2.54E+02	5.66E+01	2.61E+01		
^{226}Ra	50.602	100.00%	1	6.30E+03	3.84E+02	6.02E+02	1.46E+02		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Note: Ra226 is not reported from this spreadsheet RS 4/20/16

Southwest Research Institute, Division 1, Radiochemistry

011132

Gamma Spectroscopy Summary Sheet (1 sig)

Client: Tetra Tech (Set#3)
Task Order: 160115-1
Prep Page: N/A
Prep Date: N/A

Project #: 21431.01.001
SRR: 56591, 56639, 56785, 56876
TPU sig factor: 1
Units: g

Notes: _____

Sample ID 590213 | Sample # 7224 | Sample Size 1 Each | Date Analyzed 3/17/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	51.321	100.00%	1	2.93E+03	7.20E+01	2.47E+01	2.04E+01		
^{214}Pb	51.321	100.00%	1	3.10E+03	1.46E+02	3.55E+01	1.92E+01		
^{226}Ra	51.321	100.00%	1	3.47E+03	2.16E+02	3.59E+02	9.15E+01		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 590214 | Sample # 7222 | Sample Size 1 Each | Date Analyzed 3/17/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	51.653	100.00%	1	2.70E+02	9.34E+00	7.58E+00	6.12E+00		
^{214}Pb	51.653	100.00%	1	3.23E+02	1.60E+01	1.23E+01	6.05E+00		
^{226}Ra	51.653	100.00%	1	1.12E+03	7.77E+01	1.66E+02	4.52E+01		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 591000 | Sample # 7220 | Sample Size 1 Each | Date Analyzed 3/17/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	47.358	100.00%	1	2.06E+03	5.22E+01	2.05E+01	1.77E+01		
^{214}Pb	47.358	100.00%	1	2.20E+03	1.04E+02	3.62E+01	1.72E+01		
^{226}Ra	47.358	100.00%	1	2.75E+03	1.84E+02	4.08E+02	9.86E+01		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

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Analysis Report for 588049 Set#3

Tetra Tech TO#160115-1 Set#3

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 588049 Set#3
Sample Description	: Tetra Tech TO#160115-1 Set#3
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/16/2016 9:44:14PM
Acquisition Started	: 3/16/2016 9:44:57PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3621.9 seconds
Dead Time	: 0.60 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7237

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.959	2.17E+05	5.21E+03	
PB-214	0.996	2.31E+05	1.09E+04	
RA-226	0.993	2.62E+05	1.60E+04	

Analysis Report for 588049 Set#3

Tetra Tech TO#160115-1 Set#3

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 2:10:17PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.23	2.59139E+00	1.43		
	2	36.42	-8.11111E-02	- 44.5		
	3	46.66	3.69257E-01	9.21		
	4	50.28	-8.73889E-02	- 31.9		
	5	67.77	1.63704E+00	3.31		
M	6	74.90	7.74410E-01	3.45		
m	7	77.18	1.55097E+00	3.36		
m	8	81.17	3.35202E-01	3.91		
m	9	83.88	9.11913E-01	3.42		
m	10	87.37	4.93475E-01	3.60		
m	11	89.90	6.67786E-02	10.38		
	12	94.79	-1.42639E-01	- 27.5		
	13	144.09	1.05896E+00	4.66		
	14	154.29	6.46444E-01	5.11		
	16	210.72	9.68056E-02	29.56		
	17	236.16	-1.55972E-01	- 20.8		
	18	242.18	2.11767E+00	2.08		
M	19	254.07	1.57983E-01	8.83		
m	20	256.38	5.95085E-01	3.19		
m	21	259.14	1.92328E-01	7.37		
M	22	269.63	1.11634E+00	2.04		
m	23	271.42	9.23624E-01	2.25		
m	24	274.84	1.09839E-01	11.42		
	25	283.74	-1.89139E+00	- 1.9		
m	27	300.14	3.06700E-01	4.46		
m	28	302.91	2.00864E-01	6.06		
	29	324.06	8.45000E-02	25.56		
	30	330.06	9.50000E-02	21.74		
	31	338.48	1.00694E-01	19.12		
	33	389.07	2.07111E-01	11.89		
M	34	402.00	4.24384E-01	3.54		
m	35	405.23	2.68079E-01	4.83		
	36	427.34	1.31833E-01	16.94		
	37	445.42	6.36111E-02	28.75		

Analysis Report for 588049 Set#3

Tetra Tech TO#160115-1 Set#3

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	38	455.13	4.11111E-02	45.45		
	39	480.67	1.04583E-02	132.54		
	40	487.41	2.48333E-02	70.19		
	41	580.37	5.92361E-02	15.58		
	43	665.82	2.57222E-01	5.67		
	44	720.34	7.45556E-02	15.44		
	45	768.80	8.39222E-01	2.31		
	46	786.31	1.65556E-01	6.40		
	47	806.71	1.84069E-01	7.50		
	48	832.49	5.17500E-02	24.27		
	49	839.48	-4.04861E-02	- 33.7		
	50	934.55	4.52653E-01	3.49		
	51	964.53	4.32222E-02	21.64		
	52	1070.38	2.98611E-02	23.90		
	54	1155.78	1.90486E-01	5.21		
	55	1208.57	5.37500E-02	15.64		
	56	1238.80	6.35569E-01	2.64		
	57	1281.60	1.52000E-01	6.49		
M	58	1378.41	4.27570E-01	2.76		
m	59	1385.97	9.04029E-02	7.04		
M	60	1402.21	1.35936E-01	5.53		
m	61	1408.68	2.30957E-01	3.97		
	62	1509.86	2.11167E-01	5.45		
M	63	1539.38	4.02237E-02	13.03		
m	64	1544.03	3.22145E-02	14.78		
	65	1583.96	7.09444E-02	11.01		
	66	1661.98	8.18889E-02	8.23		
	67	1684.68	2.24722E-02	19.39		
	68	1730.38	2.39889E-01	3.82	Sum	
	70	1839.01	-2.01528E-02	- 29.7		
	71	1848.17	1.37417E-01	5.89		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

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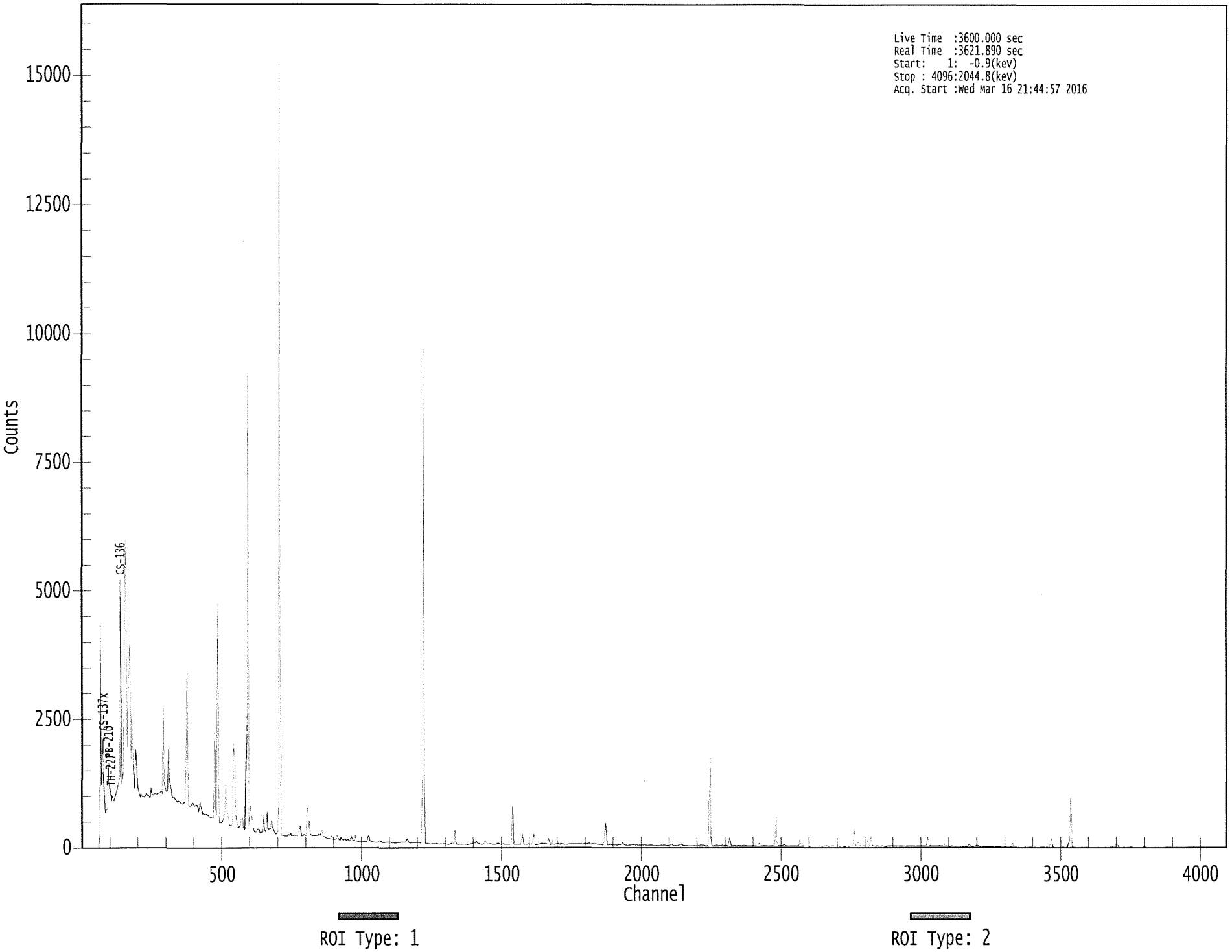
Analysis Report for 588049 Set#3

Tetra Tech TO#160115-1 Set#3

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	-2.70E+02	9.73E+03	9.73E+03
+	BI-214	609.31	*	44.80	2.15E+05	1.48E+03	1.48E+03
		1120.29	*	14.80	2.20E+05		5.38E+03
		1764.49	*	15.36	2.16E+05		3.67E+03
+	PB-214	295.21	*	18.50	2.26E+05	2.46E+03	3.41E+03
		351.92	*	35.80	2.38E+05		2.46E+03
+	RA-226	186.10	*	3.50	2.62E+05	2.40E+04	2.40E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 588049D Set#3

Tetra Tech TO#160115-1 Set#3

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 588049D Set#3
Sample Description	: Tetra Tech TO#160115-1 Set#3
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/16/2016 9:47:02PM
Acquisition Started	: 3/16/2016 10:46:58PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3622.9 seconds
Dead Time	: 0.63 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7234

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.963	2.31E+05	5.53E+03	
PB-214	0.996	2.40E+05	1.13E+04	
RA-226	0.994	2.78E+05	1.71E+04	

Analysis Report for 588049D Set#3

Tetra Tech TO#160115-1 Set#3

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 2:04:32PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.20	2.63967E+00	1.38		
	2	36.41	2.48736E-01	14.02		
	3	46.55	3.85438E-01	8.92		
	4	50.24	-6.22778E-02	- 37.9		
	5	67.76	2.22378E+00	2.33		
M	6	74.89	7.19028E-01	3.75		
m	7	77.17	1.45920E+00	3.67		
m	8	81.13	3.29777E-01	4.13		
m	9	83.90	8.56824E-01	3.72		
m	10	87.37	4.65211E-01	3.89		
m	11	89.91	5.19337E-02	12.42		
	12	94.75	-1.60833E-01	- 24.7		
	13	122.40	4.37500E-02	79.59		
	14	144.12	1.15999E+00	3.28		
	15	154.29	7.76403E-01	5.24		
	17	210.96	3.30556E-02	99.40		
	18	236.16	-5.43611E-01	- 7.2		
	19	242.14	2.56544E+00	1.51		
M	20	254.04	1.77389E-01	8.14		
m	21	256.39	6.84136E-01	2.90		
m	22	259.08	2.20449E-01	6.67		
M	23	269.64	1.21314E+00	1.90		
m	24	271.38	9.33236E-01	2.25		
	25	286.32	-2.77390E+00	- 1.7		
m	27	300.19	4.05102E-01	3.71		
m	28	302.89	2.13924E-01	6.03		
	29	324.05	1.47431E-01	13.53		
	30	330.08	8.15556E-02	27.47		
	31	338.38	1.40556E-01	14.13		
M	33	386.95	8.85477E-02	11.41		
m	34	389.12	1.09310E-01	9.76		
M	35	402.08	4.36524E-01	3.46		
m	36	405.14	3.23483E-01	4.23		
	37	427.39	1.87333E-01	10.30		

Analysis Report for 588049D Set#3

Tetra Tech TO#160115-1 Set#3

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	38	445.15	7.15278E-02	20.37		
	39	454.89	3.68889E-02	43.09		
	40	480.78	-1.38889E-02	- 114.0	Sum	
	41	487.25	5.77361E-02	24.24		
	42	511.13	2.69632E-01	8.13		
	43	580.44	5.79722E-02	29.11		
	45	665.80	2.93167E-01	4.78		
	46	703.56	8.22778E-02	13.56	Sum	
	47	720.19	7.63889E-02	16.56		
	48	768.79	8.61000E-01	2.31		
	49	786.35	1.90222E-01	6.11		
	50	806.65	1.93389E-01	7.23		
	51	821.78	1.81667E-02	42.21		
	52	832.48	6.75000E-02	17.07		
	53	839.30	7.02779E-03	177.90		
	54	934.60	4.53542E-01	4.03		
	55	1052.45	3.53611E-02	25.54		
	57	1155.74	1.95597E-01	6.30		
	58	1208.36	4.30556E-02	23.70		
	59	1238.73	6.75917E-01	2.38		
	60	1281.60	1.72500E-01	6.56		
M	61	1378.33	4.58744E-01	2.67		
m	62	1385.93	9.57265E-02	6.71		
M	63	1402.27	1.25152E-01	5.75		
m	64	1408.62	2.43693E-01	3.85		
	65	1509.85	2.24528E-01	4.81		
M	66	1539.46	4.45522E-02	11.90		
m	67	1543.89	3.29864E-02	14.42		
	68	1583.79	6.33333E-02	12.77		
	69	1661.86	1.01722E-01	7.84		
	70	1730.26	2.54722E-01	3.71	Sum	
	72	1839.28	-2.09722E-02	- 27.1		
	73	1848.09	1.41750E-01	5.97		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

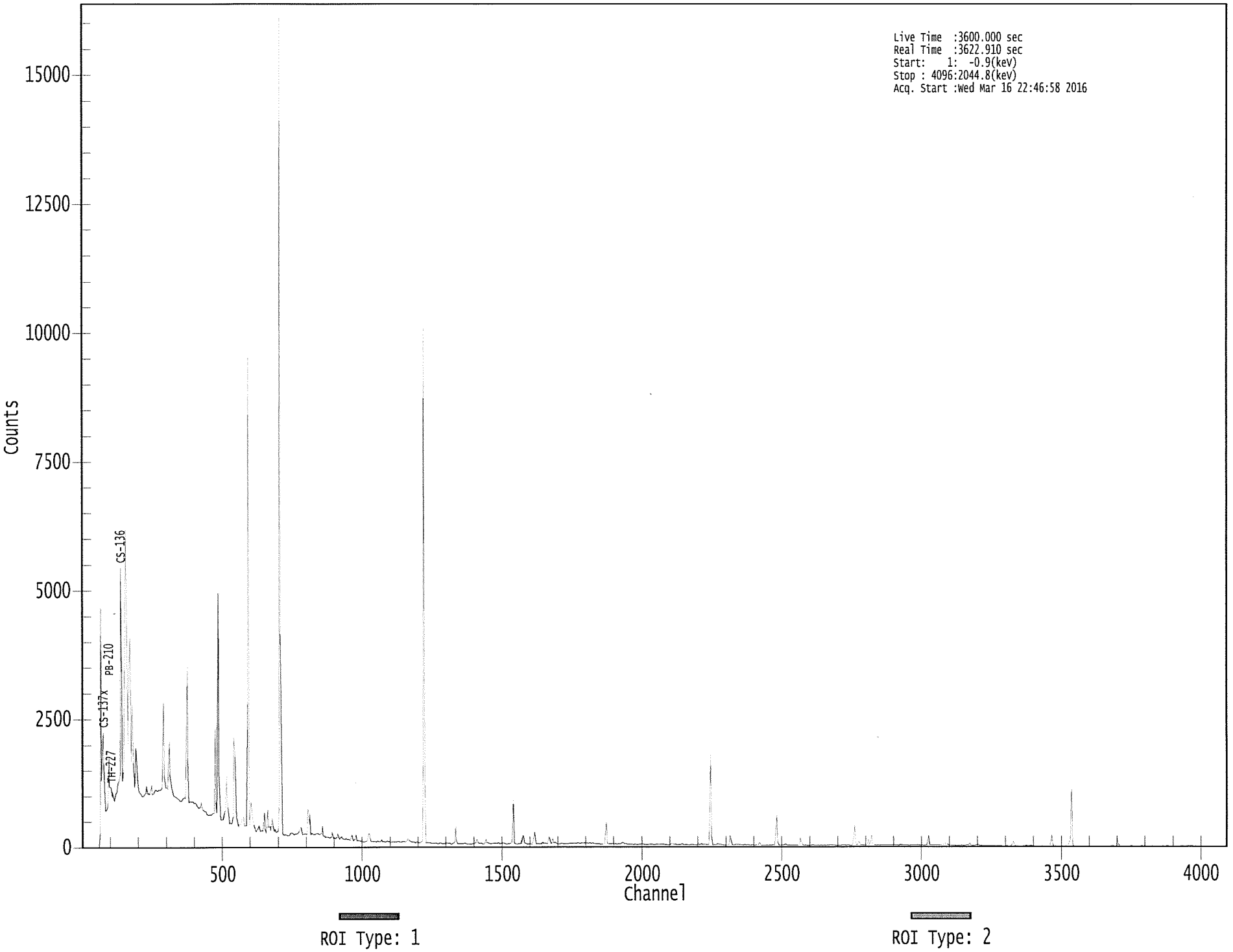
Analysis Report for 588049D Set#3

Tetra Tech TO#160115-1 Set#3

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	2.05E+03	1.01E+04	1.01E+04
+	BI-214	609.31	*	44.80	2.27E+05	2.02E+03	2.02E+03
		1120.29	*	14.80	2.29E+05		5.45E+03
		1764.49	*	15.36	2.35E+05		4.21E+03
+	PB-214	295.21	*	18.50	2.32E+05	2.14E+03	3.34E+03
		351.92	*	35.80	2.49E+05		2.14E+03
+	RA-226	186.10	*	3.50	2.78E+05	2.84E+04	2.84E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 588556 Set#3

Tetra Tech TO#160115-1 Set#3

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 588556 Set#3
Sample Description	: Tetra Tech TO#160115-1 Set#3
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/16/2016 9:48:19PM
Acquisition Started	: 3/17/2016 1:18:50AM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3617.5 seconds
Dead Time	: 0.48 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7229

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.958	1.65E+05	4.01E+03	
PB-214	0.996	1.76E+05	8.27E+03	
RA-226	0.994	2.14E+05	1.33E+04	

Analysis Report for 588556 Set#3

Tetra Tech TO#160115-1 Set#3

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 2:01:34PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.19	2.23681E+00	1.52		
	2	36.40	1.93056E-02	168.99		
	3	46.62	3.60813E-01	9.33		
	4	50.16	-8.61667E-02	- 30.6		
	5	67.76	1.89431E+00	2.49		
M	6	74.90	6.15502E-01	3.83		
m	7	77.17	1.37910E+00	3.71		
m	8	81.13	3.42833E-01	4.14		
m	9	83.88	8.35905E-01	3.76		
m	10	87.38	3.69799E-01	4.06		
m	11	89.83	7.22507E-02	9.29		
M	12	94.79	-5.82908E-01	- 9.4		
m	13	97.88	-1.49673E-02	- 76.0		
	14	122.34	1.32221E-02	257.00		
	15	144.14	9.26653E-01	3.96		
	16	154.33	5.52403E-01	7.04		
	18	236.15	-2.66389E-01	- 12.7		
	19	242.13	1.47597E+00	2.61		
M	20	256.35	5.19361E-01	3.34		
m	21	259.00	1.47818E-01	8.41		
M	22	269.61	9.91245E-01	2.08		
m	23	271.40	7.82719E-01	2.42		
m	24	274.87	1.04551E-01	10.68		
M	25	283.88	1.26585E-01	9.03		
m	26	286.16	9.58982E-02	11.12		
m	28	300.19	2.92042E-01	4.26		
m	29	302.91	1.74247E-01	6.40		
	30	323.99	1.11542E-01	17.16		
	31	330.15	3.53889E-02	57.55		
	32	338.50	1.10611E-01	13.71		
	34	389.23	1.62417E-01	13.71		
M	35	402.05	3.61805E-01	3.72		
m	36	405.19	2.40785E-01	4.90		
	37	427.18	9.84722E-02	14.80		

Analysis Report for 588556 Set#3

Tetra Tech TO#160115-1 Set#3

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	38	455.15	3.19444E-02	40.26		
	39	480.80	-2.77500E-02	- 47.8	Sum	
	40	487.40	4.75555E-02	26.33		
	41	534.07	2.37222E-02	38.29		
	43	665.80	2.14444E-01	5.87		
	44	703.69	6.11111E-02	18.56	Sum	
	45	720.29	5.73056E-02	16.58		
	46	768.80	6.13611E-01	2.83		
	47	786.28	1.36458E-01	8.17		
	48	806.64	1.28750E-01	7.44		
	49	832.33	6.81111E-02	14.97		
	50	839.40	-4.02778E-03	- 263.0		
	51	934.50	3.25958E-01	3.85		
	52	964.72	5.01667E-02	23.15		
	54	1134.23	2.25000E-02	27.01		
	55	1155.81	1.40222E-01	6.27		
	56	1208.27	4.76528E-02	16.77		
	57	1238.83	5.09069E-01	2.62		
	58	1281.62	1.08847E-01	8.27		
M	59	1378.36	3.14437E-01	3.24		
m	60	1386.10	6.66503E-02	8.05		
M	61	1402.23	9.72366E-02	6.58		
m	62	1408.67	1.79493E-01	4.55		
	63	1509.97	1.40500E-01	7.27		
M	64	1539.55	2.53612E-02	16.74		
m	65	1544.51	1.79065E-02	20.65		
	66	1584.02	4.93333E-02	13.97		
	67	1661.99	7.20556E-02	8.30		
	68	1730.38	1.79889E-01	4.43	Sum	
	70	1848.22	1.27847E-01	5.63		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)

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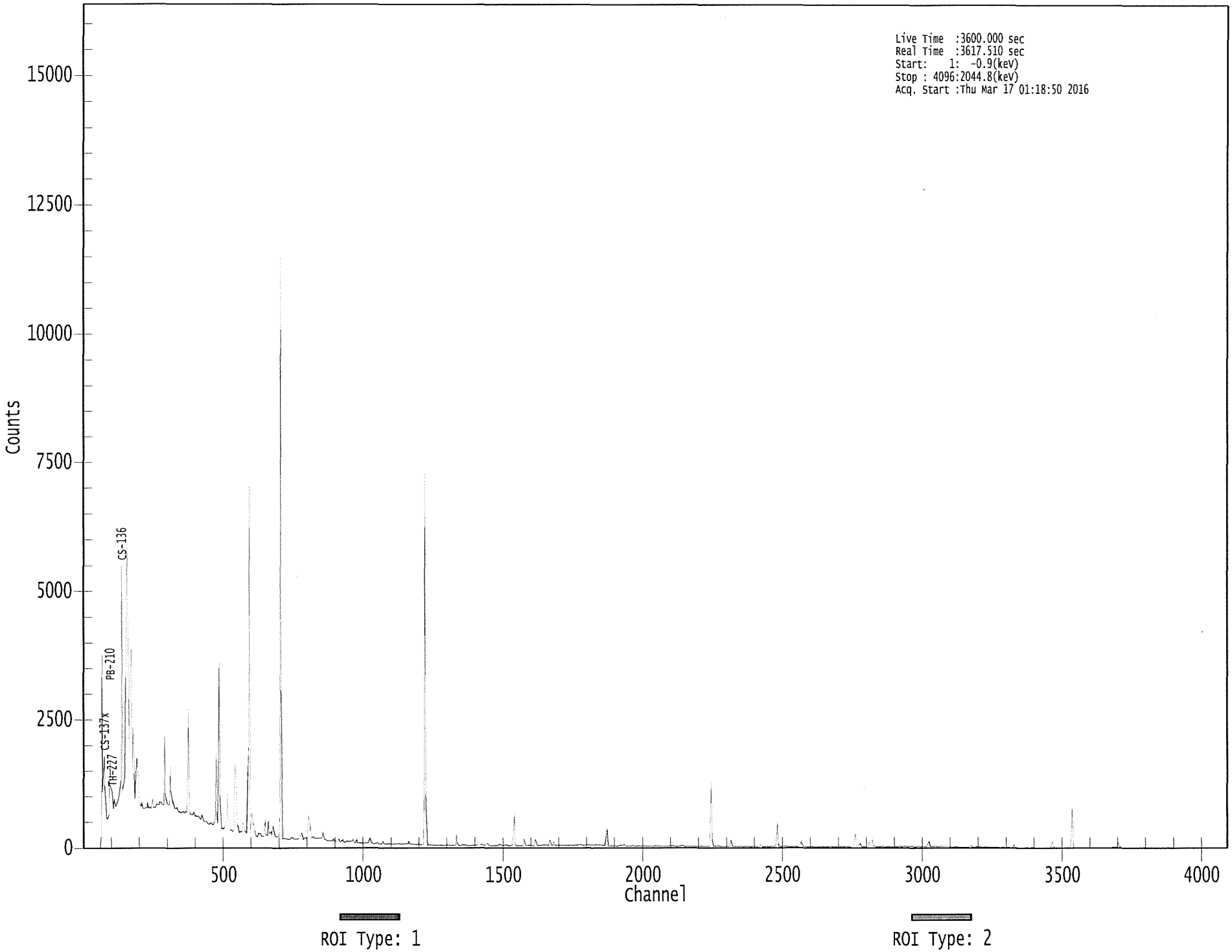
Analysis Report for 588556 Set#3

Tetra Tech TO#160115-1 Set#3

	K-40	1460.83		10.67	-1.68E+03	8.68E+03	8.68E+03
+	BI-214	609.31	*	44.80	1.63E+05	1.61E+03	1.61E+03
		1120.29	*	14.80	1.62E+05		4.39E+03
		1764.49	*	15.36	1.68E+05		3.20E+03
+	PB-214	295.21	*	18.50	1.71E+05	1.90E+03	2.81E+03
		351.92	*	35.80	1.81E+05		1.90E+03
+	RA-226	186.10	*	3.50	2.14E+05	2.22E+04	2.22E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 590212 Set#3

Tetra Tech TO#160115-1 Set#3

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 590212 Set#3
Sample Description	: Tetra Tech TO#160115-1 Set#3
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/16/2016 9:49:16PM
Acquisition Started	: 3/17/2016 9:08:37AM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3626.7 seconds
Dead Time	: 0.74 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7226

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.964	2.63E+05	6.27E+03	
PB-214	0.997	2.74E+05	1.29E+04	
RA-226	0.994	3.19E+05	1.94E+04	

Analysis Report for 590212 Set#3

Tetra Tech TO#160115-1 Set#3

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 2:00:21PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.18	3.55583E+00	1.20		
	2	36.39	-8.57916E-02	- 50.3		
	3	46.60	4.38479E-01	8.54		
	4	50.23	-7.27783E-03	- 391.9		
	5	67.77	3.04650E+00	1.88		
M	6	74.91	8.39858E-01	3.39		
m	7	77.17	1.74395E+00	3.30		
m	8	81.15	4.10982E-01	3.73		
m	9	83.88	1.09275E+00	3.34		
m	10	87.36	5.44025E-01	3.53		
m	11	89.88	7.76577E-02	9.59		
	12	94.76	-7.41389E-01	- 9.2		
	13	144.11	1.34240E+00	3.40		
	14	154.30	8.93611E-01	4.65		
	16	236.13	-9.42667E-01	- 4.9		
	17	242.13	2.53425E+00	1.92		
M	18	254.02	2.69734E-01	6.11		
m	19	256.33	8.06723E-01	2.70		
m	20	259.05	2.50130E-01	6.43		
M	21	269.61	1.44106E+00	1.74		
m	22	271.40	1.13781E+00	2.02		
m	23	274.76	1.35204E-01	10.26		
	24	286.31	-9.38417E+00	- 0.7		
m	26	300.17	4.23518E-01	3.64		
m	27	302.93	2.44841E-01	5.80		
	28	324.02	1.38611E-01	16.50		
M	29	330.07	1.24242E-01	19.33		
m	30	334.37	1.81852E-02	22.40		
m	31	338.49	9.92392E-02	19.37		
M	33	387.08	8.07330E-02	12.39		
m	34	389.08	1.32212E-01	8.57		
M	35	402.03	5.58650E-01	3.01		
m	36	405.16	3.71309E-01	3.97		
	37	427.45	2.14722E-01	13.18		

Analysis Report for 590212 Set#3

Tetra Tech TO#160115-1 Set#3

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	38	445.17	8.10972E-02	20.48		
	39	455.01	5.30833E-02	30.10		
	40	480.62	-1.38889E-02	- 128.4		
	41	487.28	6.91944E-02	23.58		
	42	510.91	2.74702E-01	7.83		
	43	580.40	1.13542E-01	13.85		
	45	665.83	3.32431E-01	4.11		
	46	703.40	1.12778E-01	11.53	Sum	
	47	720.24	7.84028E-02	23.76		
	48	768.74	9.92444E-01	2.14		
	49	786.45	1.85833E-01	6.68		
	50	806.59	2.35667E-01	6.18		
	51	832.43	6.90555E-02	17.90		
	52	839.33	-2.13611E-02	- 73.4		
	53	934.55	5.16708E-01	3.07		
	54	1052.70	5.05556E-02	17.93		
	56	1155.73	2.46167E-01	5.46		
	57	1208.36	6.00833E-02	14.20		
	58	1238.75	7.86208E-01	2.19		
	59	1281.65	1.72083E-01	6.60		
M	60	1378.34	4.96432E-01	2.57		
m	61	1386.02	1.04661E-01	6.50		
M	62	1402.20	1.72001E-01	4.82		
m	63	1408.61	2.74694E-01	3.64		
	64	1509.88	2.30833E-01	4.71		
	65	1543.98	1.38750E-02	53.24		
	66	1583.99	7.36111E-02	11.19		
	67	1599.84	1.61111E-02	42.78		
	68	1662.09	1.25306E-01	6.60		
	69	1730.29	2.87056E-01	3.44	Sum	
	71	1838.96	-2.89444E-02	- 18.6		
	72	1848.08	1.84417E-01	4.92		
	73	1873.87	2.06528E-02	21.14		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

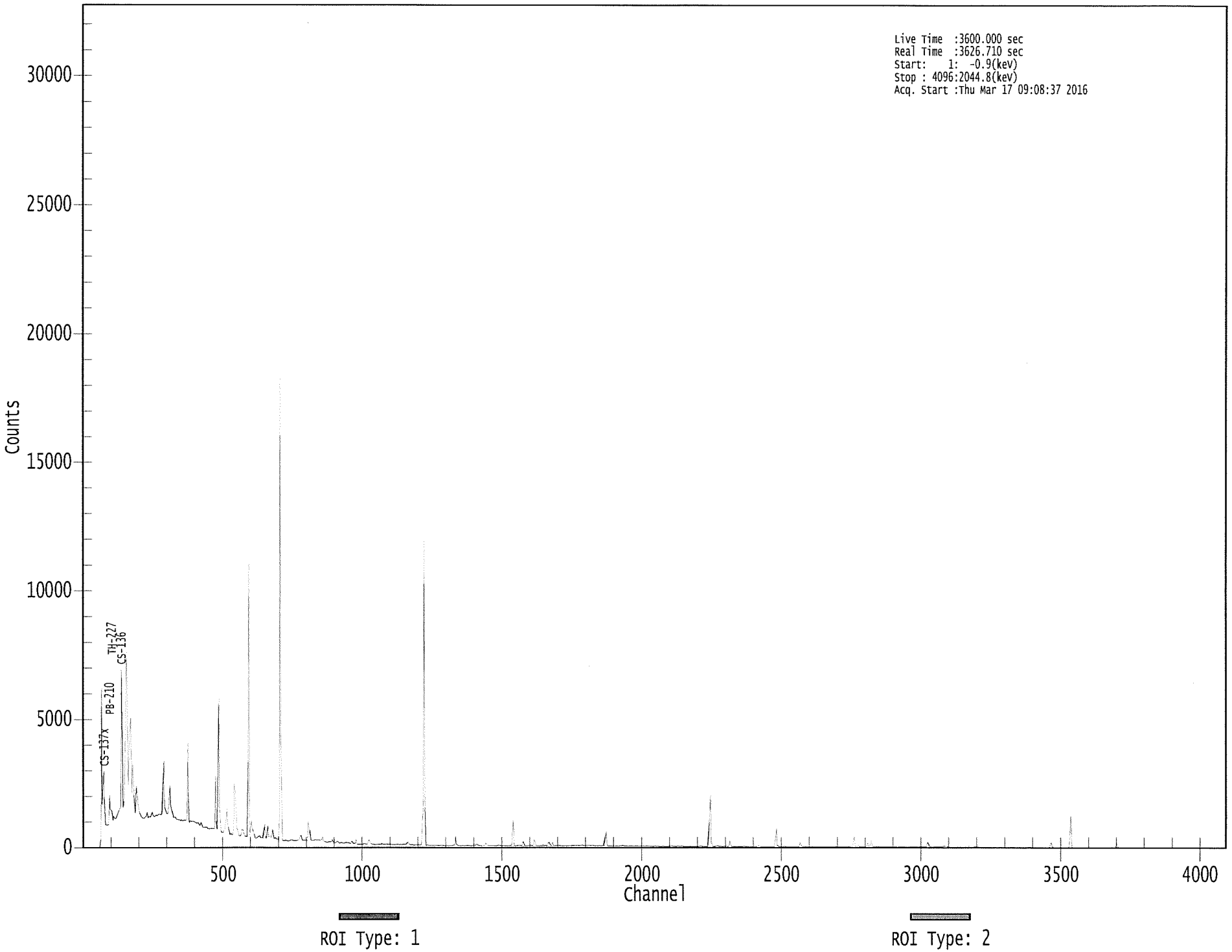
Analysis Report for 590212 Set#3

Tetra Tech TO#160115-1 Set#3

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	3.55E+02	1.07E+04	1.07E+04
+	BI-214	609.31	*	44.80	2.63E+05	2.03E+03	2.03E+03
		1120.29	*	14.80	2.66E+05		6.63E+03
		1764.49	*	15.36	2.61E+05		4.81E+03
+	PB-214	295.21	*	18.50	2.61E+05	2.86E+03	3.59E+03
		351.92	*	35.80	2.89E+05		2.86E+03
+	RA-226	186.10	*	3.50	3.19E+05	3.05E+04	3.05E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 590213 Set#3

Tetra Tech TO#160115-1 Set#3

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 590213 Set#3
Sample Description	: Tetra Tech TO#160115-1 Set#3
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/16/2016 9:50:04PM
Acquisition Started	: 3/17/2016 10:12:26AM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3615.8 seconds
Dead Time	: 0.44 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7224

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.965	1.50E+05	3.69E+03	
PB-214	0.997	1.59E+05	7.49E+03	
RA-226	0.993	1.78E+05	1.11E+04	

Analysis Report for 590213 Set#3

Tetra Tech TO#160115-1 Set#3

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:59:25PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.20	1.74126E+00	1.71		
	2	36.38	1.24472E-01	23.01		
	3	46.59	3.59021E-01	8.28		
	4	50.19	-5.08889E-02	- 44.3		
	5	67.77	1.45197E+00	3.03		
M	6	74.90	5.00398E-01	4.44		
m	7	77.17	1.07404E+00	4.33		
m	8	81.15	2.42202E-01	4.87		
m	9	83.87	6.17561E-01	4.39		
m	10	87.39	3.16336E-01	4.63		
m	11	89.89	5.19944E-02	11.05		
M	12	94.80	-4.41478E-01	- 11.9		
m	13	97.72	-1.10218E-02	- 72.8		
	14	144.10	8.06167E-01	5.44		
	15	154.30	5.73889E-01	5.55		
	17	236.10	-5.55972E-01	- 6.6		
	18	242.15	1.52015E+00	2.21		
M	19	256.40	4.39625E-01	3.69		
m	20	259.04	1.43228E-01	8.39		
M	21	269.59	9.02655E-01	2.18		
m	22	271.41	7.51213E-01	2.43		
M	23	283.94	9.11258E-02	11.92		
m	24	286.30	7.73157E-02	13.41		
m	26	300.13	2.60511E-01	4.62		
m	27	302.86	1.49957E-01	7.06		
	28	324.07	7.65139E-02	21.31		
M	29	330.05	8.91937E-02	21.03		
m	30	334.54	1.75808E-02	23.23		
m	31	338.51	6.25033E-02	21.12		
	33	389.26	1.23056E-01	15.35		
M	34	402.08	3.17451E-01	4.02		
m	35	405.12	1.97617E-01	5.55		
	36	427.21	1.14528E-01	18.23		
	37	454.94	4.37222E-02	29.66		

Analysis Report for 590213 Set#3

Tetra Tech TO#160115-1 Set#3

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	38	480.45	-1.56945E-03	- 726.4		
	39	487.53	2.70278E-02	46.50		
	40	510.97	1.66674E-01	9.45		
	41	580.56	6.10556E-02	20.80		
	43	665.79	1.80889E-01	5.94		
	44	719.98	4.36111E-02	23.85		
	45	768.75	5.67514E-01	2.80		
	46	786.21	1.06944E-01	8.09		
	47	806.58	1.30222E-01	9.22		
	48	832.39	2.79167E-02	37.28		
	49	839.59	1.30000E-02	70.71		
	50	934.54	2.98472E-01	4.20		
	51	1052.50	3.12222E-02	26.04		
	53	1155.84	1.21014E-01	6.99		
	54	1208.14	2.90417E-02	18.30		
	55	1238.73	4.67875E-01	2.84		
	56	1254.09	2.44444E-02	23.79	S-Esc	
	57	1281.62	1.14806E-01	8.45		
M	58	1378.36	2.94009E-01	3.37		
m	59	1385.85	5.89957E-02	8.61		
M	60	1402.24	9.74398E-02	6.36		
m	61	1408.56	1.71054E-01	4.56		
	62	1509.87	1.53931E-01	6.41		
	63	1583.84	4.11806E-02	15.02		
	64	1661.79	7.21111E-02	8.55		
	65	1730.39	1.76111E-01	4.59	Sum	
	67	1848.13	1.12847E-01	5.96		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	2.77E+03	8.86E+03	8.86E+03
+	BI-214	609.31	*	44.80	1.49E+05	1.27E+03	1.27E+03
		1120.29	*	14.80	1.52E+05		5.52E+03

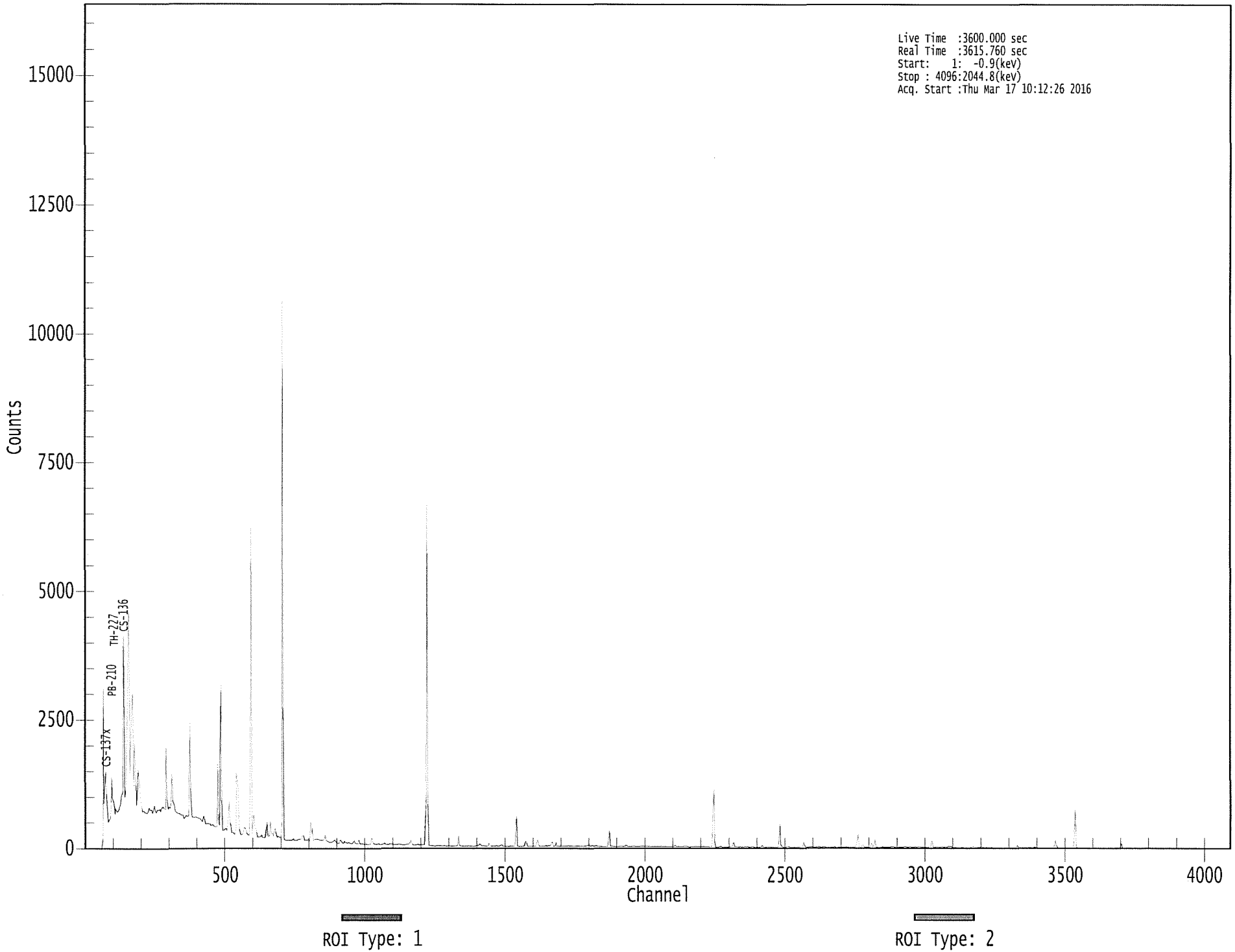
Analysis Report for 590213 Set#3

Tetra Tech TO#160115-1 Set#3

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	BI-214	1764.49	*	15.36	1.51E+05	1.27E+03	3.19E+03
+	PB-214	295.21	*	18.50	1.53E+05	1.82E+03	2.69E+03
		351.92	*	35.80	1.66E+05		1.82E+03
+	RA-226	186.10	*	3.50	1.78E+05	1.84E+04	1.84E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 590214 Set#3

Tetra Tech TO#160115-1 Set#3

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 590214 Set#3
Sample Description	: Tetra Tech TO#160115-1 Set#3
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/16/2016 9:50:53PM
Acquisition Started	: 3/17/2016 11:14:03AM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3603.2 seconds
Dead Time	: 0.09 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7222

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/Each)	Wt mean Activity Uncertainty	Comments
BI-214	0.966	1.39E+04	4.83E+02	
PB-214	0.997	1.67E+04	8.28E+02	
RA-226	0.996	5.79E+04	4.01E+03	

Analysis Report for 590214 Set#3

Tetra Tech TO#160115-1 Set#3

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:58:50PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	46.65	2.05767E-02	75.11		
	2	50.24	9.92778E-02	13.31		
	3	63.32	2.30390E-01	10.31		
	4	67.77	1.50333E-01	14.19		
M	5	74.82	-7.62096E-02	- 16.2		
m	6	77.27	-1.51735E-01	- 14.6		
M	7	81.16	1.97538E-01	6.55		
m	8	83.87	4.77743E-01	3.38		
M	9	92.71	5.37935E-01	2.99		
m	10	94.71	1.88962E-01	5.81		
	11	144.09	2.10319E-01	6.40		
	12	154.31	1.46764E-01	10.40		
	14	236.16	1.18056E-01	12.38		
	15	242.13	7.93194E-02	13.68		
	16	256.28	1.46556E-01	8.67		
M	17	269.65	2.23742E-01	4.10		
m	18	271.39	1.80568E-01	4.66		
m	20	300.22	6.84962E-02	8.17		
m	21	302.79	5.42110E-02	8.97		
	22	324.06	1.06944E-02	62.67		
	23	330.07	2.64861E-02	28.31		
M	25	402.01	8.62077E-02	6.70		
m	26	405.16	4.93852E-02	9.22		
	28	768.66	8.35000E-02	7.30		
	29	832.47	1.92917E-02	18.92		
	30	934.71	2.44444E-02	14.31		
	32	1238.97	3.86667E-02	9.94		
	33	1378.50	2.60278E-02	14.15		

Analysis Report for 590214 Set#3

Tetra Tech TO#160115-1 Set#3

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

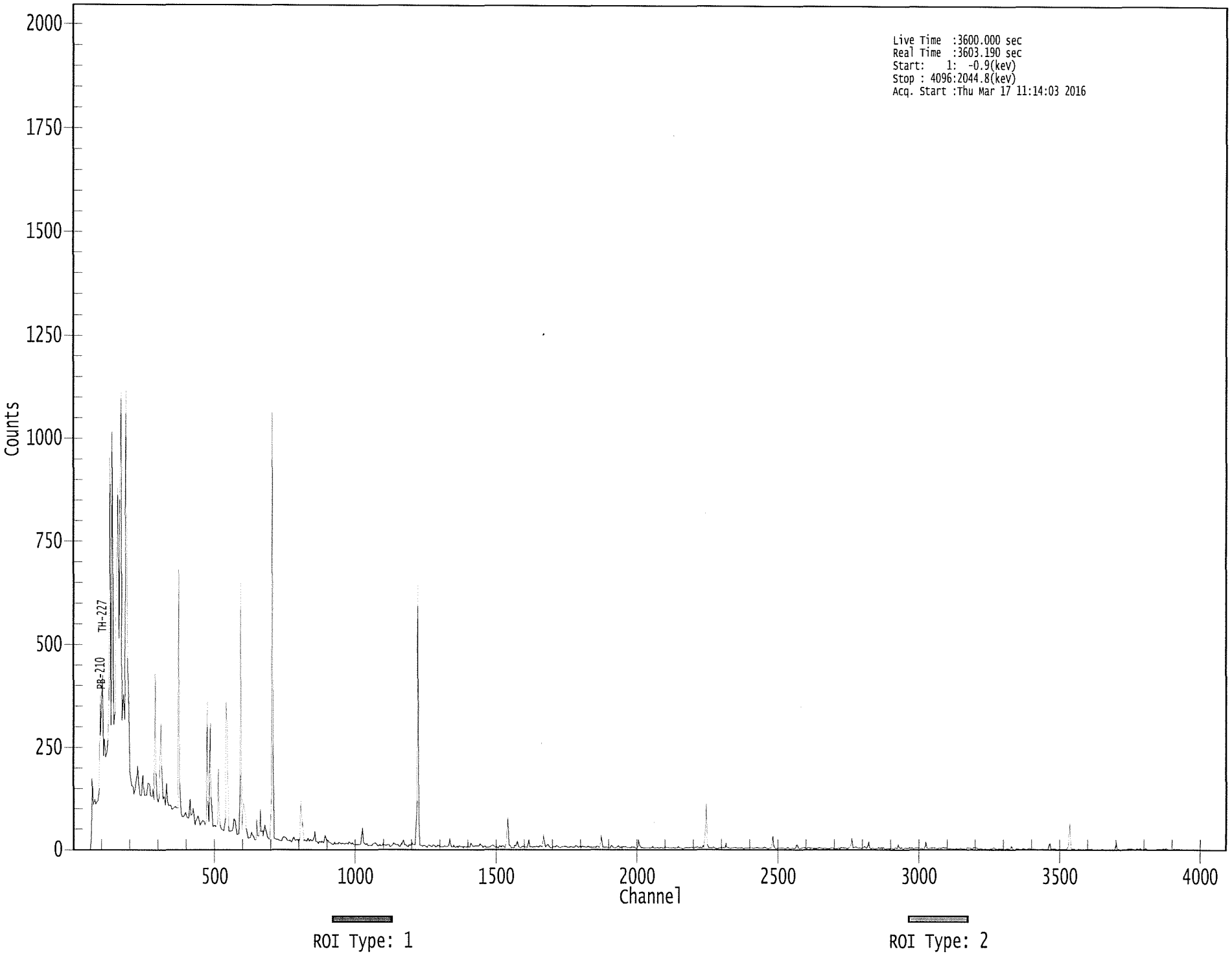
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	2.94E+03	3.87E+03	3.87E+03
+	BI-214	609.31	*	44.80	1.40E+04	3.92E+02	3.92E+02
		1120.29	*	14.80	1.36E+04		1.59E+03
		1764.49	*	15.36	1.42E+04		1.25E+03
+	PB-214	295.21	*	18.50	1.55E+04	6.37E+02	1.01E+03
		351.92	*	35.80	1.83E+04		6.37E+02
+	RA-226	186.10	*	3.50	5.79E+04	8.59E+03	8.59E+03

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 591000 Set#3

Tetra Tech TO#160115-1 Set#3

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 591000 Set#3
Sample Description	: Tetra Tech TO#160115-1 Set#3
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/16/2016 9:51:39PM
Acquisition Started	: 3/17/2016 12:16:02PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3610.5 seconds
Dead Time	: 0.29 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7220

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.963	9.74E+04	2.47E+03	
PB-214	0.996	1.04E+05	4.92E+03	
RA-226	0.994	1.30E+05	8.69E+03	

Analysis Report for 591000 Set#3

Tetra Tech TO#160115-1 Set#3

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:58:14PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.19	1.19108E+00	2.15		
	2	36.48	-9.87362E-02	- 25.8		
	3	46.68	5.64660E-01	4.70		
M	4	50.07	-3.40911E-02	- 16.5		
m	5	53.30	-2.73964E-01	- 10.2		
	6	67.78	1.44167E+00	2.41		
M	7	74.90	4.39431E-01	4.72		
m	8	77.15	9.47605E-01	4.60		
m	9	81.16	1.32849E-01	5.94		
m	10	83.86	4.00894E-01	4.74		
m	11	87.40	2.64643E-01	4.94		
m	12	89.93	5.09666E-02	10.30		
	13	94.79	-1.60972E-01	- 16.9		
	14	144.11	4.40458E-01	5.64		
	15	154.34	2.81806E-01	8.96		
	17	210.84	2.03333E-02	81.35		
	18	236.13	-5.66389E-01	- 5.1		
	19	242.15	1.00972E+00	3.02		
M	20	256.33	2.36898E-01	5.18		
m	21	259.09	1.02209E-01	9.48		
M	22	269.62	4.30841E-01	3.28		
m	23	271.38	3.52872E-01	3.74		
m	25	300.19	1.01938E-01	9.12		
	26	324.17	1.80556E-03	935.99		
	27	329.99	2.73333E-02	56.23		
	28	338.39	5.50000E-02	23.61		
M	30	402.11	1.58434E-01	6.11		
m	31	405.28	1.14018E-01	7.67		
	32	427.06	4.54444E-02	27.44		
	33	487.18	3.22361E-02	28.74		
	35	665.81	1.14583E-01	8.46		
	36	768.75	3.73167E-01	3.39		
	37	786.25	8.95000E-02	10.20		
	38	806.72	7.47083E-02	12.72		

Analysis Report for 591000 Set#3

Tetra Tech TO#160115-1 Set#3

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	39	832.29	1.43333E-02	57.72		
	40	839.31	1.56806E-02	45.30		
	41	934.50	1.99514E-01	4.88		
	43	1155.71	8.94444E-02	8.37		
	44	1238.77	3.05625E-01	3.45		
	45	1281.78	6.37500E-02	10.39		
M	46	1378.42	1.91597E-01	4.13		
m	47	1386.06	3.76033E-02	10.65		
M	48	1402.15	5.40758E-02	8.70		
m	49	1408.62	1.13473E-01	5.61		
	50	1509.84	8.74167E-02	7.93		
	51	1544.21	4.69444E-03	98.01		
	52	1584.04	2.83333E-02	19.00		
	53	1661.88	4.14583E-02	11.04		
	54	1730.33	9.82917E-02	6.18	Sum	
	56	1848.25	7.47500E-02	7.81		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

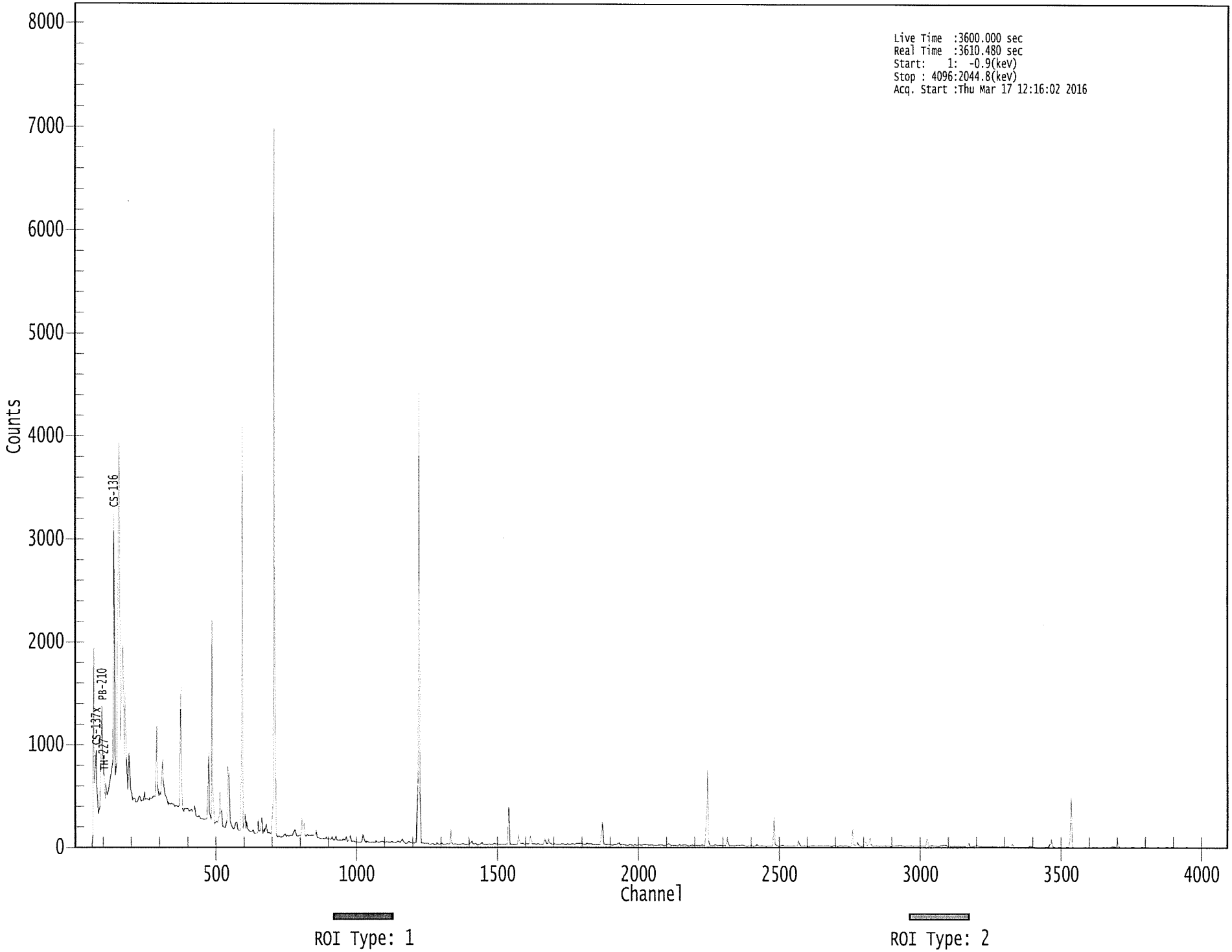
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	3.06E+03	7.27E+03	7.27E+03
+	BI-214	609.31	*	44.80	9.69E+04	9.71E+02	9.71E+02
		1120.29	*	14.80	9.74E+04		4.09E+03
		1764.49	*	15.36	9.80E+04		2.78E+03
+	PB-214	295.21	*	18.50	1.00E+05	1.72E+03	2.34E+03
		351.92	*	35.80	1.09E+05		1.72E+03
+	RA-226	186.10	*	3.50	1.30E+05	1.93E+04	1.93E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Southwest Research Institute, Division 1, Radiochemistry

Gamma Spectroscopy Summary Sheet (1 sig)

Client: Tetra Tech (Set#4)
Task Order: 160115-1
Prep Page: N/A
Prep Date: N/A

JR 4/14/16

RSpris 4/19/16

Project #: 21431.01.001
SRR: 56591, 56639, 56785, 56876
TPU sig factor: 1
Units: g

Notes:

Sample ID 588049 | Sample # 7218 | Sample Size 1 Each | Date Analyzed 3/17/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	52.950	100.00%	1	4.14E+03	9.93E+01	3.04E+01	2.38E+01		
^{214}Pb	52.950	100.00%	1	4.33E+03	2.04E+02	4.40E+01	2.26E+01		
^{226}Ra	52.950	100.00%	1	4.90E+03	3.01E+02	4.89E+02	1.20E+02		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 588556 | Sample # 7216 | Sample Size 1 Each | Date Analyzed 3/17/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	54.275	100.0%	1	2.90E+03	7.10E+01	3.00E+01	2.01E+01		
^{214}Pb	54.275	100.00%	1	3.09E+03	1.46E+02	3.73E+01	1.88E+01		
^{226}Ra	54.275	100.00%	1	3.77E+03	2.41E+02	4.74E+02	1.13E+02		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 588556D | Sample # 7214 | Sample Size 1 Each | Date Analyzed 3/17/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RPDs	DER	
^{214}Bi	52.722	100.0%	1	3.03E+03	7.42E+01	2.28E+01	2.02E+01		4.3	1.3	Pass
^{214}Pb	52.722	100.00%	1	3.25E+03	1.53E+02	3.77E+01	1.96E+01		5.1	0.8	Pass
^{226}Ra	52.722	100.00%	1	3.89E+03	2.43E+02	4.23E+02	1.04E+02		3.0	0.3	Pass

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.
Duplicate Evaluation = (Sample-Duplicate) / sqrt ((TPUsample^2) + (TPUdup^2)) # 3

Sample ID 590212 | Sample # 7212 | Sample Size 1 Each | Date Analyzed 3/17/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	50.700	100.00%	1	5.54E+03	1.32E+02	3.67E+01	2.83E+01		
^{214}Pb	50.700	100.00%	1	5.77E+03	2.71E+02	5.65E+01	2.70E+01		
^{226}Ra	50.700	100.00%	1	6.77E+03	4.05E+02	5.41E+02	1.35E+02		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Note: Ra 226 is not reported from this spreadsheet.

JR 4/20/16

Southwest Research Institute, Division 1, Radiochemistry

Gamma Spectroscopy Summary Sheet (1 sig)

Client: Tetra Tech (Set#4)
Task Order: 160115-1
Prep Page: N/A
Prep Date: N/A

Project #: 21431.01.001
SRR: 56591, 56639, 56785, 56876
TPU sig factor: 1
Units: g

Notes: _____

Sample ID 590213 | Sample # 7210 | Sample Size 1 Each | Date Analyzed 3/17/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	51.567	100.00%	1	2.24E+03	5.62E+01	1.99E+01	1.76E+01		
^{214}Pb	51.567	100.00%	1	2.38E+03	1.12E+02	3.28E+01	1.70E+01		
^{226}Ra	51.567	100.00%	1	2.90E+03	1.84E+02	3.34E+02	8.46E+01		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 590214 | Sample # 7208 | Sample Size 1 Each | Date Analyzed 3/17/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	51.435	100.00%	1	2.77E+02	9.50E+00	8.77E+00	6.32E+00		
^{214}Pb	51.435	100.00%	1	3.20E+02	1.59E+01	1.28E+01	6.11E+00		
^{226}Ra	51.435	100.00%	1	1.33E+03	8.83E+01	1.68E+02	4.70E+01		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 591000 | Sample # 7206 | Sample Size 1 Each | Date Analyzed 3/17/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	47.666	100.00%	1	2.92E+03	7.21E+01	2.19E+01	2.09E+01		
^{214}Pb	47.666	100.00%	1	3.15E+03	1.49E+02	4.66E+01	2.13E+01		
^{226}Ra	47.666	100.00%	1	3.58E+03	2.29E+02	4.47E+02	1.09E+02		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

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Analysis Report for 588049 Set#4

TetraTech TO#160115-1 Set#4

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 588049 Set#4
Sample Description	: TetraTech TO#160115-1 Set#4
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/17/2016 12:03:47PM
Acquisition Started	: 3/17/2016 1:18:24PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3622.4 seconds
Dead Time	: 0.62 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7218

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.965	2.19E+05	5.26E+03	
PB-214	0.996	2.30E+05	1.08E+04	
RA-226	0.993	2.59E+05	1.59E+04	

Analysis Report for 588049 Set#4

TetraTech TO#160115-1 Set#4

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:57:40PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.18	2.45364E+00	1.54		
	2	36.38	8.05556E-02	47.05		
	3	46.63	3.61980E-01	9.39		
	4	50.16	-1.70555E-02	- 137.2		
	5	67.76	2.50132E+00	1.92		
M	6	74.91	7.07564E-01	3.63		
m	7	77.17	1.45754E+00	3.53		
m	8	81.15	3.38331E-01	4.00		
m	9	83.89	8.58588E-01	3.59		
m	10	87.37	4.49368E-01	3.79		
m	11	89.92	6.67252E-02	9.98		
M	12	94.78	-6.05804E-01	- 10.0		
m	13	97.67	-1.19740E-02	- 68.5		
	14	144.16	1.21639E+00	4.32		
	15	154.31	8.00417E-01	6.14		
	17	210.77	6.89167E-02	39.15		
	18	236.15	-1.15939E+00	- 4.2		
	19	242.16	2.10196E+00	2.05		
M	20	256.34	6.19085E-01	3.11		
m	21	259.02	2.60532E-01	5.75		
M	22	269.63	1.18022E+00	1.97		
m	23	271.40	9.44470E-01	2.26		
m	24	274.81	1.55150E-01	8.53		
	25	286.26	-5.79144E+00	- 0.9		
m	27	300.17	3.39489E-01	4.19		
m	28	302.85	2.05370E-01	6.29		
	29	323.99	7.69861E-02	32.12		
	30	330.01	1.16389E-01	18.32		
	31	338.35	1.33222E-01	13.13		
	33	386.97	2.11667E-01	10.80		
M	34	402.04	4.63463E-01	3.33		
m	35	405.15	3.06624E-01	4.43		
	36	427.26	1.18958E-01	18.06		
	37	455.11	1.18056E-02	175.67		

Analysis Report for 588049 Set#4

TetraTech TO#160115-1 Set#4

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	38	480.71	1.98056E-02	62.00	Sum	
	39	487.19	2.24167E-02	84.89		
	40	511.09	2.39257E-01	8.64		
	41	533.81	2.41806E-02	37.72		
	42	580.36	1.02736E-01	15.59		
	44	665.81	2.61944E-01	4.65		
	45	703.44	9.23611E-02	13.64	Sum	
	46	720.22	7.90278E-02	17.08		
	47	753.14	2.02500E-02	45.80		
	48	768.77	8.54444E-01	2.39		
	49	786.28	1.86111E-01	8.02		
	50	806.55	1.75389E-01	7.64		
	51	832.46	5.30000E-02	21.55		
	52	839.44	-2.01389E-03	- 636.3		
	53	934.58	4.60278E-01	3.29		
	54	964.56	5.18750E-02	17.51		
	55	1052.55	5.08333E-02	15.59		
	56	1070.61	3.33333E-02	29.86		
	58	1155.77	2.01556E-01	5.69		
	59	1208.20	3.63889E-02	22.50		
	60	1238.70	6.76389E-01	2.63		
	61	1281.58	1.63167E-01	6.28		
M	62	1378.38	4.21562E-01	2.80		
m	63	1385.85	9.41248E-02	6.79		
M	64	1402.15	1.32681E-01	5.53		
m	65	1408.70	2.39089E-01	3.90		
	66	1509.88	1.95750E-01	5.37		
M	67	1539.01	3.63577E-02	13.65		
m	68	1544.06	2.88690E-02	15.35		
	69	1583.94	6.34583E-02	10.92		
	70	1599.88	2.81528E-02	21.21		
	71	1662.08	9.18333E-02	8.00		
	72	1730.38	2.52000E-01	3.71	Sum	
	74	1848.13	1.49833E-01	5.53		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

Analysis Report for 588049 Set#4

TetraTech TO#160115-1 Set#4

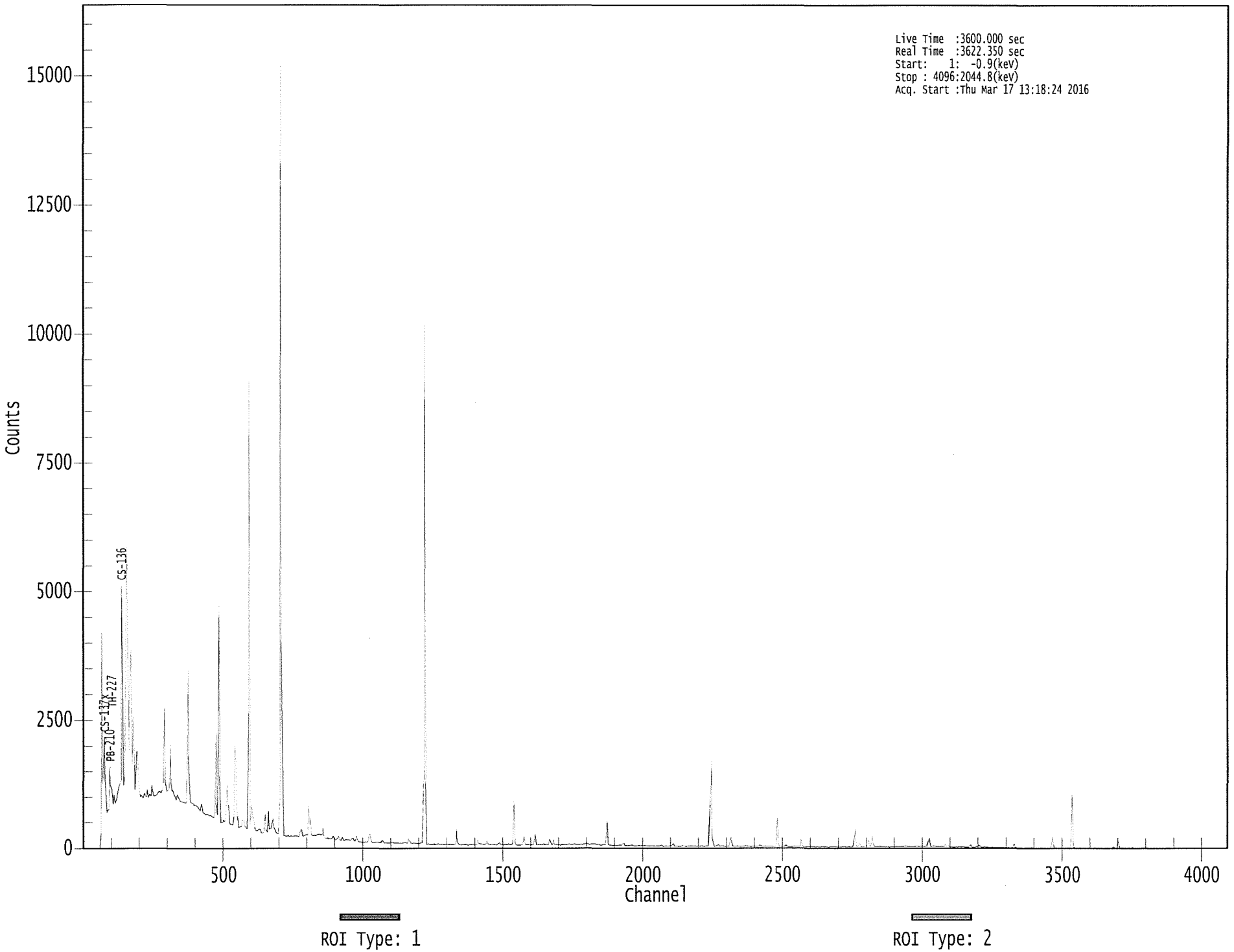
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	1.42E+03	1.01E+04	1.01E+04
+	BI-214	609.31	*	44.80	2.20E+05	1.61E+03	1.61E+03
		1120.29	*	14.80	2.16E+05		5.69E+03
		1764.49	*	15.36	2.20E+05		3.83E+03
+	PB-214	295.21	*	18.50	2.22E+05	2.33E+03	3.33E+03
		351.92	*	35.80	2.39E+05		2.33E+03
+	RA-226	186.10	*	3.50	2.59E+05	2.59E+04	2.59E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 588556 Set#4

TetraTech TO#160115-1 Set#4

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 588556 Set#4
Sample Description	: TetraTech TO#160115-1 Set#4
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/17/2016 12:08:37PM
Acquisition Started	: 3/17/2016 2:20:24PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3616.9 seconds
Dead Time	: 0.47 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7216

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.965	1.58E+05	3.85E+03	
PB-214	0.996	1.68E+05	7.91E+03	
RA-226	0.994	2.05E+05	1.31E+04	

Analysis Report for 588556 Set#4

TetraTech TO#160115-1 Set#4

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:57:00PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.19	2.42442E+00	1.47		
	2	36.45	-2.01527E-02	- 153.9		
	3	46.68	3.47368E-01	9.54		
	4	50.21	-6.48889E-02	- 40.0		
	5	67.77	2.54483E+00	1.96		
M	6	74.90	6.00902E-01	4.07		
m	7	77.17	1.25095E+00	3.96		
m	8	81.13	3.16733E-01	4.38		
m	9	83.88	7.71223E-01	4.01		
m	10	87.36	3.50427E-01	4.29		
m	11	89.94	5.64577E-02	10.88		
M	12	94.81	-6.39701E-01	- 8.5		
m	13	97.97	-1.91884E-02	- 29.4	D-Esc	
	14	122.34	8.01112E-02	41.42		
	15	144.14	8.69986E-01	3.72		
	16	154.32	5.82264E-01	6.56		
	18	210.72	6.91945E-02	28.41		
	19	236.10	-4.31500E-01	- 8.0		
	20	242.12	1.50836E+00	2.51		
M	21	256.35	5.22366E-01	3.32		
m	22	259.15	1.42576E-01	8.64		
M	23	269.64	8.96589E-01	2.19		
m	24	271.40	7.16023E-01	2.53		
M	25	283.81	8.86775E-02	11.75		
m	26	286.24	9.30802E-02	11.39		
m	28	300.18	2.92612E-01	4.31		
m	29	302.91	1.62043E-01	6.86		
	30	324.03	9.52778E-02	18.49		
M	31	330.09	6.09569E-02	30.04		
m	32	334.49	1.78204E-02	30.92		
m	33	338.57	4.43755E-02	30.11		
M	35	402.05	3.34345E-01	3.94		
m	36	405.16	2.43367E-01	4.87		
	37	427.29	1.45944E-01	14.64		

Analysis Report for 588556 Set#4

TetraTech TO#160115-1 Set#4

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	38	445.37	3.52222E-02	42.43		
	39	455.00	2.79861E-02	39.76		
	40	580.45	4.02778E-02	26.48		
	42	665.75	1.92417E-01	6.02		
	43	703.35	7.05556E-02	14.46	Sum	
	44	720.32	4.00556E-02	17.56		
	45	768.76	5.98611E-01	2.87		
	46	786.41	1.39917E-01	9.48		
	47	806.64	1.28694E-01	9.34		
	48	832.35	5.09445E-02	19.42		
	49	839.50	-2.13889E-02	- 52.5		
	50	934.54	3.07611E-01	3.90		
	51	964.56	3.09444E-02	20.46		
	53	1155.80	1.28611E-01	7.03		
	54	1238.75	4.70444E-01	2.84		
	55	1281.66	1.11111E-01	7.78		
M	56	1378.36	3.03847E-01	3.31		
m	57	1386.00	6.41530E-02	8.07		
M	58	1402.25	9.53601E-02	6.48		
m	59	1408.70	1.63628E-01	4.73		
	60	1509.86	1.48194E-01	5.49		
	61	1584.27	4.92778E-02	12.41		
	62	1662.09	6.41111E-02	8.45		
	63	1730.30	1.70111E-01	4.51	Sum	
	65	1838.98	1.30000E-02	34.83		
	66	1848.10	1.08389E-01	6.70		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	2.03E+03	8.80E+03	8.80E+03
+	BI-214	609.31	*	44.80	1.57E+05	1.63E+03	1.63E+03
		1120.29	*	14.80	1.54E+05		4.92E+03
		1764.49	*	15.36	1.61E+05		2.99E+03

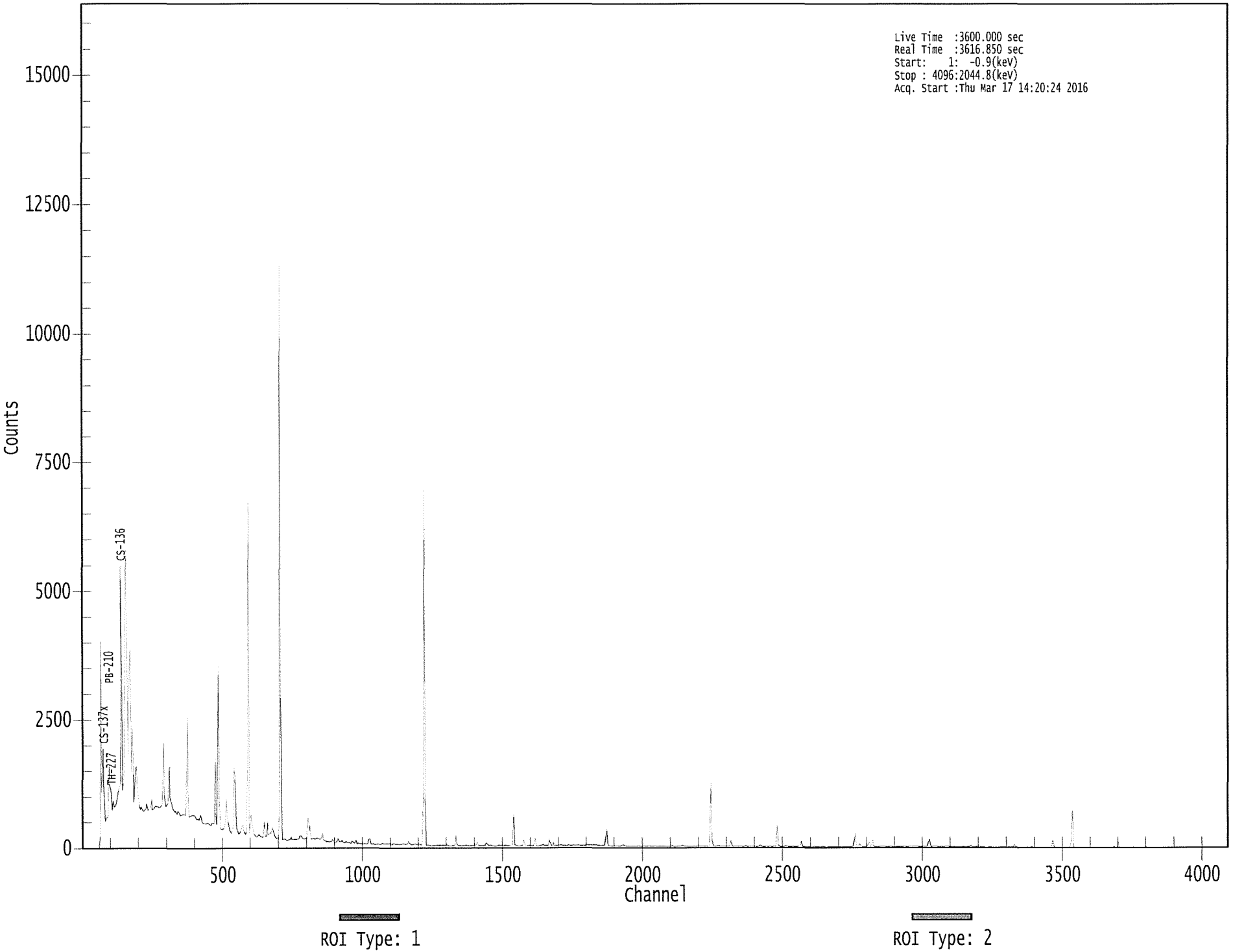
Analysis Report for 588556 Set#4

TetraTech TO#160115-1 Set#4

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
+	PB-214	295.21	*	18.50	1.61E+05	2.02E+03	2.80E+03
		351.92	*	35.80	1.77E+05		2.02E+03
+	RA-226	186.10	*	3.50	2.05E+05	2.57E+04	2.57E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 588556Dup.Set#4

TetraTech TO#160115-1 Set.#4

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 588556Dup.Set#4
Sample Description	: TetraTech TO#160115-1 Set.#4
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/17/2016 12:10:16PM
Acquisition Started	: 3/17/2016 3:22:08PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3617.3 seconds
Dead Time	: 0.48 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7214

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.959	1.60E+05	3.91E+03	
PB-214	0.996	1.72E+05	8.08E+03	
RA-226	0.994	2.05E+05	1.28E+04	

Analysis Report for 588556Dup.Set#4

TetraTech TO#160115-1 Set.#4

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:56:28PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.20	2.26583E+00	1.50		
	2	36.45	-9.42638E-02	- 36.3		
	3	46.63	4.73452E-01	6.72		
	4	50.21	-6.32361E-02	- 38.1		
	5	67.76	1.89026E+00	2.80		
M	6	74.91	6.45131E-01	3.89		
m	7	77.17	1.33661E+00	3.79		
m	8	81.14	3.06791E-01	4.29		
m	9	83.89	8.04955E-01	3.84		
m	10	87.34	3.75047E-01	4.11		
m	11	89.95	5.19922E-02	12.01		
M	12	94.79	-5.37000E-01	- 10.2		
m	13	97.80	-1.44435E-03	- 371.1		
	14	144.10	9.23819E-01	4.74		
	15	154.31	5.96917E-01	5.22		
	17	236.16	-4.99556E-01	- 7.3		
	18	242.14	1.72306E+00	1.97		
M	19	256.40	5.42087E-01	3.23		
m	20	258.97	1.40852E-01	8.79		
M	21	269.62	9.46547E-01	2.14		
m	22	271.38	7.71401E-01	2.43		
m	23	274.78	9.38820E-02	11.70		
M	24	283.92	4.08963E-02	34.98		
m	25	286.11	4.79925E-02	34.95		
m	27	300.24	3.11163E-01	4.48		
m	28	302.84	1.44584E-01	7.83		
	29	324.06	7.55556E-02	23.84		
	30	330.08	5.08333E-02	41.70		
	31	338.61	1.06278E-01	14.02		
M	33	387.06	6.36346E-02	13.43		
m	34	389.30	7.38978E-02	12.10		
M	35	402.07	3.34377E-01	3.93		
m	36	405.13	2.44484E-01	4.86		
	37	427.44	1.00097E-01	15.04		

Analysis Report for 588556Dup.Set#4
TetraTech TO#160115-1 Set.#4

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	38	462.05	1.23750E-02	86.75		
	39	480.72	-2.33333E-02	- 65.8	Sum	
	40	487.36	3.00694E-02	48.31		
	41	533.92	3.41667E-02	28.32		
	42	580.29	5.15278E-02	19.01		
	44	665.81	1.98000E-01	5.56		
	45	703.28	5.50556E-02	16.94	Sum	
	46	720.27	4.45833E-02	29.71		
	47	768.80	6.32611E-01	2.71		
	48	786.32	1.26736E-01	7.46		
	49	806.72	1.32083E-01	7.29		
	50	832.38	4.36944E-02	25.32		
	51	839.54	-2.66666E-03	- 379.1		
	52	934.63	3.40417E-01	4.20		
	54	1155.82	1.34889E-01	6.85		
	55	1208.44	3.62778E-02	21.03		
	56	1238.78	4.71472E-01	2.97		
	57	1281.62	1.03986E-01	7.68		
M	58	1378.41	2.96902E-01	3.38		
m	59	1386.14	6.56292E-02	8.11		
M	60	1402.22	8.65979E-02	6.81		
m	61	1408.70	1.75353E-01	4.56		
	62	1510.04	1.55556E-01	6.06		
	63	1583.98	4.11667E-02	13.50		
	64	1662.01	6.67361E-02	8.79		
	65	1730.40	1.86111E-01	4.24	Sum	
	67	1839.04	-1.22222E-03	- 310.4		
	68	1848.13	1.13639E-01	6.15		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	1.29E+03	8.65E+03	8.65E+03
+	BI-214	609.31	*	44.80	1.61E+05	1.20E+03	1.20E+03

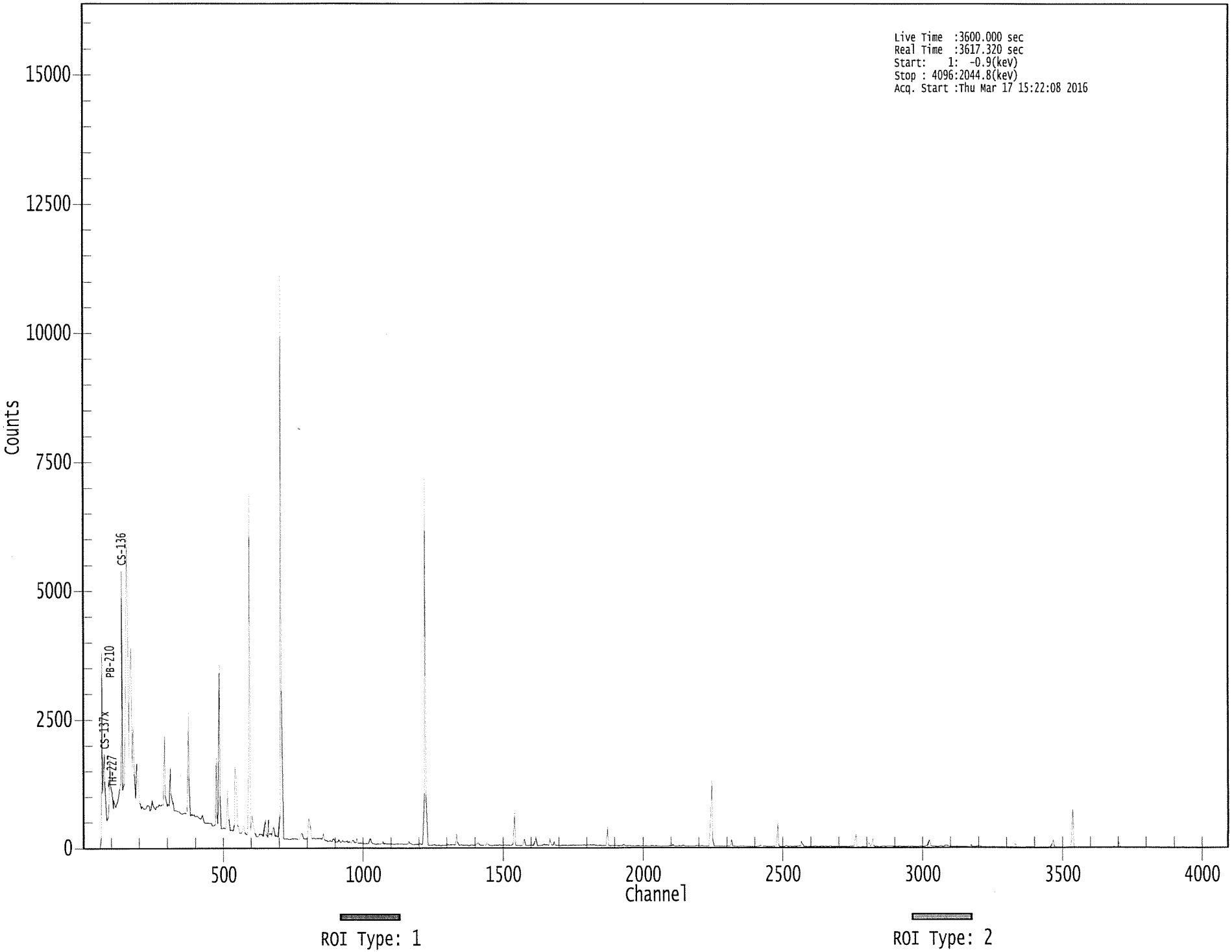
Analysis Report for 588556Dup.Set#4

TetraTech TO#160115-1 Set.#4

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	BI-214	1120.29	*	14.80	1.63E+05	1.20E+03	5.26E+03
		1764.49	*	15.36	1.57E+05		3.29E+03
+	PB-214	295.21	*	18.50	1.66E+05	1.99E+03	2.91E+03
		351.92	*	35.80	1.78E+05		1.99E+03
+	RA-226	186.10	*	3.50	2.05E+05	2.23E+04	2.23E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Analysis Report for 590212 Set#4

TetraTech TO#160115-1 Set#4

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 590212 Set#4
Sample Description	: TetraTech TO#160115-1 Set#4
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/17/2016 12:11:45PM
Acquisition Started	: 3/17/2016 4:23:41PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3628.5 seconds
Dead Time	: 0.78 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7212

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.959	2.81E+05	6.68E+03	
PB-214	0.996	2.92E+05	1.37E+04	
RA-226	0.994	3.43E+05	2.05E+04	

Analysis Report for 590212 Set#4

TetraTech TO#160115-1 Set#4

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:55:48PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.20	3.88250E+00	1.14		
	2	36.45	-3.59722E-02	- 116.6		
	3	46.63	4.60035E-01	8.34		
M	4	50.27	-1.22657E-01	- 26.0		
m	5	53.33	-5.75928E-02	- 27.0		
	6	67.77	2.99056E+00	1.95		
M	7	74.91	9.60354E-01	3.02		
m	8	77.17	2.03506E+00	2.93		
m	9	81.12	4.58072E-01	3.38		
m	10	83.89	1.22837E+00	2.97		
m	11	87.37	6.19305E-01	3.16		
m	12	89.88	1.03669E-01	7.83		
M	13	94.77	-8.13739E-01	- 8.4		
m	14	97.78	-2.84834E-02	- 39.7		
	15	113.13	4.23334E-02	71.26		
	16	122.39	9.41113E-02	48.97		
	17	144.10	1.61319E+00	3.21		
	18	154.31	8.97292E-01	5.59		
	20	210.77	4.08610E-02	99.61		
	21	236.16	-8.55514E-01	- 5.3		
	22	242.16	2.66225E+00	1.90		
M	23	254.04	1.64364E-01	9.40		
m	24	256.39	7.66041E-01	2.81		
m	25	259.05	2.68485E-01	6.04		
M	26	269.62	1.60132E+00	1.67		
m	27	271.40	1.25325E+00	1.95		
m	28	274.67	1.54959E-01	9.40		
M	29	283.77	-3.03058E-01	- 10.6		
m	30	286.22	-7.59696E-02	- 23.6		
m	32	300.17	4.74908E-01	3.76		
m	33	302.89	2.42135E-01	6.07		
	34	324.08	1.05444E-01	24.63		
M	35	330.02	9.58632E-02	24.44		
m	36	334.28	1.40870E-02	27.17		

Analysis Report for 590212 Set#4

TetraTech TO#160115-1 Set#4

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	37	338.51	8.17304E-02	24.46		
M	39	387.09	9.06226E-02	11.98		
m	40	389.06	1.29230E-01	9.11		
M	41	402.08	5.70559E-01	3.02		
m	42	405.21	3.82222E-01	3.97		
	43	427.23	2.99694E-01	10.57		
	44	445.26	6.17361E-02	27.57		
	45	455.24	-2.33055E-02	- 104.5		
	46	480.88	1.73611E-03	912.14	Sum	
	47	487.37	7.03472E-02	27.00		
	48	511.08	2.99771E-01	7.17		
	49	534.07	2.71667E-02	48.68		
	50	580.31	1.33778E-01	12.99		
	52	665.82	3.67917E-01	4.26		
	53	703.39	1.27000E-01	10.80	Sum	
	54	720.35	6.71111E-02	13.89		
	55	768.80	1.05062E+00	2.04		
	56	786.34	2.26181E-01	6.74		
	57	806.67	2.58847E-01	4.98		
	58	832.44	1.03778E-01	12.60		
	59	839.57	-2.94444E-02	- 48.7		
	60	934.58	5.76389E-01	3.18		
	61	964.56	4.75972E-02	20.90		
	62	1052.69	5.39167E-02	18.07		
	64	1155.74	2.50000E-01	5.76		
	65	1208.03	6.75278E-02	13.84		
	66	1238.79	8.29875E-01	2.12		
	67	1281.64	2.13958E-01	5.02		
M	68	1378.37	5.52855E-01	2.43		
m	69	1385.85	1.05353E-01	6.65		
M	70	1402.26	1.79609E-01	4.71		
m	71	1408.68	3.23917E-01	3.33		
	72	1509.94	2.67278E-01	4.70		
	73	1544.18	1.54167E-02	56.34		
	74	1584.05	7.80556E-02	10.71		
	75	1595.03	1.81944E-02	33.46		
	76	1662.12	1.27139E-01	6.54		
	77	1684.44	1.99444E-02	25.26		
	78	1730.39	3.23278E-01	3.26	Sum	
	80	1839.18	-3.01944E-02	- 21.6		
	81	1848.13	1.77597E-01	5.02		

Analysis Report for 590212 Set#4

TetraTech TO#160115-1 Set#4

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

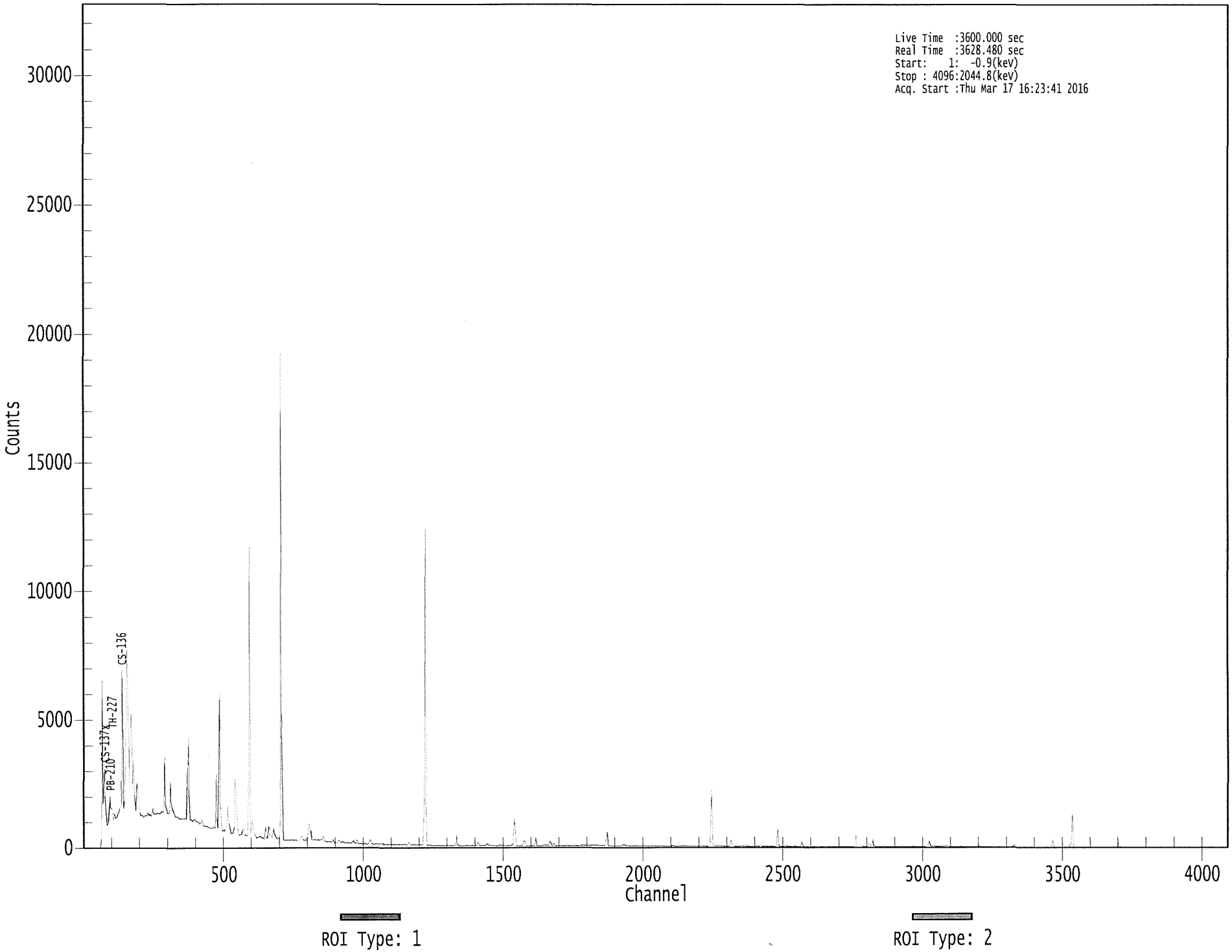
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	3.78E+03	1.14E+04	1.14E+04
+	BI-214	609.31	*	44.80	2.79E+05	1.86E+03	1.86E+03
		1120.29	*	14.80	2.81E+05		8.13E+03
		1764.49	*	15.36	2.81E+05		4.43E+03
+	PB-214	295.21	*	18.50	2.82E+05	2.86E+03	3.83E+03
		351.92	*	35.80	3.06E+05		2.86E+03
+	RA-226	186.10	*	3.50	3.43E+05	2.74E+04	2.74E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Analysis Report for 590213 Set#4

TetraTech TO#160115-1 Set#4

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 590213 Set#4
Sample Description	: TetraTech TO#160115-1 Set#4
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/17/2016 12:13:57PM
Acquisition Started	: 3/17/2016 5:28:55PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3612.7 seconds
Dead Time	: 0.35 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7210

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/Each)	Wt mean Activity Uncertainty	Comments
BI-214	0.961	1.16E+05	2.90E+03	
PB-214	0.996	1.23E+05	5.80E+03	
RA-226	0.993	1.49E+05	9.48E+03	

Analysis Report for 590213 Set#4

TetraTech TO#160115-1 Set#4

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:55:17PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.17	1.68674E+00	1.79		
	2	36.35	7.55139E-02	34.91		
	3	46.60	3.77604E-01	7.34		
	4	50.22	-4.29167E-02	- 49.1		
	5	67.78	2.20322E+00	1.88		
M	6	74.90	3.82629E-01	5.57		
m	7	77.17	8.28857E-01	5.45		
m	8	81.14	1.80694E-01	6.05		
m	9	83.89	4.94818E-01	5.51		
m	10	87.36	2.28301E-01	5.81		
m	11	89.83	3.24092E-02	15.07		
M	12	94.80	-3.72032E-01	- 12.2		
m	13	97.60	-1.59540E-02	- 42.4		
	14	144.16	6.55778E-01	4.98		
	15	154.31	4.65667E-01	6.78		
	17	236.13	-4.62847E-01	- 7.1		
	18	242.15	1.24081E+00	2.41		
M	19	256.39	3.82562E-01	3.89		
m	20	258.99	1.12936E-01	9.57		
M	21	269.64	6.90987E-01	2.51		
m	22	271.43	5.44096E-01	2.92		
	23	283.84	1.47000E-01	13.62		
m	25	300.15	2.14946E-01	5.13		
m	26	302.74	1.06768E-01	8.44		
	27	324.12	8.35556E-02	17.52		
	28	330.11	6.71528E-02	24.45		
	29	338.53	7.94583E-02	16.73		
M	31	402.10	2.59286E-01	4.40		
m	32	405.13	1.72046E-01	5.81		
	33	427.43	9.56667E-02	17.74		
	34	480.56	8.43055E-03	105.24		
	35	487.38	2.22778E-02	51.28		
	36	511.31	1.14619E-01	11.89		
	37	580.47	1.84028E-02	41.11		

Analysis Report for 590213 Set#4
TetraTech TO#160115-1 Set#4

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	39	665.86	1.39931E-01	6.57		
	40	703.29	4.18889E-02	22.98	Sum	
	41	720.26	3.02778E-02	25.08		
	42	768.82	4.25861E-01	3.29		
	43	786.29	9.80556E-02	9.59		
	44	806.71	1.08056E-01	7.50		
	45	832.50	4.37778E-02	19.04		
	46	839.52	-1.20833E-02	- 85.6		
	47	934.66	2.38972E-01	4.50		
	48	1052.62	1.35278E-02	42.53		
	50	1155.84	7.77778E-02	10.39		
	51	1208.41	3.09444E-02	19.62		
	52	1238.80	3.43500E-01	3.30		
	53	1281.64	8.99306E-02	8.36		
M	54	1378.39	2.43171E-01	3.69		
m	55	1386.15	4.43727E-02	9.85		
M	56	1402.47	6.99369E-02	7.53		
m	57	1408.70	1.26810E-01	5.40		
	58	1509.99	1.09778E-01	9.16		
	59	1544.44	6.11111E-03	70.98		
	60	1662.14	5.23333E-02	9.52		
	61	1730.41	1.35583E-01	5.13	Sum	
	63	1848.29	7.79722E-02	7.43		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	7.25E+02	7.31E+03	7.31E+03
+	BI-214	609.31	*	44.80	1.16E+05	1.03E+03	1.03E+03
		1120.29	*	14.80	1.14E+05		5.19E+03
		1764.49	*	15.36	1.17E+05		2.47E+03
+	PB-214	295.21	*	18.50	1.19E+05	1.69E+03	2.37E+03
		351.92	*	35.80	1.27E+05		1.69E+03
+	RA-226	186.10	*	3.50	1.49E+05	1.72E+04	1.72E+04

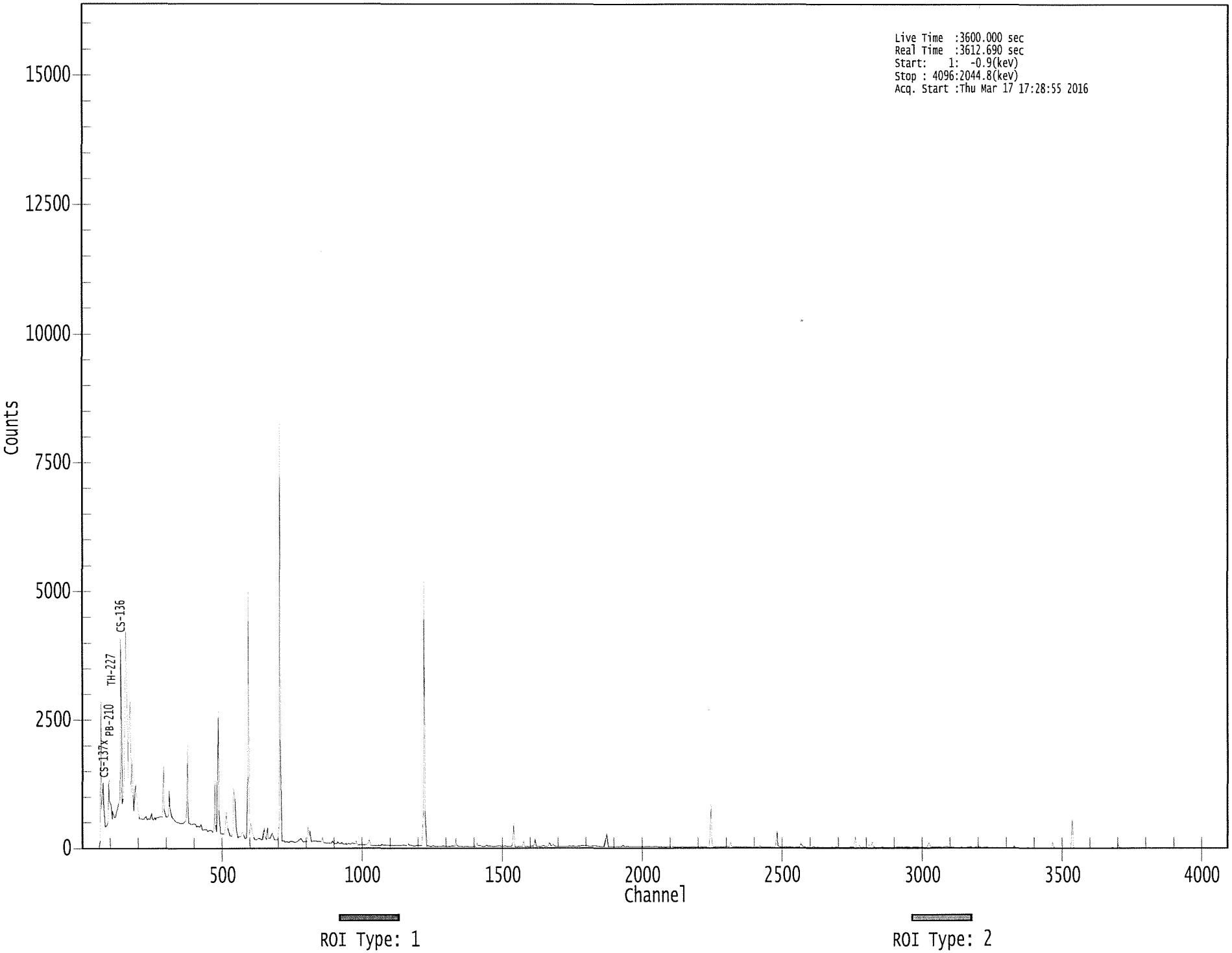
Analysis Report for 590213 Set#4

TetraTech TO#160115-1 Set#4

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Analysis Report for 590214 Set#4

TetraTech TO#160115-1 Set#4

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 590214 Set#4
Sample Description	: TetraTech TO#160115-1 Set#4
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/17/2016 12:23:53PM
Acquisition Started	: 3/17/2016 6:30:40PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3603.2 seconds
Dead Time	: 0.09 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7208

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.947	1.42E+04	4.89E+02	
PB-214	0.996	1.65E+04	8.19E+02	
RA-226	0.998	6.83E+04	4.54E+03	

Analysis Report for 590214 Set#4

TetraTech TO#160115-1 Set#4

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:54:38PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	46.67	2.32156E-02	68.39		
M	2	50.13	9.36955E-02	17.48		
m	3	53.37	1.98046E-02	19.63		
	4	63.32	2.77862E-01	8.35		
	5	67.78	1.59042E-01	13.37		
M	6	74.82	-3.90776E-02	- 21.9		
m	7	77.20	-1.17089E-01	- 20.7		
M	8	81.21	1.16745E-01	8.03		
m	9	83.89	2.93533E-01	7.61		
M	10	92.72	6.23138E-01	2.75		
m	11	94.66	1.81217E-01	6.11		
	12	144.14	2.14694E-01	7.53		
	13	154.33	1.45806E-01	10.37		
	15	236.17	6.96111E-02	22.76		
	16	242.16	7.05556E-02	15.87		
	17	256.40	1.34056E-01	9.38		
M	18	269.61	2.28949E-01	4.08		
m	19	271.39	1.72820E-01	4.81		
	20	286.21	1.94167E-02	29.73		
m	22	300.18	7.48081E-02	7.79		
m	23	302.88	4.20891E-02	10.59		
	24	324.10	2.86667E-02	25.88		
	25	330.16	2.03889E-02	38.51		
	26	338.51	3.02500E-02	17.81		
M	28	402.07	7.24489E-02	7.55		
m	29	405.08	4.28480E-02	9.94		
	30	427.33	1.79444E-02	31.13		
	32	768.79	7.19444E-02	8.16		
	33	832.42	1.10833E-02	33.96		
	34	934.71	2.67778E-02	14.96		
	35	1001.68	3.00000E-02	12.59		
	37	1238.73	4.20000E-02	9.51		
	38	1378.49	2.88194E-02	13.16		
	39	1509.94	1.36667E-02	20.82		

Analysis Report for 590214 Set#4

TetraTech TO#160115-1 Set#4

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

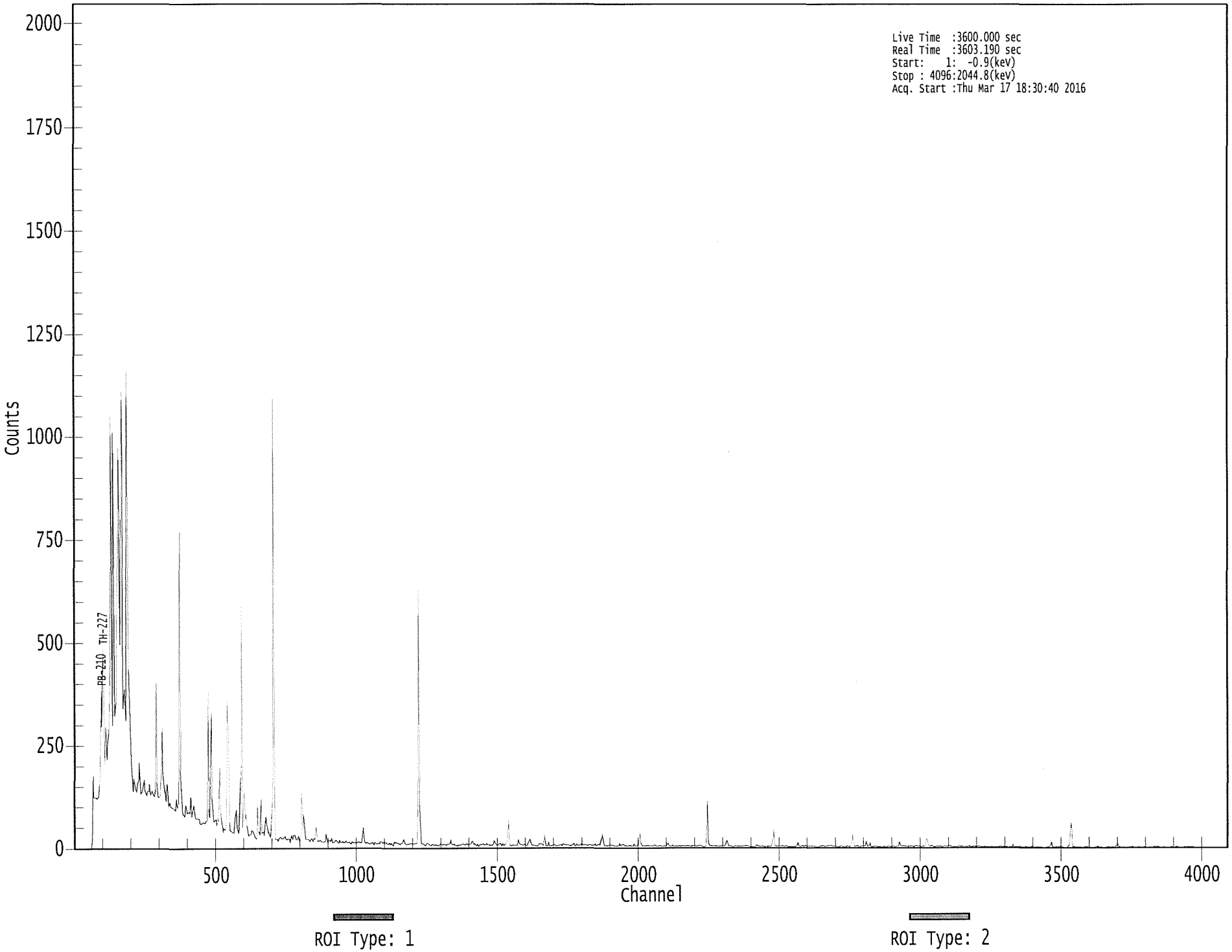
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	2.70E+03	4.00E+03	4.00E+03
+	BI-214	609.31	*	44.80	1.41E+04	4.51E+02	4.51E+02
		1120.29	*	14.80	1.50E+04		1.38E+03
		1764.49	*	15.36	1.39E+04		1.31E+03
+	PB-214	295.21	*	18.50	1.54E+04	6.57E+02	1.05E+03
		351.92	*	35.80	1.79E+04		6.57E+02
+	RA-226	186.10	*	3.50	6.83E+04	8.63E+03	8.63E+03

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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011196

Apex™

Analysis Report for 591000 Set#4

TetraTech TO#160115-1 Set#4

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 591000 Set#4
Sample Description	: TetraTech TO#160115-1 Set#4
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/17/2016 12:25:37PM
Acquisition Started	: 3/17/2016 7:33:57PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3614.5 seconds
Dead Time	: 0.40 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7206

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.949	1.39E+05	3.43E+03	
PB-214	0.995	1.50E+05	7.08E+03	
RA-226	0.994	1.71E+05	1.09E+04	

Analysis Report for 591000 Set#4

TetraTech TO#160115-1 Set#4

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:54:03PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.18	1.74333E+00	1.74		
	2	36.40	-6.89860E-02	- 44.9		
	3	46.61	6.17257E-01	5.18		
M	4	50.26	-1.37114E-01	- 18.3		
m	5	53.30	-1.31220E-01	- 18.8		
	6	67.77	2.01722E+00	2.09		
M	7	74.92	5.79588E-01	4.18		
m	8	77.17	1.20810E+00	4.08		
m	9	81.14	1.84983E-01	5.14		
m	10	83.88	5.26730E-01	4.21		
m	11	87.33	3.47218E-01	4.38		
m	12	89.85	8.48828E-02	7.62		
	13	94.76	-1.43236E-01	- 21.0		
	14	144.12	6.86833E-01	5.49		
	15	154.28	4.50778E-01	7.34		
	17	236.16	-4.94556E-01	- 6.0		
	18	242.17	1.39689E+00	2.67		
M	19	256.42	3.38867E-01	4.30		
m	20	259.13	1.38287E-01	8.20		
M	21	269.67	6.11743E-01	2.78		
m	22	271.42	5.03312E-01	3.16		
m	24	300.20	1.85110E-01	6.15		
m	25	302.98	1.05133E-01	9.54		
	26	324.17	2.47500E-02	80.21		
	27	330.08	3.58889E-02	50.69		
	28	338.57	7.16944E-02	20.28		
	30	389.22	1.28472E-01	13.68		
M	31	402.11	2.30965E-01	4.98		
m	32	405.24	1.56101E-01	6.61		
	33	427.39	3.89722E-02	31.44		
	34	462.05	-2.56944E-03	- 554.9		
	35	480.80	6.11111E-03	204.13	Sum	
	36	487.38	1.28611E-02	94.40		
	38	665.88	1.79236E-01	6.40		

Analysis Report for 591000 Set#4

TetraTech TO#160115-1 Set#4

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	39	703.34	6.06111E-02	17.87	Sum	
	40	720.35	4.07500E-02	26.48		
	41	768.82	5.21194E-01	2.98		
	42	786.38	9.98333E-02	9.02		
	43	806.70	1.17042E-01	10.73		
	44	832.45	2.85000E-02	31.76		
	45	839.47	-1.00000E-02	- 123.9		
	46	934.68	2.81806E-01	4.72		
	48	1155.90	1.39250E-01	7.94		
	49	1208.47	4.68889E-02	17.05		
	50	1238.96	4.44194E-01	2.78		
	51	1281.74	1.19194E-01	7.46		
M	52	1378.44	2.76517E-01	3.49		
m	53	1386.07	4.41146E-02	10.51		
M	54	1402.20	6.73204E-02	7.80		
m	55	1408.82	1.53011E-01	4.92		
	56	1510.03	1.20278E-01	7.11		
	57	1584.27	3.34444E-02	16.10		
	58	1662.32	5.85417E-02	9.15		
	59	1730.48	1.73889E-01	4.68	Sum	
	61	1838.62	1.01389E-02	41.85		
	62	1848.22	9.51111E-02	7.09		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	-4.69E+02	8.04E+03	8.04E+03
+	BI-214	609.31	*	44.80	1.38E+05	1.04E+03	1.04E+03
		1120.29	*	14.80	1.44E+05		5.25E+03
		1764.49	*	15.36	1.37E+05		2.81E+03
+	PB-214	295.21	*	18.50	1.48E+05	2.22E+03	2.65E+03
		351.92	*	35.80	1.53E+05		2.22E+03
+	RA-226	186.10	*	3.50	1.71E+05	2.13E+04	2.13E+04

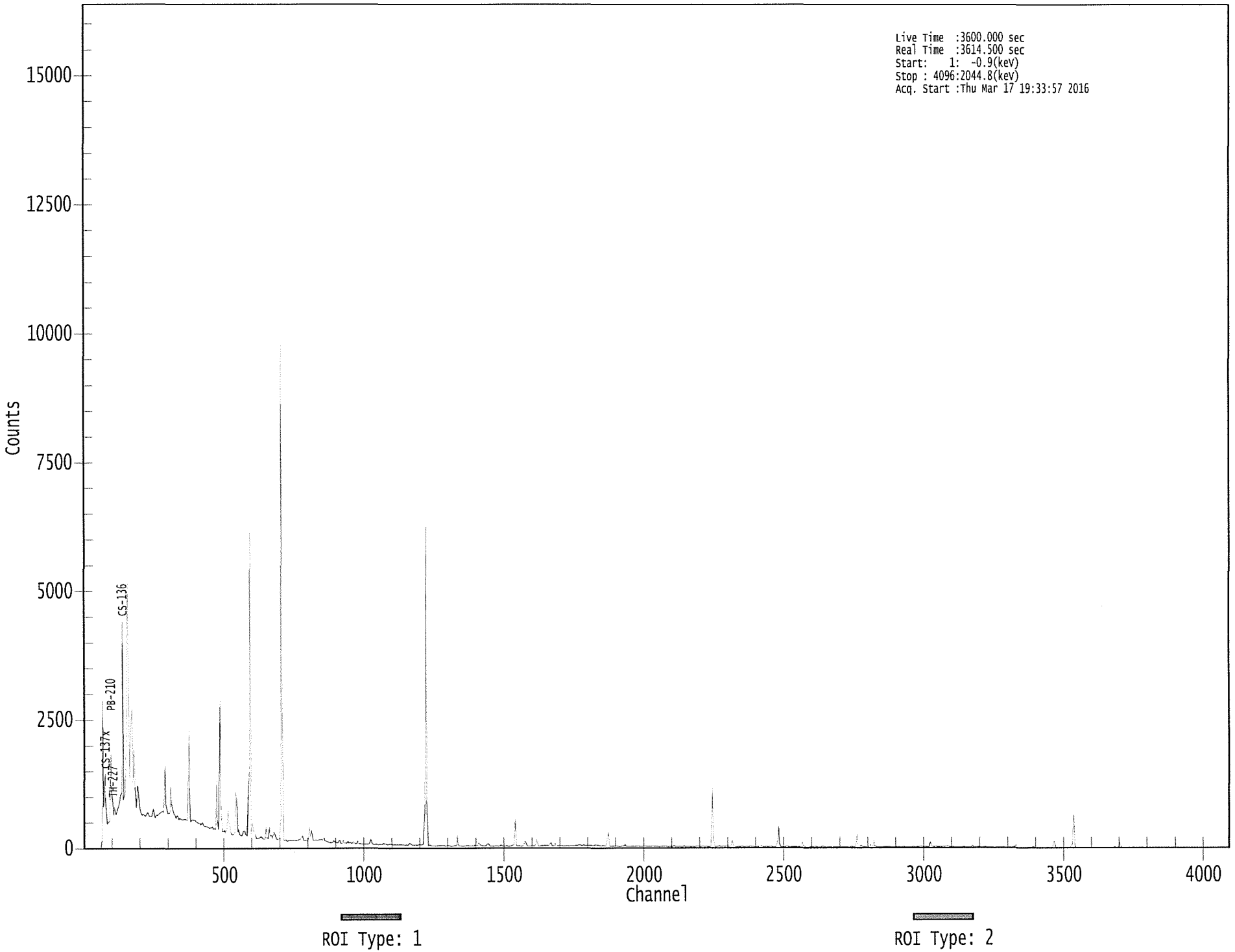
Analysis Report for 591000 Set#4

TetraTech TO#160115-1 Set#4

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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011201

Southwest Research Institute, Division 1, Radiochemistry

011202

Gamma Spectroscopy Summary Sheet (1 sig)

Client: Tetra Tech (Set#5)
Task Order: 160115-1
Prep Page: N/A
Prep Date: N/A
Notes: SR 4/4/16 RSpis 4/19/16

Project #: 21431.01.001
SRR: 56591, 56639, 56785, 56876
TPU sig factor: 1
Units: g

Sample ID 588049 | Sample # 7204 | Sample Size 1 Each | Date Analyzed 3/17/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	66.795	100.0%	1	3.24E+03	7.78E+01	2.47E+01	1.91E+01		
^{214}Pb	66.795	100.0%	1	3.22E+03	1.52E+02	3.98E+01	1.78E+01		
^{226}Ra	66.795	100.0%	1	3.56E+03	2.18E+02	3.34E+02	8.41E+01		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 588049D | Sample # 7202 | Sample Size 1 Each | Date Analyzed 3/17/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RPDs	DER	
^{214}Bi	67.687	100.0%	1	2.82E+03	6.83E+01	2.55E+01	1.78E+01		13.9	4.1	Fail
^{214}Pb	67.687	100.0%	1	2.83E+03	1.33E+02	3.92E+01	1.68E+01		12.9	1.9	Pass
^{226}Ra	67.687	100.0%	1	3.06E+03	1.89E+02	3.15E+02	7.88E+01		15.3	1.8	Pass

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.
Duplicate Evaluation = (Sample-Duplicate) / sqrt ((TPUsample^2) + (TPUdup^2)) # 3

Sample ID 588556 | Sample # 7200 | Sample Size 1 Each | Date Analyzed 3/17/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	64.727	100.0%	1	1.92E+03	4.78E+01	2.27E+01	1.51E+01		
^{214}Pb	64.727	100.0%	1	1.97E+03	9.29E+01	2.41E+01	1.35E+01		
^{226}Ra	64.727	100.0%	1	2.31E+03	1.50E+02	3.02E+02	7.40E+01		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 590212 | Sample # 7198 | Sample Size 1 Each | Date Analyzed 3/18/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	56.844	100.0%	1	4.24E+03	1.01E+02	2.48E+01	2.31E+01		
^{214}Pb	56.844	100.0%	1	4.55E+03	2.14E+02	5.16E+01	2.34E+01		
^{226}Ra	56.844	100.0%	1	5.26E+03	3.19E+02	4.78E+02	1.18E+02		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Note: Ra 226 is not reported from this spreadsheet. SR 4/20/16

Southwest Research Institute, Division 1, Radiochemistry

011203

Gamma Spectroscopy Summary Sheet (1 sig)

Client: Tetra Tech (Set#5)
Task Order: 160115-1
Prep Page: N/A
Prep Date: N/A

Project #: 21431.01.001
SRR: 56591, 56639, 56785, 56876
TPU sig factor: 1
Units: g

Notes: _____

Sample ID 590213 | Sample # 7196 | Sample Size 1 Each | Date Analyzed 3/18/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	56.325	100.0%	1	2.04E+03	5.09E+01	1.84E+01	1.62E+01		
^{214}Pb	56.325	100.0%	1	2.11E+03	9.99E+01	3.37E+01	1.55E+01		
^{226}Ra	56.325	100.0%	1	2.71E+03	1.73E+02	3.21E+02	8.04E+01		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 590214 | Sample # 7194 | Sample Size 1 Each | Date Analyzed 3/18/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	61.067	100.0%	1	1.86E+02	6.70E+00	7.46E+00	4.81E+00		
^{214}Pb	61.067	100.0%	1	2.08E+02	1.06E+01	1.01E+01	4.43E+00		
^{226}Ra	61.067	100.0%	1	9.52E+02	6.51E+01	1.32E+02	3.69E+01		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 591000 | Sample # 7192 | Sample Size 1 Each | Date Analyzed 3/18/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	63.786	100.0%	1	2.59E+03	6.31E+01	1.84E+01	1.71E+01		
^{214}Pb	63.786	100.0%	1	2.69E+03	1.27E+02	3.23E+01	1.63E+01		
^{226}Ra	63.786	100.0%	1	3.17E+03	1.98E+02	3.43E+02	8.49E+01		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Apex™

Analysis Report for 588049 Set#5

Tetra Tech TO#160115-1 Set#5

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 588049 Set#5
Sample Description	: Tetra Tech TO#160115-1 Set#5
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/17/2016 8:47:48PM
Acquisition Started	: 3/17/2016 8:48:02PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3621.6 seconds
Dead Time	: 0.60 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7204

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.955	2.17E+05	5.20E+03	
PB-214	0.996	2.15E+05	1.01E+04	
RA-226	0.993	2.38E+05	1.45E+04	

Analysis Report for 588049 Set#5

Tetra Tech TO#160115-1 Set#5

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:53:19PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.22	1.97983E+00	1.72		
	2	36.44	-6.66667E-03	- 518.8		
	3	46.63	1.87479E-01	17.96		
	4	67.76	8.87056E-01	5.22		
M	5	74.89	3.22698E-01	6.40		
m	6	77.18	6.72802E-01	6.30		
M	7	81.10	-3.07114E-02	- 18.3		
m	8	83.84	-5.30109E-01	- 10.5		
m	9	87.31	-2.11902E-01	- 10.7		
	10	94.70	-4.88889E-02	- 75.9		
	11	144.16	9.29181E-01	5.90		
	12	154.33	6.94444E-01	5.54		
	14	210.73	3.74306E-02	102.90		
	15	236.15	-3.80945E-01	- 10.1		
	16	242.15	1.90457E+00	2.23		
M	17	256.40	6.00714E-01	3.25		
m	18	259.07	1.98308E-01	7.36		
M	19	269.61	1.17277E+00	1.95		
m	20	271.41	9.39118E-01	2.23		
m	21	274.69	9.76363E-02	12.86		
M	22	283.80	1.18750E-01	11.08		
m	23	286.25	1.26080E-01	10.53		
m	25	300.22	3.30552E-01	4.27		
m	26	302.88	1.87898E-01	6.76		
	27	324.09	9.40833E-02	23.77		
	28	330.08	1.22500E-01	17.59		
	29	338.52	1.19583E-01	16.90		
	31	389.36	1.71889E-01	12.10		
M	32	402.01	4.08615E-01	3.64		
m	33	405.20	2.61856E-01	4.97		
	34	427.31	1.44278E-01	13.62		
	35	445.18	1.67917E-02	100.82		
	36	454.99	3.93056E-02	35.51		
	37	469.90	2.50000E-03	525.11		

Analysis Report for 588049 Set#5

Tetra Tech TO#160115-1 Set#5

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	38	480.80	2.18056E-02	61.40	Sum	
	39	534.06	4.59445E-02	22.44		
	40	580.43	7.40694E-02	16.50		
	42	665.88	2.72972E-01	4.37		
	43	720.38	6.71667E-02	16.44		
	44	768.81	8.09458E-01	2.36		
	45	786.40	1.85139E-01	6.74		
	46	806.69	2.24611E-01	6.09		
	47	832.47	6.50555E-02	21.33		
	48	839.49	-4.08334E-03	- 260.2		
	49	934.59	4.54611E-01	3.31		
	50	964.63	3.82778E-02	24.07		
	51	1052.47	3.26111E-02	19.94		
	53	1155.89	1.89958E-01	5.60		
	54	1208.40	4.75139E-02	17.15		
	55	1238.81	6.66556E-01	2.51		
	56	1281.60	1.54764E-01	7.26		
M	57	1378.40	4.13996E-01	2.83		
m	58	1386.01	8.18977E-02	7.42		
M	59	1402.24	1.31920E-01	5.49		
m	60	1408.72	2.47935E-01	3.82		
	61	1509.97	2.17833E-01	6.15		
	62	1539.34	2.89861E-02	26.97		
	63	1583.93	5.19167E-02	15.77		
	64	1600.32	1.25000E-02	56.83		
	65	1662.05	9.61389E-02	7.03		
	66	1730.37	2.43792E-01	3.80	Sum	
	68	1839.05	1.42361E-02	28.21		
	69	1848.22	1.82556E-01	4.50		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)

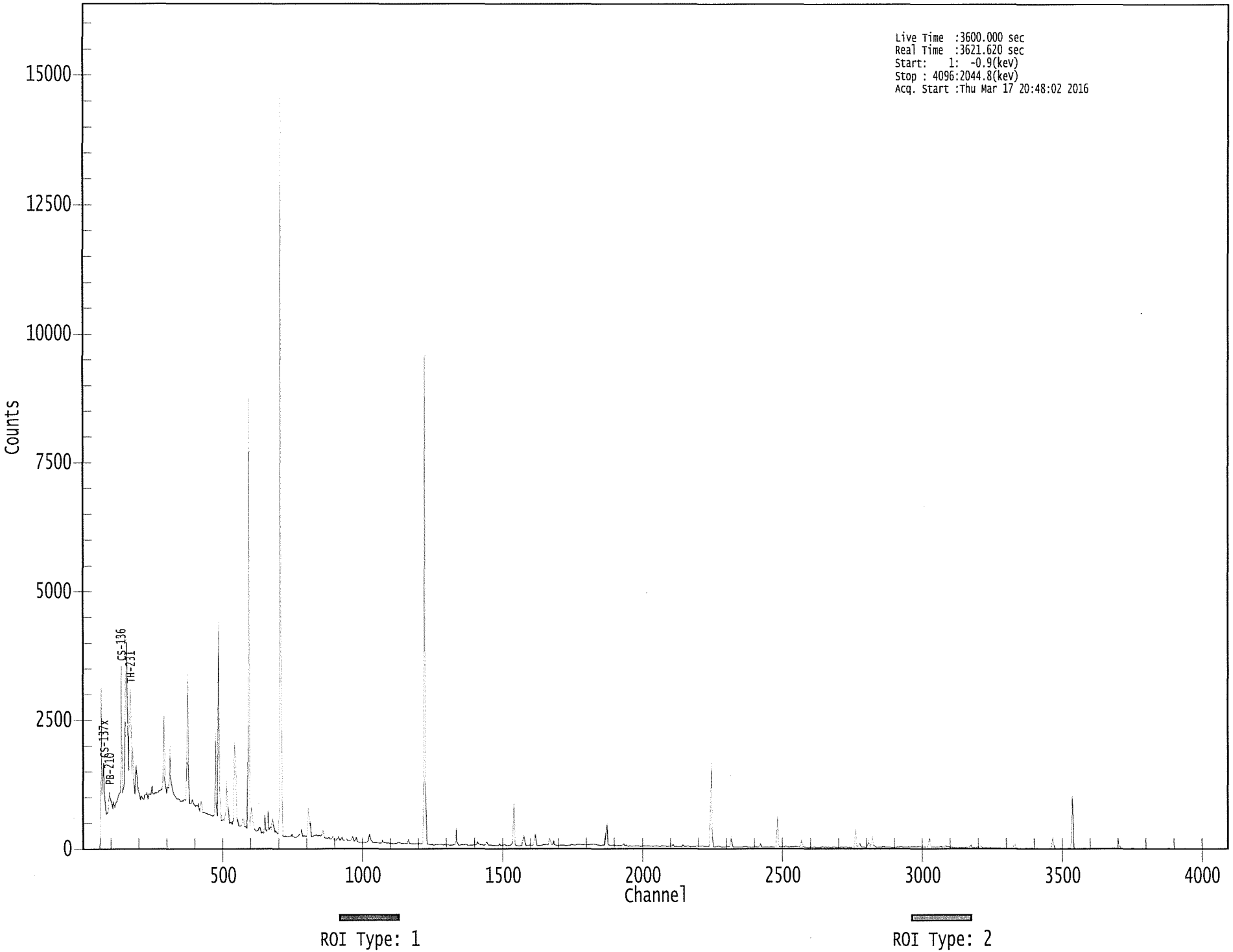
Analysis Report for 588049 Set#5

Tetra Tech TO#160115-1 Set#5

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	3.01E+03	1.01E+04	1.01E+04
+	BI-214	609.31	*	44.80	2.12E+05	1.65E+03	1.65E+03
		1120.29	*	14.80	2.20E+05		4.37E+03
		1764.49	*	15.36	2.18E+05		3.07E+03
+	PB-214	295.21	*	18.50	2.07E+05	2.66E+03	3.37E+03
		351.92	*	35.80	2.26E+05		2.66E+03
+	RA-226	186.10	*	3.50	2.38E+05	2.23E+04	2.23E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 588049D Set#5

Tetra Tech TO#160115-1 Set#5

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 588049D Set#5
Sample Description	: Tetra Tech TO#160115-1 Set#5
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/17/2016 8:48:52PM
Acquisition Started	: 3/17/2016 9:53:17PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3619.4 seconds
Dead Time	: 0.54 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7202

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.955	1.91E+05	4.62E+03	
PB-214	0.996	1.92E+05	9.02E+03	
RA-226	0.994	2.07E+05	1.28E+04	

Analysis Report for 588049D Set#5

Tetra Tech TO#160115-1 Set#5

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:52:48PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.18	1.64486E+00	1.88		
	2	36.46	2.37500E-02	132.18		
	3	46.65	1.56202E-01	20.68		
	4	67.78	9.12097E-01	4.67		
M	5	74.92	4.39862E-01	4.87		
m	6	77.17	8.46694E-01	4.77		
M	7	83.83	-1.17661E+00	- 4.8		
m	8	87.32	-5.67502E-01	- 5.2		
m	9	90.02	-3.81928E-02	- 30.3		
	10	94.82	-9.67779E-02	- 45.9		
	11	113.01	6.02222E-02	46.43		
	12	144.09	9.09444E-01	5.25		
	13	154.32	5.57167E-01	6.08		
	15	236.14	-3.45111E-01	- 10.0		
	16	242.15	1.69578E+00	2.46		
M	17	254.02	1.42591E-01	9.46		
m	18	256.41	4.88295E-01	3.60		
m	19	259.09	1.81456E-01	7.51		
M	20	269.63	1.02672E+00	2.09		
m	21	271.42	8.09609E-01	2.43		
m	22	274.79	1.24168E-01	10.00		
	23	286.26	-5.59553E+00	- 1.0		
m	25	300.19	3.07976E-01	4.52		
m	26	302.93	1.55837E-01	7.51		
	27	324.08	7.19444E-02	32.73		
	28	330.06	1.05875E-01	18.00		
	29	338.52	1.25000E-01	15.14		
M	31	402.05	3.91697E-01	3.67		
m	32	405.15	2.51227E-01	4.98		
	33	427.25	1.03111E-01	17.13		
	34	445.06	4.72500E-02	27.04		
	35	455.13	2.52222E-02	60.10		
	36	462.22	3.52776E-03	465.72		
	37	480.75	-1.09721E-03	-1215.5	Sum	

Analysis Report for 588049D Set#5

Tetra Tech TO#160115-1 Set#5

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	38	487.36	4.10833E-02	45.99		
	39	580.41	3.42778E-02	35.10		
	41	665.86	2.33625E-01	5.41		
	42	703.33	7.02778E-02	17.19	Sum	
	43	720.36	9.15833E-02	13.91		
	44	768.83	7.29319E-01	2.66		
	45	786.29	1.51556E-01	7.13		
	46	806.71	1.69458E-01	7.89		
	47	832.47	5.93611E-02	20.41		
	48	839.32	1.53889E-02	65.76		
	49	934.56	3.90972E-01	3.67		
	50	964.72	3.96528E-02	25.98		
	51	1070.46	1.62500E-02	41.53		
	53	1155.82	1.78569E-01	5.35		
	54	1208.43	4.03056E-02	16.45		
	55	1238.81	5.78139E-01	2.47		
	56	1281.64	1.32667E-01	6.46		
M	57	1378.39	3.47556E-01	3.09		
m	58	1386.19	7.55920E-02	7.57		
M	59	1402.36	1.23267E-01	5.75		
m	60	1408.74	2.27374E-01	3.97		
	61	1509.97	1.94625E-01	5.54		
	62	1539.18	2.43056E-02	26.70		
	63	1583.95	5.44444E-02	15.12		
	64	1662.16	7.93056E-02	7.98		
	65	1730.35	2.25000E-01	4.08	Sum	
	67	1839.46	1.70000E-02	24.11		
	68	1848.16	1.26389E-01	6.35		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	4.27E+02	9.18E+03	9.18E+03
+	BI-214	609.31	*	44.80	1.87E+05	1.73E+03	1.73E+03

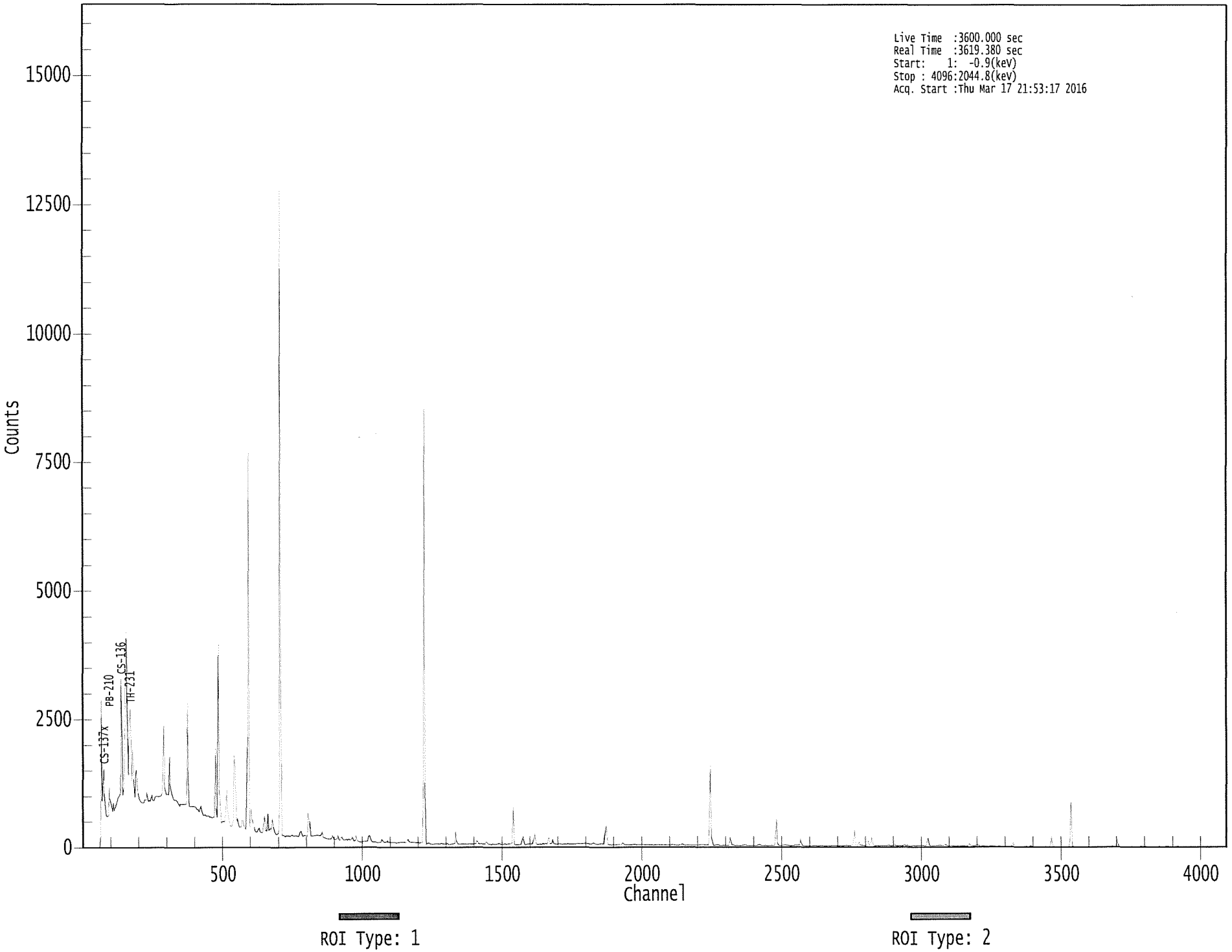
Analysis Report for 588049D Set#5

Tetra Tech TO#160115-1 Set#5

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	BI-214	1120.29	*	14.80	1.96E+05	1.73E+03	5.50E+03
		1764.49	*	15.36	1.91E+05		3.46E+03
+	PB-214	295.21	*	18.50	1.84E+05	2.65E+03	3.18E+03
		351.92	*	35.80	2.01E+05		2.65E+03
+	RA-226	186.10	*	3.50	2.07E+05	2.13E+04	2.13E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Analysis Report for 588556 Set#5

Tetra Tech TO#160115-1 Set#5

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 588556 Set#5
Sample Description	: Tetra Tech TO#160115-1 Set#5
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/17/2016 8:49:38PM
Acquisition Started	: 3/17/2016 10:54:47PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3613.6 seconds
Dead Time	: 0.38 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7200

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.956	1.24E+05	3.10E+03	
PB-214	0.996	1.27E+05	6.02E+03	
RA-226	0.994	1.50E+05	9.69E+03	

Analysis Report for 588556 Set#5

Tetra Tech TO#160115-1 Set#5

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:52:12PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.21	1.32861E+00	2.10		
	2	36.43	-4.16667E-04	-6429.3		
	3	46.55	1.49035E-01	18.68		
	4	50.06	-1.64861E-02	- 122.1		
	5	67.76	9.95500E-01	4.29		
M	6	74.91	2.81010E-01	6.91		
m	7	77.18	5.42212E-01	6.80		
M	8	81.08	-3.24888E-02	- 16.1		
m	9	83.84	-8.67427E-01	- 5.9		
m	10	87.32	-3.80973E-01	- 6.0		
	11	94.73	-4.91667E-02	- 63.4		
	12	122.42	5.12084E-02	42.63		
	13	144.12	6.49708E-01	4.56		
	14	154.31	4.36639E-01	8.51		
	16	210.87	4.49306E-02	61.00		
	17	236.17	-2.45958E-01	- 12.9		
	18	242.16	1.26581E+00	2.29		
M	19	256.36	3.95643E-01	3.89		
m	20	258.96	9.76247E-02	10.99		
M	21	269.60	7.48389E-01	2.44		
m	22	271.38	6.29791E-01	2.71		
	23	286.43	3.70694E-02	37.69		
m	25	300.21	2.28753E-01	4.97		
m	26	302.86	1.28375E-01	7.92		
	27	324.05	-9.16667E-03	- 250.3		
	28	330.11	5.36945E-02	32.54		
	29	338.55	8.53333E-02	15.97		
M	31	402.02	2.56420E-01	4.60		
m	32	405.22	1.66854E-01	6.20		
	33	427.37	5.65833E-02	27.52		
	34	445.17	4.94444E-02	22.64		
	35	580.34	4.52778E-02	19.42		
	37	665.91	1.50375E-01	6.86		
	38	768.83	4.81806E-01	3.25		

Analysis Report for 588556 Set#5

Tetra Tech TO#160115-1 Set#5

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	39	786.43	9.77639E-02	8.64		
	40	806.65	9.53333E-02	9.28		
	41	832.35	4.55556E-02	22.45		
	42	839.58	4.99997E-04	1643.14		
	43	934.63	2.47361E-01	4.49		
	44	1052.59	2.77778E-02	22.32		
	46	1155.78	9.86667E-02	8.05		
	47	1238.89	3.82361E-01	3.09		
	48	1281.68	9.25972E-02	9.52		
M	49	1378.38	2.28777E-01	3.87		
m	50	1386.18	4.39316E-02	10.33		
M	51	1402.30	7.92982E-02	7.00		
m	52	1408.65	1.25947E-01	5.50		
	53	1509.99	1.02750E-01	7.54		
	54	1583.94	5.09722E-02	12.61		
	55	1662.17	4.93611E-02	9.78		
	56	1730.42	1.53125E-01	4.80	Sum	
	58	1848.28	9.30556E-02	6.59		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

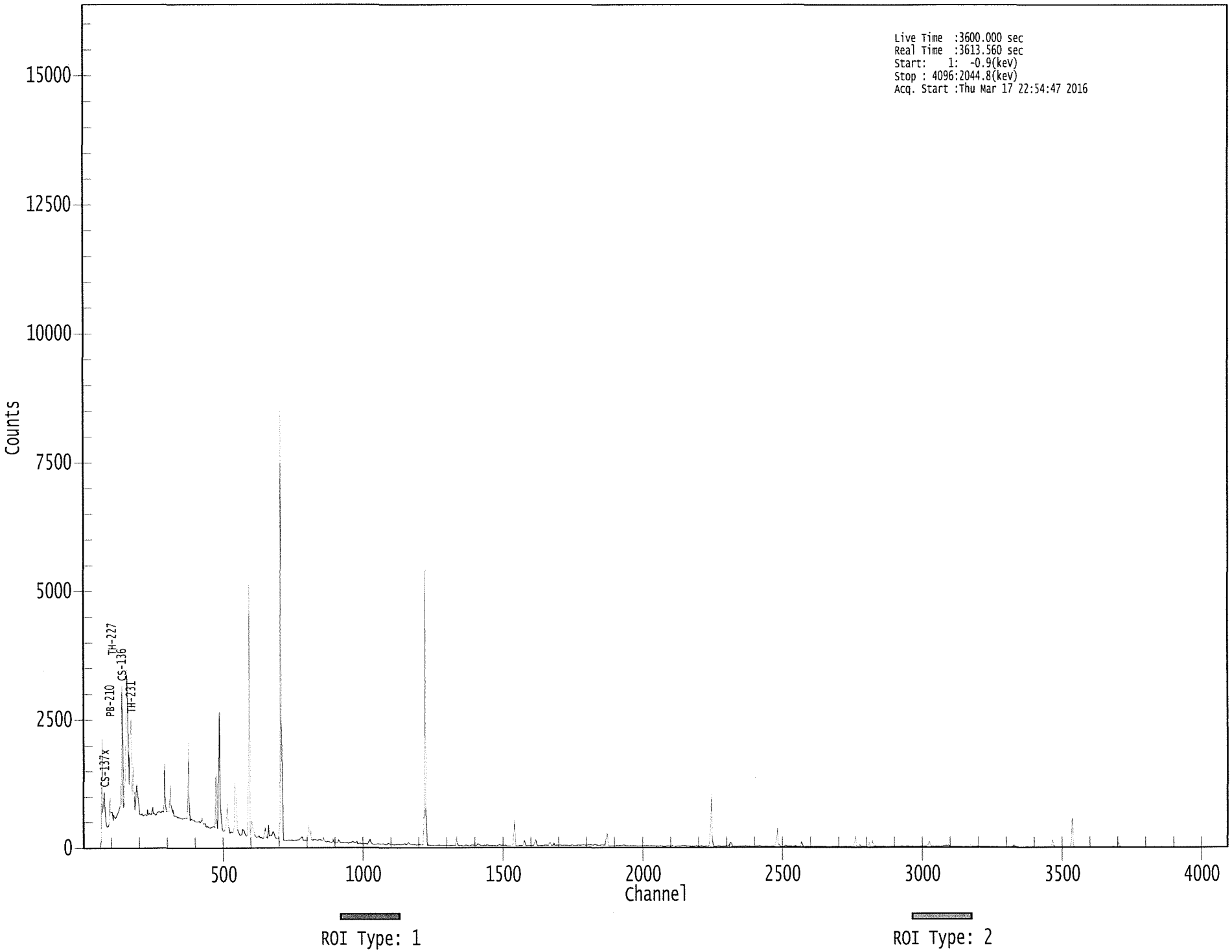
	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	-4.27E+02	7.60E+03	7.60E+03
+	BI-214	609.31	*	44.80	1.22E+05	1.47E+03	1.47E+03
		1120.29	*	14.80	1.27E+05		4.88E+03
		1764.49	*	15.36	1.25E+05		2.96E+03
+	PB-214	295.21	*	18.50	1.22E+05	1.56E+03	2.60E+03
		351.92	*	35.80	1.34E+05		1.56E+03
+	RA-226	186.10	*	3.50	1.50E+05	1.95E+04	1.95E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

Analysis Report for 588556 Set#5

Tetra Tech TO#160115-1 Set#5

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Apex™

Analysis Report for 590212 Set#5

Tetra Tech TO#160115-1 Set#5

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 590212 Set#5
Sample Description	: Tetra Tech TO#160115-1 Set#5
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/17/2016 9:09:47PM
Acquisition Started	: 3/18/2016 12:48:54AM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3624.6 seconds
Dead Time	: 0.68 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7198

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/Each)	Wt mean Activity Uncertainty	Comments
BI-214	0.953	2.41E+05	5.77E+03	
PB-214	0.995	2.58E+05	1.21E+04	
RA-226	0.994	2.99E+05	1.81E+04	

Analysis Report for 590212 Set#5

Tetra Tech TO#160115-1 Set#5

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:51:39PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.16	2.93722E+00	1.34		
	2	36.40	-5.26394E-03	- 764.6		
	3	46.66	2.46146E-01	15.14		
	4	50.23	7.45836E-03	360.47		
	5	67.76	2.03949E+00	2.56		
M	6	74.91	6.63022E-01	3.99		
m	7	77.18	1.34835E+00	3.92		
m	8	81.15	3.33885E-01	4.26		
m	9	83.88	8.80625E-01	3.95		
m	10	87.37	4.07251E-01	4.14		
m	11	89.84	4.78910E-02	12.22		
	12	94.73	-5.91667E-02	- 69.7		
	13	144.14	1.35194E+00	3.11		
	14	154.31	8.80111E-01	5.07		
	16	210.72	6.90278E-02	43.85		
	17	236.17	-2.36389E-01	- 16.3		
	18	242.18	2.17468E+00	2.37		
M	19	256.35	7.38969E-01	2.87		
m	20	259.11	2.20610E-01	7.04		
M	21	269.64	1.41140E+00	1.74		
m	22	271.41	1.15120E+00	1.98		
m	23	274.76	1.24688E-01	10.64		
M	24	283.77	-3.51758E-01	- 10.7		
m	25	286.20	-7.96313E-02	- 25.7		
m	27	300.18	4.07571E-01	3.84		
m	28	302.92	2.43642E-01	5.71		
	29	324.13	-2.94444E-02	- 108.1		
M	30	330.10	8.70285E-02	25.44		
m	31	334.49	1.93235E-02	26.77		
m	32	338.61	7.07036E-02	25.47		
	34	389.14	1.93625E-01	13.31		
M	35	402.08	5.28979E-01	3.07		
m	36	405.18	3.72375E-01	3.89		
	37	427.38	1.46583E-01	12.57		

Analysis Report for 590212 Set#5

Tetra Tech TO#160115-1 Set#5

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	38	445.38	4.19166E-02	44.50		
	39	454.97	2.24445E-02	76.51		
	40	469.77	-7.05556E-03	- 167.7		
	41	480.84	-3.32639E-02	- 54.5	Sum	
	42	487.34	6.07223E-02	27.99		
	43	511.09	2.20202E-01	8.26		
	44	580.44	7.76111E-02	20.38		
	46	665.86	2.79861E-01	4.49		
	47	683.91	1.57083E-02	53.97		
	48	703.44	1.13778E-01	12.09	Sum	
	49	720.30	7.08194E-02	19.15		
	50	768.84	9.33417E-01	2.31		
	51	786.47	1.94778E-01	8.37		
	52	806.68	2.04722E-01	6.17		
	53	832.47	1.08444E-01	11.20		
	54	839.54	-2.49722E-02	- 60.8		
	55	934.63	4.63722E-01	3.60		
	56	1052.64	3.64583E-02	27.23		
	57	1070.50	2.71944E-02	29.48		
	59	1134.49	3.75000E-02	25.97		
	60	1155.96	1.95222E-01	6.08		
	61	1208.36	4.77222E-02	15.94		
	62	1238.90	7.45056E-01	2.36		
	63	1281.74	1.64792E-01	6.24		
M	64	1378.49	4.81026E-01	2.60		
m	65	1385.94	8.50194E-02	7.40		
M	66	1402.34	1.46093E-01	5.27		
m	67	1408.78	2.56145E-01	3.77		
	68	1510.01	2.35278E-01	5.32		
	69	1539.34	3.20556E-02	26.19		
	70	1583.86	6.97222E-02	9.69		
	71	1600.16	1.11944E-02	58.35		
	72	1662.20	9.79444E-02	6.81		
	73	1684.90	1.34722E-02	28.21		
	74	1730.45	2.72361E-01	3.48	Sum	
	76	1839.52	-2.92361E-02	- 18.8		
	77	1848.35	1.67556E-01	4.87		
	78	1873.83	1.81111E-02	22.34		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

Analysis Report for 590212 Set#5

Tetra Tech TO#160115-1 Set#5

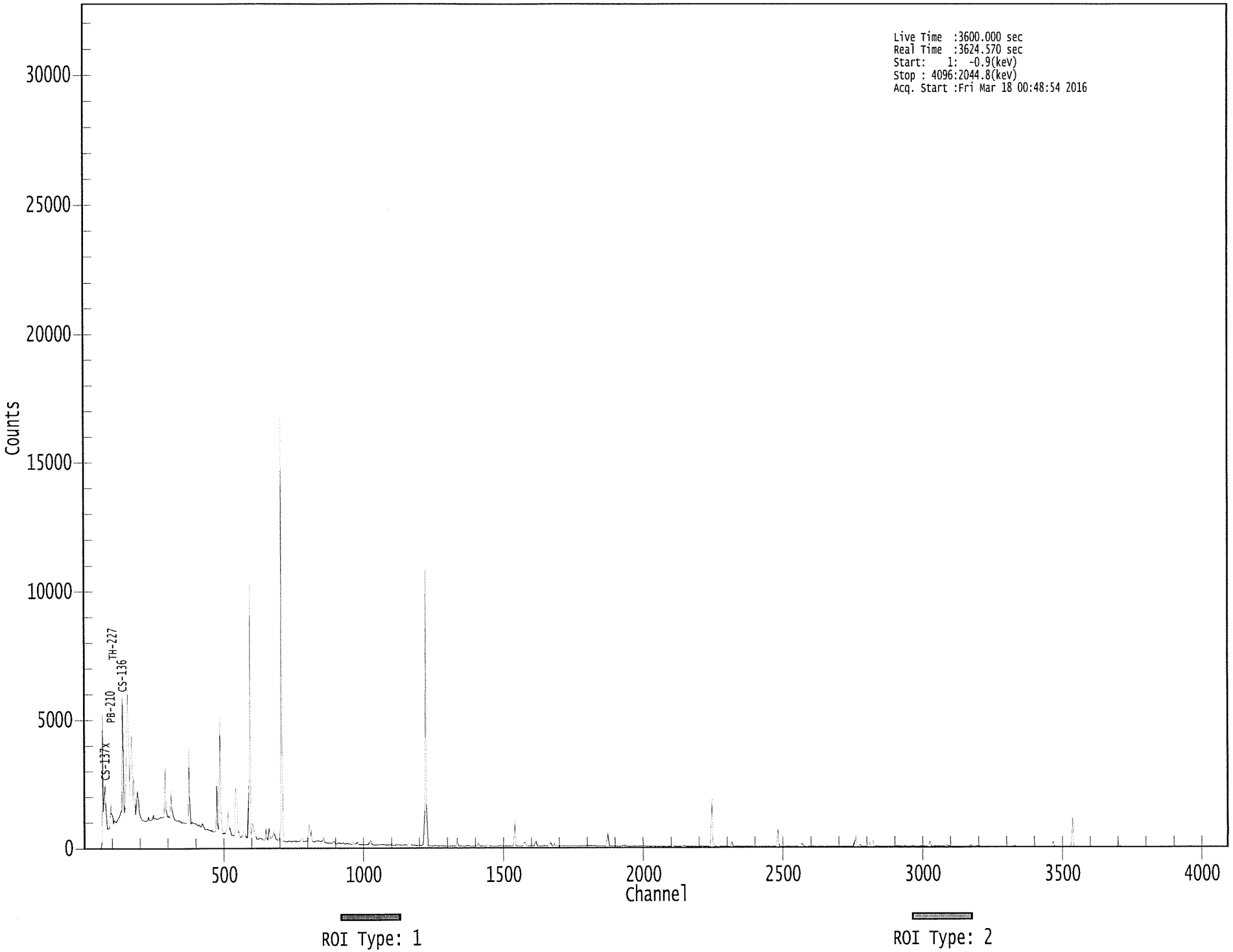
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	1.85E+02	1.05E+04	1.05E+04
+	BI-214	609.31	*	44.80	2.39E+05	1.41E+03	1.41E+03
		1120.29	*	14.80	2.40E+05		7.59E+03
		1764.49	*	15.36	2.43E+05		4.21E+03
+	PB-214	295.21	*	18.50	2.54E+05	2.93E+03	3.58E+03
		351.92	*	35.80	2.63E+05		2.93E+03
+	RA-226	186.10	*	3.50	2.99E+05	2.71E+04	2.71E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

0000007198.CNF



011223

Apex™

Analysis Report for 590213 Set#5

Tetra Tech TO#160115-1 Set#5

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 590213 Set#5
Sample Description	: Tetra Tech TO#160115-1 Set#5
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/17/2016 9:10:54PM
Acquisition Started	: 3/18/2016 9:33:45AM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3612.8 seconds
Dead Time	: 0.35 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7196

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.973	1.15E+05	2.87E+03	
PB-214	0.997	1.19E+05	5.63E+03	
RA-226	0.992	1.53E+05	9.73E+03	

Analysis Report for 590213 Set#5

Tetra Tech TO#160115-1 Set#5

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:51:03PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	36.41	2.16667E-02	123.91		
	2	67.68	1.40186E+00	3.28		
M	3	74.94	1.24675E-01	14.65		
m	4	77.13	2.93338E-01	14.50		
M	5	83.85	-7.83777E-01	- 7.1		
m	6	87.41	-2.88446E-01	- 8.8		
	7	94.63	1.20417E-01	23.62		
	8	144.09	6.76333E-01	4.83		
	9	154.30	5.25083E-01	6.59		
	11	236.07	-2.61167E-01	- 11.4		
	12	242.10	1.04879E+00	2.99		
	13	256.29	5.71111E-01	5.33		
M	14	269.64	7.01297E-01	3.20		
m	15	271.40	5.88415E-01	3.62		
	16	286.47	5.21667E-02	26.98		
m	18	300.16	1.68670E-01	6.91		
	19	324.10	5.47083E-02	29.43		
	20	330.10	5.26111E-02	32.96		
	21	338.47	8.10417E-02	16.87		
M	23	402.08	2.70304E-01	4.40		
m	24	405.07	1.83656E-01	5.72		
	26	665.75	1.27778E-01	7.78		
	27	768.73	4.29694E-01	3.42		
	28	786.15	8.12778E-02	12.05		
	29	806.48	8.66667E-02	8.82		
	30	832.54	4.32778E-02	19.53		
	31	934.51	2.13764E-01	5.27		
	33	1155.73	1.01806E-01	9.58		
	34	1238.67	3.43333E-01	3.26		
	35	1281.56	8.66806E-02	8.85		
	36	1378.29	1.91833E-01	5.19		
M	37	1402.18	6.67904E-02	7.92		
m	38	1408.49	1.33686E-01	5.24		
	39	1509.89	1.13222E-01	7.19		

Analysis Report for 590213 Set#5

Tetra Tech TO#160115-1 Set#5

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
40	1583.90	3.02083E-02	17.69		
41	1662.07	5.08333E-02	9.99		
42	1729.98	1.26542E-01	5.48	Sum	
44	1848.14	7.09722E-02	7.63		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

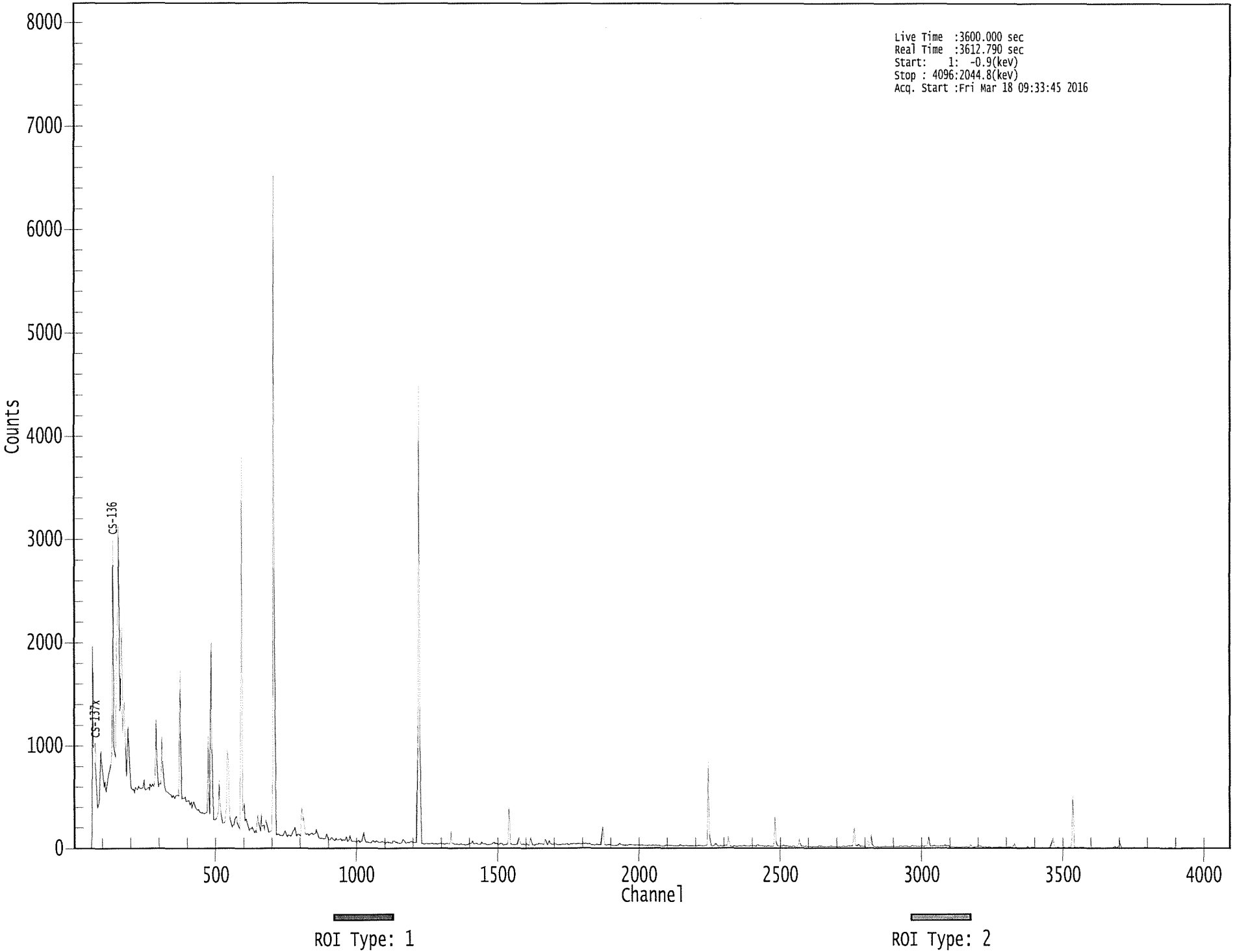
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	-1.28E+02	7.35E+03	7.35E+03
+	BI-214	609.31	*	44.80	1.13E+05	1.04E+03	1.04E+03
		1120.29	*	14.80	1.15E+05		3.60E+03
		1764.49	*	15.36	1.15E+05		2.80E+03
+	PB-214	295.21	*	18.50	1.14E+05	1.90E+03	2.77E+03
		351.92	*	35.80	1.25E+05		1.90E+03
+	RA-226	186.10	*	3.50	1.53E+05	1.81E+04	1.81E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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011227

Apex™

Analysis Report for 590214 Set#5

Tetra Tech TO#160115-1 Set#5

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 590214 Set#5
Sample Description	: Tetra Tech TO#160115-1 Set#5
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/17/2016 9:11:34PM
Acquisition Started	: 3/18/2016 10:35:15AM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3603.0 seconds
Dead Time	: 0.08 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7194

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.968	1.13E+04	4.09E+02	
PB-214	0.999	1.27E+04	6.46E+02	
RA-226	0.997	5.82E+04	3.98E+03	

Analysis Report for 590214 Set#5

Tetra Tech TO#160115-1 Set#5

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:50:31PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	46.66	2.34054E-03	638.71		
	2	50.19	9.98889E-02	12.83		
	3	63.37	2.56903E-01	8.54		
	4	67.78	1.00889E-01	20.12		
M	5	74.81	-8.38516E-02	- 15.3		
m	6	77.27	-1.74093E-01	- 12.6		
M	7	81.13	1.94213E-01	6.35		
m	8	83.90	4.60096E-01	3.35		
M	9	92.71	5.26171E-01	3.02		
m	10	94.69	1.60878E-01	6.52		
	11	144.13	1.85556E-01	6.91		
	12	154.31	1.18264E-01	11.26		
	14	236.13	1.28472E-01	10.72		
	15	242.07	9.22221E-03	126.16		
	16	256.37	1.03167E-01	9.45		
M	17	269.59	1.95817E-01	4.39		
m	18	271.36	1.68327E-01	4.79		
m	20	300.15	5.02416E-02	10.36		
	21	324.08	7.25000E-03	94.17		
	22	330.01	2.79861E-02	25.15		
	23	338.44	2.76667E-02	19.14		
M	25	401.92	8.75916E-02	6.54		
m	26	405.09	5.17871E-02	8.57		
	28	768.77	6.22917E-02	8.71		
	29	832.46	1.31389E-02	25.41		
	30	934.54	2.60972E-02	14.14		
	32	1155.78	1.25000E-02	19.35		
	33	1238.66	2.91667E-02	11.78		
	34	1378.32	2.53056E-02	13.01		
	35	1730.43	1.20833E-02	16.58	Sum	

Analysis Report for 590214 Set#5

Tetra Tech TO#160115-1 Set#5

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

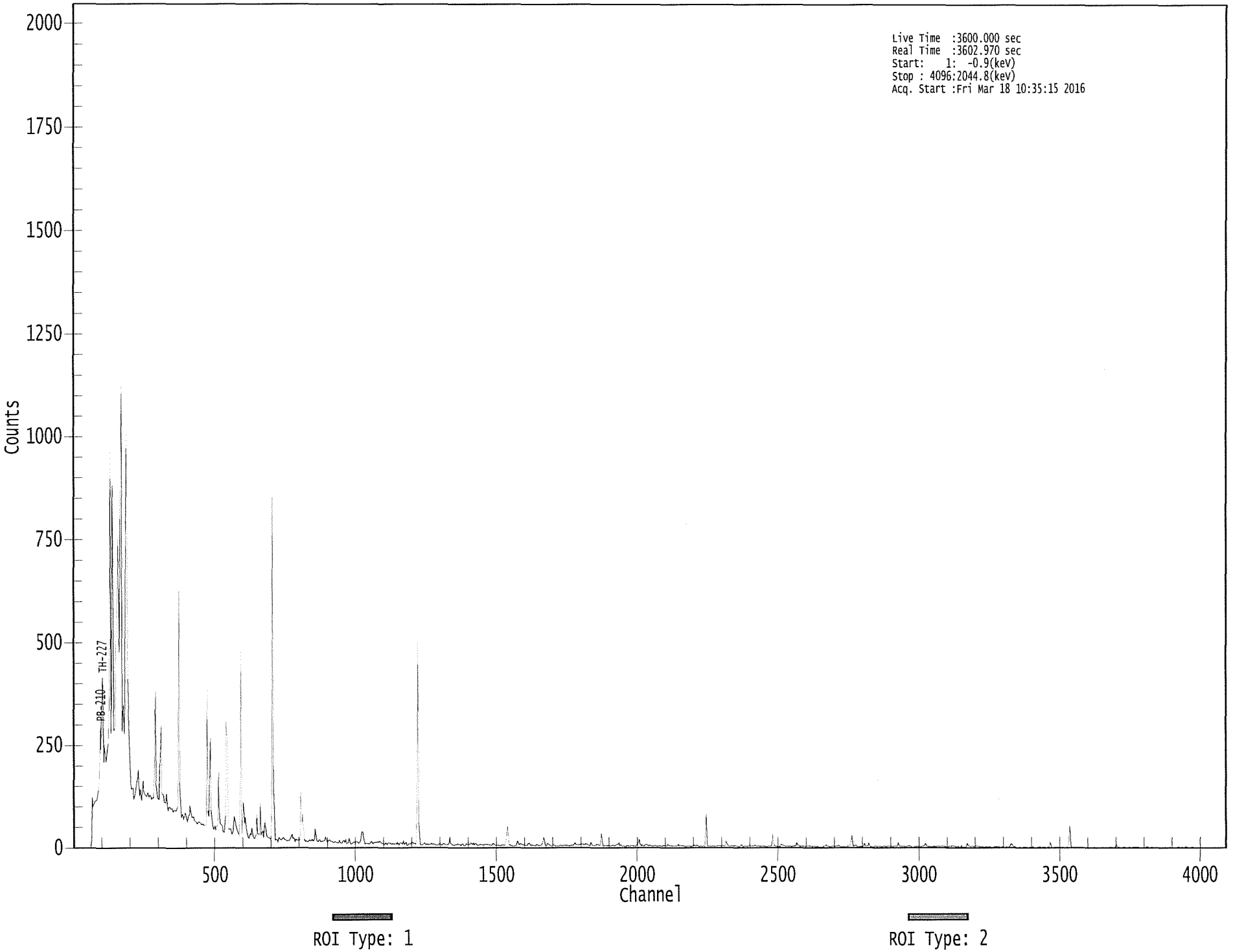
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	1.41E+03	3.43E+03	3.43E+03
+	BI-214	609.31	*	44.80	1.12E+04	4.55E+02	4.55E+02
		1120.29	*	14.80	1.10E+04		1.22E+03
		1764.49	*	15.36	1.21E+04		9.80E+02
+	PB-214	295.21	*	18.50	1.15E+04	6.16E+02	1.02E+03
		351.92	*	35.80	1.46E+04		6.16E+02
+	RA-226	186.10	*	3.50	5.82E+04	8.09E+03	8.09E+03

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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011231

Apex™

Analysis Report for 591000 Set#5

Tetra Tech TO#160115-1 Set#5

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 591000 Set#5
Sample Description	: Tetra Tech TO#160115-1 Set#5
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/17/2016 9:12:21PM
Acquisition Started	: 3/18/2016 11:37:25AM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3617.1 seconds
Dead Time	: 0.47 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7192

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.965	1.65E+05	4.02E+03	
PB-214	0.997	1.72E+05	8.08E+03	
RA-226	0.994	2.03E+05	1.26E+04	

Analysis Report for 591000 Set#5

Tetra Tech TO#160115-1 Set#5

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:49:53PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.18	1.75508E+00	1.72		
	2	36.42	4.11106E-03	794.57		
	3	46.66	4.38535E-01	7.29		
	4	50.23	-1.63528E-01	- 13.5		
	5	67.76	1.57261E+00	2.86		
M	6	74.89	6.97427E-01	3.75		
m	7	77.15	1.26949E+00	3.68		
m	8	81.15	2.23250E-01	4.50		
m	9	83.89	6.11744E-01	3.77		
m	10	87.30	4.03408E-01	3.92		
m	11	89.90	7.84607E-02	8.04		
	12	94.74	-1.32069E-01	- 24.2		
	13	144.11	7.52903E-01	5.36		
	14	154.32	4.86306E-01	8.01		
	16	210.57	4.70555E-02	68.18		
	17	236.13	-1.04750E+00	- 4.0		
	18	242.14	1.64161E+00	2.36		
M	19	256.35	3.75284E-01	4.39		
m	20	259.15	1.30835E-01	9.64		
M	21	269.62	7.31417E-01	2.54		
m	22	271.38	5.61071E-01	3.02		
m	23	274.78	7.87888E-02	14.33		
	24	286.22	1.56680E-01	18.04		
m	26	300.16	1.85216E-01	6.57		
	27	324.06	2.31666E-02	106.42		
	28	330.01	3.72778E-02	54.75		
	29	338.40	6.57639E-02	27.83		
M	31	402.04	2.74926E-01	4.50		
m	32	405.14	1.77052E-01	6.14		
	33	427.52	8.72778E-02	20.53		
	34	455.00	4.14444E-02	26.17		
	35	480.80	3.22222E-02	36.21	Sum	
	36	580.21	4.09722E-02	24.32		
	38	665.78	2.13639E-01	6.43		

Analysis Report for 591000 Set#5

Tetra Tech TO#160115-1 Set#5

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	39	703.44	6.50556E-02	15.04	Sum	
	40	720.35	3.33194E-02	25.89		
	41	768.79	6.54944E-01	2.64		
	42	786.34	1.21472E-01	8.49		
	43	806.57	1.60472E-01	8.11		
	44	832.56	4.13889E-02	20.88		
	45	839.48	1.27222E-02	91.17		
	46	934.58	3.19111E-01	4.38		
	47	1052.43	2.33611E-02	34.01		
	49	1155.75	1.35667E-01	7.47		
	50	1208.20	3.65833E-02	19.60		
	51	1238.74	5.10278E-01	2.65		
	52	1281.61	1.08472E-01	8.56		
M	53	1378.28	3.42886E-01	3.11		
m	54	1385.95	5.98515E-02	8.61		
M	55	1402.14	1.02160E-01	6.27		
m	56	1408.66	1.85549E-01	4.41		
	57	1509.81	1.51306E-01	6.92		
	58	1584.14	4.63194E-02	13.98		
	59	1599.97	1.41250E-02	39.62		
	60	1662.11	6.29167E-02	8.95		
	61	1730.32	2.00611E-01	4.15	Sum	
	63	1838.83	-2.27222E-02	- 23.1		
	64	1847.92	1.25806E-01	5.51		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	2.47E+03	8.79E+03	8.79E+03
+	BI-214	609.31	*	44.80	1.62E+05	1.17E+03	1.17E+03
		1120.29	*	14.80	1.69E+05		4.94E+03
		1764.49	*	15.36	1.65E+05		2.79E+03
+	PB-214	295.21	*	18.50	1.66E+05	2.06E+03	2.97E+03
		351.92	*	35.80	1.78E+05		2.06E+03

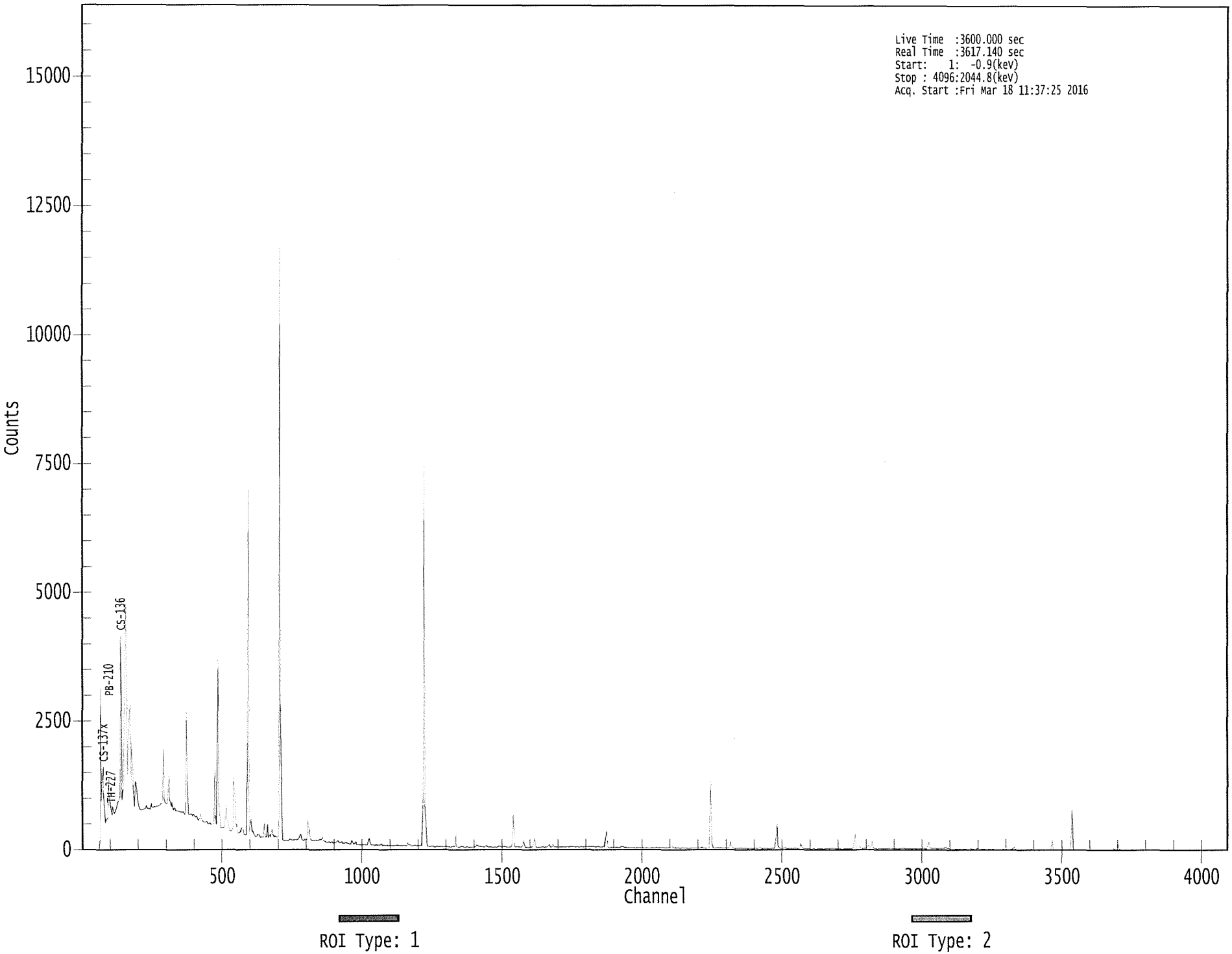
Analysis Report for 591000 Set#5

Tetra Tech TO#160115-1 Set#5

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
+	RA-226	186.10	*	3.50	2.03E+05	2.19E+04	2.19E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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011236

011237

Southwest Research Institute, Division 1, Radiochemistry

Gamma Spectroscopy Summary Sheet (1 sig)

Client: Tetra Tech (Set#6)
Task Order: 160115-1
Prep Page: N/A
Prep Date: N/A

JR 4/4/16

RSpin 4/19/16

Project #: 21431.01.001
SRR: 56591, 56639, 56785, 56876
TPU sig factor: 1
Units: g

Notes:

Sample ID 588049 | Sample # 7190 | Sample Size 1 Each | Date Analyzed 3/18/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	56.279	100.00%	1	3.72E+03	8.96E+01	3.37E+01	2.23E+01		
^{214}Pb	56.279	100.00%	1	3.98E+03	1.87E+02	4.47E+01	2.12E+01		
^{226}Ra	56.279	100.00%	1	4.85E+03	2.95E+02	4.56E+02	1.13E+02		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 588556 | Sample # 7188 | Sample Size 1 Each | Date Analyzed 3/18/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	58.238	100.0%	1	2.79E+03	6.80E+01	2.88E+01	1.90E+01		
^{214}Pb	58.238	100.00%	1	3.08E+03	1.45E+02	3.86E+01	1.88E+01		
^{226}Ra	58.238	100.00%	1	3.63E+03	2.23E+02	3.52E+02	8.91E+01		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 588556D | Sample # 7186 | Sample Size 1 Each | Date Analyzed 3/18/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RPDs	DER	
^{214}Bi	56.168	100.0%	1	2.53E+03	6.23E+01	2.49E+01	1.81E+01		9.6	2.8	Pass
^{214}Pb	56.168	100.00%	1	2.73E+03	1.29E+02	3.91E+01	1.79E+01		11.9	1.8	Pass
^{226}Ra	56.168	100.00%	1	3.54E+03	2.22E+02	3.95E+02	9.72E+01		2.5	0.3	Pass

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.
Duplicate Evaluation = (Sample-Duplicate) / sqrt ((TPUsample^2) + (TPUdup^2)) # 3

Sample ID 590212 | Sample # 7184 | Sample Size 1 Each | Date Analyzed 3/18/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	52.917	100.00%	1	4.80E+03	1.15E+02	3.88E+01	2.63E+01		
^{214}Pb	52.917	100.00%	1	4.86E+03	2.29E+02	5.26E+01	2.39E+01		
^{226}Ra	52.917	100.00%	1	5.91E+03	3.56E+02	4.97E+02	1.24E+02		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Note: Ra 226 is not reported from this spreadsheet. SL 4/20/16

011238

Southwest Research Institute, Division 1, Radiochemistry

Gamma Spectroscopy Summary Sheet (1 sig)

Client: Tetra Tech (Set#6)
Task Order: 160115-1
Prep Page: N/A
Prep Date: N/A

Project #: 21431.01.001
SRR: 56591, 56639, 56785, 56876
TPU sig factor: 1
Units: g

Notes: _____

Sample ID 590213 | Sample # 7182 | Sample Size 1 Each | Date Analyzed 3/18/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	53.002	100.00%	1	2.15E+03	5.39E+01	2.53E+01	1.74E+01		
^{214}Pb	53.002	100.00%	1	2.28E+03	1.08E+02	3.58E+01	1.66E+01		
^{226}Ra	53.002	100.00%	1	2.70E+03	1.76E+02	3.60E+02	8.82E+01		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 590214 | Sample # 7180 | Sample Size 1 Each | Date Analyzed 3/18/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	55.438	100.00%	1	1.88E+02	7.00E+00	8.00E+00	5.08E+00		
^{214}Pb	55.438	100.00%	1	2.24E+02	1.14E+01	1.14E+01	4.90E+00		
^{226}Ra	55.438	100.00%	1	9.75E+02	6.82E+01	1.48E+02	4.04E+01		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 591000 | Sample # 7178 | Sample Size 1 Each | Date Analyzed 3/18/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	50.867	100.00%	1	3.10E+03	7.59E+01	2.52E+01	2.10E+01		
^{214}Pb	50.867	100.00%	1	3.27E+03	1.54E+02	4.10E+01	2.02E+01		
^{226}Ra	50.867	100.00%	1	4.18E+03	2.63E+02	4.82E+02	1.17E+02		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

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Analysis Report for 588049 Set#6

TetraTech TO#160115-1 Set#6

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 588049 Set#6
Sample Description	: TetraTech TO#160115-1 Set#6
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/18/2016 10:42:50AM
Acquisition Started	: 3/18/2016 12:47:00PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3622.4 seconds
Dead Time	: 0.62 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7190

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.963	2.10E+05	5.04E+03	
PB-214	0.996	2.24E+05	1.05E+04	
RA-226	0.994	2.73E+05	1.66E+04	

Analysis Report for 588049 Set#6

TetraTech TO#160115-1 Set#6

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:49:20PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.18	2.85174E+00	1.32		
	2	36.39	-3.81250E-02	- 103.5		
	3	46.62	5.24104E-01	6.72		
M	4	50.26	-1.72743E-01	- 17.7		
m	5	53.27	-8.71185E-02	- 19.4		
	6	67.76	2.87767E+00	1.89		
M	7	74.90	7.10777E-01	3.77		
m	8	77.18	1.48631E+00	3.68		
m	9	81.16	3.46733E-01	4.11		
m	10	83.88	9.17127E-01	3.72		
m	11	87.35	4.18681E-01	3.97		
m	12	89.88	7.52319E-02	9.05		
	13	94.75	-5.17472E-01	- 11.8		
	14	144.12	1.11950E+00	3.92		
	15	154.29	7.33653E-01	5.44		
	17	236.11	-1.14117E+00	- 4.2		
	18	242.14	2.04485E+00	2.09		
M	19	254.06	1.78915E-01	7.92		
m	20	256.35	6.71526E-01	2.90		
m	21	259.06	2.11974E-01	6.74		
M	22	269.62	1.19671E+00	1.89		
m	23	271.40	9.28768E-01	2.23		
m	24	274.75	9.52644E-02	13.03		
	25	283.80	-7.64375E+00	- 0.8		
m	27	300.14	3.84926E-01	4.13		
m	28	302.81	1.95415E-01	6.72		
	29	324.12	1.45528E-01	13.44		
M	30	330.05	1.07522E-01	20.73		
m	31	334.40	2.18342E-02	22.51		
m	32	338.52	8.07552E-02	20.78		
M	34	387.02	7.85990E-02	12.41		
m	35	389.14	9.85384E-02	10.46		
M	36	402.01	4.24538E-01	3.52		
m	37	405.20	2.79566E-01	4.68		

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Analysis Report for 588049 Set#6

TetraTech TO#160115-1 Set#6

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	38	427.30	1.50556E-01	11.75		
	39	445.31	5.29167E-02	26.41		
	40	455.15	-2.66389E-02	- 78.0		
	41	480.69	2.97222E-02	47.31	Sum	
	42	487.38	4.15555E-02	34.96		
	43	511.06	1.88924E-01	10.04		
	44	580.41	3.94167E-02	28.87		
	46	665.83	2.64347E-01	5.55		
	47	703.49	9.55833E-02	12.21	Sum	
	48	720.33	6.23611E-02	24.52		
	49	768.78	8.10028E-01	2.49		
	50	786.30	1.52750E-01	7.95		
	51	806.64	2.19722E-01	6.17		
	52	832.37	5.16944E-02	24.26		
	53	839.37	2.29167E-02	50.01		
	54	934.61	4.10556E-01	3.72		
	55	964.53	6.70000E-02	16.56		
	56	1052.61	2.66250E-02	28.34		
	58	1155.79	1.79861E-01	5.98		
	59	1208.55	5.02917E-02	19.59		
	60	1238.73	6.48222E-01	2.54		
	61	1281.66	1.48306E-01	7.15		
M	62	1378.37	4.02176E-01	2.87		
m	63	1385.99	6.98733E-02	8.12		
M	64	1402.22	1.31083E-01	5.53		
m	65	1408.58	2.40657E-01	3.87		
	66	1509.89	1.85333E-01	6.75		
	67	1539.55	1.93889E-02	37.26		
	68	1584.21	7.54444E-02	10.14		
M	69	1595.52	2.27144E-02	17.04		
m	70	1600.07	2.56402E-02	15.70		
	71	1662.09	9.49028E-02	7.32		
	72	1684.56	1.67083E-02	28.03		
	73	1730.38	2.45208E-01	3.78	Sum	
	75	1838.75	1.05278E-02	42.19		
	76	1848.27	1.55944E-01	5.02		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

Analysis Report for 588049 Set#6

TetraTech TO#160115-1 Set#6

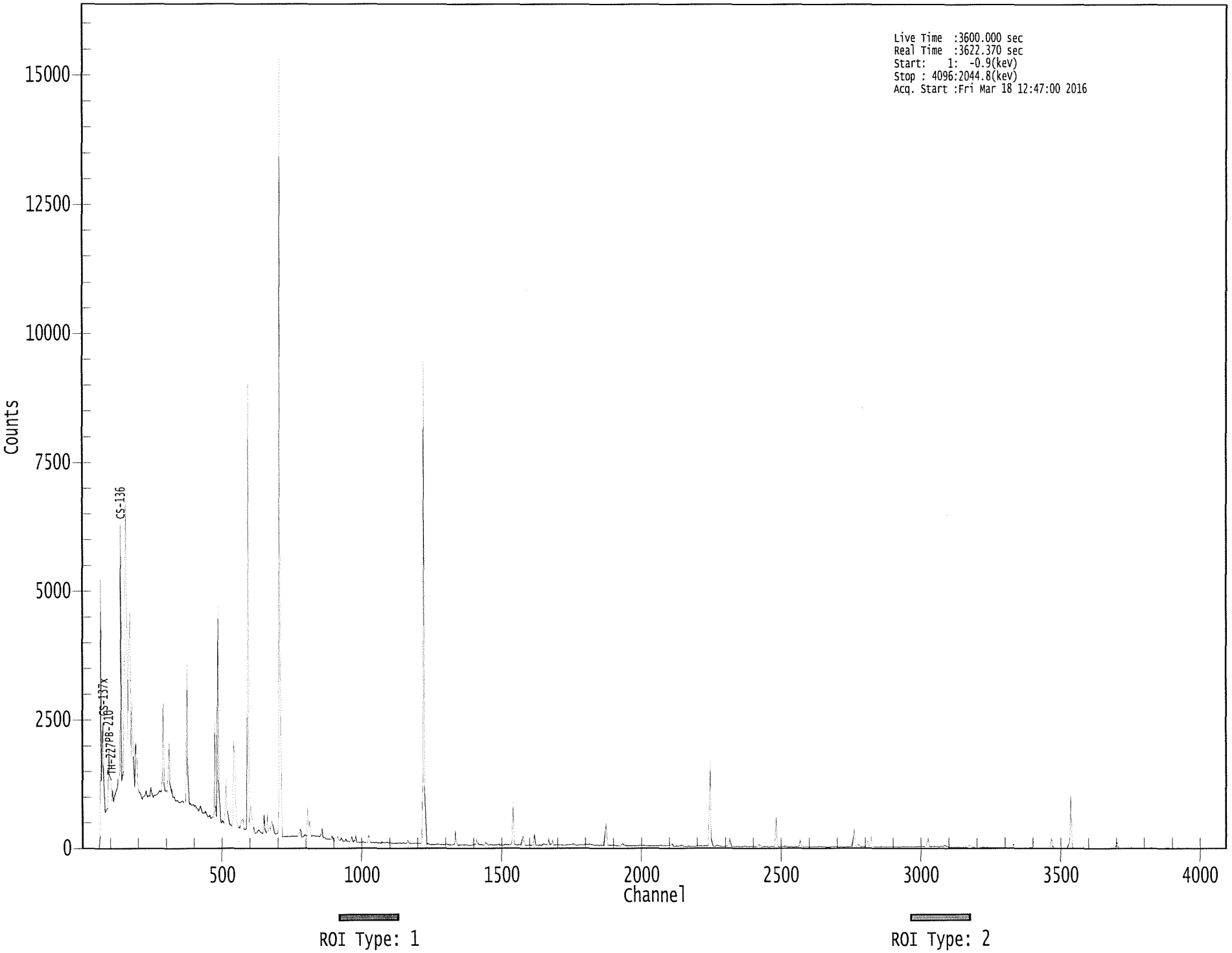
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	1.19E+03	9.68E+03	9.68E+03
+	BI-214	609.31	*	44.80	2.10E+05	1.90E+03	1.90E+03
		1120.29	*	14.80	2.16E+05		4.73E+03
		1764.49	*	15.36	2.05E+05		3.55E+03
+	PB-214	295.21	*	18.50	2.14E+05	2.52E+03	3.37E+03
		351.92	*	35.80	2.37E+05		2.52E+03
+	RA-226	186.10	*	3.50	2.73E+05	2.57E+04	2.57E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 588556 Set#6

TetraTech TO#160115-1 Set#6

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 588556 Set#6
Sample Description	: TetraTech TO#160115-1 Set#6
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/18/2016 10:44:12AM
Acquisition Started	: 3/18/2016 1:53:00PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3617.6 seconds
Dead Time	: 0.49 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7188

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.964	1.62E+05	3.96E+03	
PB-214	0.996	1.79E+05	8.45E+03	
RA-226	0.994	2.12E+05	1.30E+04	

011245

Analysis Report for 588556 Set#6

TetraTech TO#160115-1 Set#6

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:48:39PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.19	2.49262E+00	1.45		
	2	36.41	-1.68472E-01	- 19.7		
	3	46.66	3.52257E-01	9.53		
	4	50.12	-1.59583E-01	- 24.1		
	5	67.77	1.96414E+00	2.70		
M	6	74.90	5.66549E-01	4.22		
m	7	77.16	1.21226E+00	4.11		
m	8	81.15	2.90918E-01	4.57		
m	9	83.86	7.90455E-01	4.15		
m	10	87.38	3.36712E-01	4.44		
m	11	89.91	4.76649E-02	12.47		
	12	94.72	-9.12500E-02	- 39.9		
	13	144.12	1.00276E+00	4.07		
	14	154.29	6.82708E-01	6.34		
	16	210.69	2.44444E-02	116.81		
	17	236.14	-4.62944E-01	- 8.0		
	18	242.13	1.73153E+00	1.98		
M	19	254.01	1.09542E-01	11.17		
m	20	256.39	5.33080E-01	3.26		
m	21	259.10	1.60585E-01	7.80		
M	22	269.63	1.01987E+00	2.02		
m	23	271.40	7.73310E-01	2.40		
m	24	274.63	1.23497E-01	9.14		
M	25	283.77	-2.66559E-01	- 13.3		
m	26	286.34	-7.89969E-02	- 32.5		
m	28	300.17	2.87971E-01	4.19		
m	29	302.92	1.61294E-01	6.76		
	30	324.04	6.37361E-02	30.19		
	31	330.05	1.19250E-01	16.38		
	32	338.42	1.25278E-01	12.88		
	34	389.22	1.38083E-01	16.59		
M	35	402.05	3.69223E-01	3.70		
m	36	405.16	2.41770E-01	4.92		
	37	427.43	1.00278E-01	16.11		

Analysis Report for 588556 Set#6

TetraTech TO#160115-1 Set#6

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	38	445.43	4.43611E-02	34.99		
	39	480.69	1.72222E-02	66.74	Sum	
	40	487.40	3.52222E-02	35.95		
	41	510.94	1.45674E-01	11.43		
	42	580.33	5.14444E-02	27.44		
	44	665.81	2.05153E-01	6.32		
	45	703.51	8.00000E-02	13.52	Sum	
	46	768.79	6.06389E-01	2.94		
	47	786.36	1.33542E-01	8.26		
	48	806.53	1.33653E-01	7.36		
	49	832.37	5.69444E-02	20.63		
	50	839.49	1.13889E-02	73.50		
	51	934.58	3.18750E-01	3.89		
	53	1155.81	1.48125E-01	6.58		
	54	1208.42	3.84861E-02	20.74		
	55	1238.78	4.93972E-01	2.83		
	56	1281.60	1.33958E-01	7.28		
	57	1378.30	2.57556E-01	4.92		
	58	1386.10	-1.46694E-01	- 6.6		
M	59	1402.29	1.08599E-01	5.97		
m	60	1408.71	1.79958E-01	4.45		
	61	1509.94	1.58500E-01	5.70		
	62	1539.05	1.87361E-02	32.40		
	63	1584.01	4.04444E-02	16.67		
	64	1661.96	6.75833E-02	8.88		
	65	1730.33	1.81042E-01	4.35	Sum	
	67	1848.15	9.61111E-02	7.21		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	3.31E+03	8.88E+03	8.88E+03
+	BI-214	609.31	*	44.80	1.62E+05	1.68E+03	1.68E+03
		1120.29	*	14.80	1.63E+05		4.62E+03

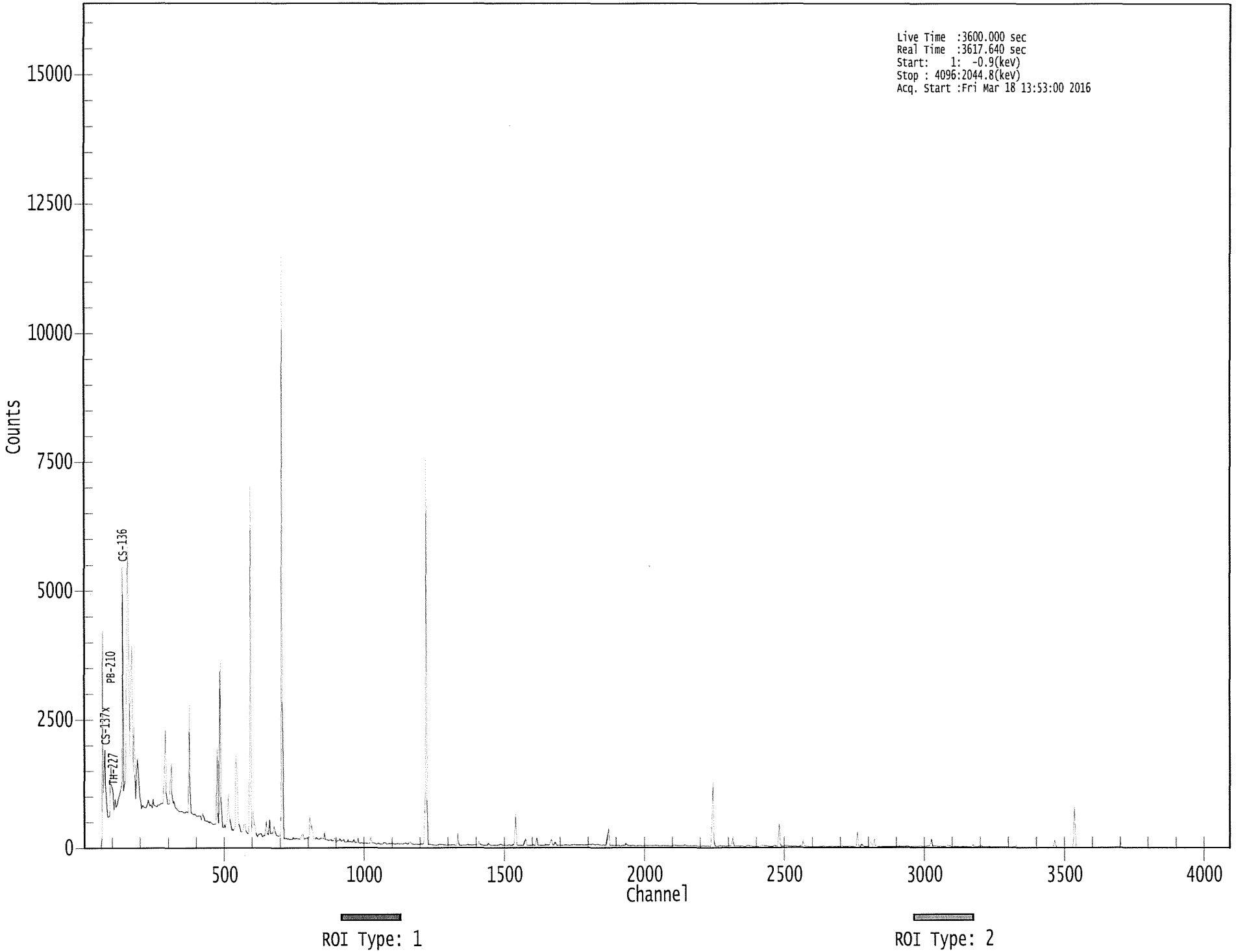
Analysis Report for 588556 Set#6

TetraTech TO#160115-1 Set#6

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	BI-214	1764.49	*	15.36	1.61E+05	1.68E+03	3.27E+03
+	PB-214	295.21	*	18.50	1.78E+05	2.25E+03	2.99E+03
		351.92	*	35.80	1.81E+05		2.25E+03
+	RA-226	186.10	*	3.50	2.12E+05	2.05E+04	2.05E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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011248

Apex™

Analysis Report for 588556Dup.Set#6
TetraTech TO#160115-1 Set#6

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 588556Dup.Set#6
Sample Description	: TetraTech TO#160115-1 Set#6
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/18/2016 10:45:58AM
Acquisition Started	: 3/18/2016 3:01:54PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3615.8 seconds
Dead Time	: 0.44 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7186

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/Each)	Wt mean Activity Uncertainty	Comments
BI-214	0.962	1.42E+05	3.50E+03	
PB-214	0.996	1.54E+05	7.24E+03	
RA-226	0.995	1.99E+05	1.25E+04	

Analysis Report for 588556Dup.Set#6

TetraTech TO#160115-1 Set#6

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:48:07PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.18	2.29406E+00	1.43		
	2	36.37	-8.18056E-02	- 38.8		
	3	46.66	5.21577E-01	5.90		
M	4	50.29	-1.04914E-01	- 24.5		
m	5	53.26	-3.25308E-02	- 27.0		
	6	67.77	2.54444E+00	1.85		
M	7	74.91	4.79410E-01	4.80		
m	8	77.18	1.06595E+00	4.68		
m	9	81.16	2.60076E-01	5.11		
m	10	83.87	6.75906E-01	4.73		
m	11	87.36	2.62809E-01	5.08		
m	12	89.86	3.52163E-02	15.25		
M	13	94.73	-3.47140E-01	- 15.3		
m	14	97.80	-1.06376E-02	- 59.1		
	15	102.96	-1.07778E-01	- 20.7		
	16	122.44	6.71111E-02	39.70		
	17	144.13	9.15097E-01	3.82		
	18	154.31	6.21667E-01	5.67		
	20	236.12	-3.76931E-01	- 8.9		
	21	242.15	1.48267E+00	2.32		
M	22	256.38	4.64547E-01	3.52		
m	23	259.10	1.19500E-01	9.50		
M	24	269.61	9.30394E-01	2.11		
m	25	271.41	7.22897E-01	2.46		
	26	283.82	1.23333E-01	23.57		
m	28	300.19	2.70246E-01	4.43		
m	29	302.89	1.49945E-01	7.00		
	30	324.05	7.83472E-02	23.10		
	31	330.17	7.88889E-02	22.10		
	32	338.47	9.11111E-02	17.58		
	34	389.27	1.20167E-01	14.56		
M	35	402.05	3.01543E-01	4.10		
m	36	405.15	2.04838E-01	5.33		
	37	427.34	6.75000E-02	26.66		

011251

Analysis Report for 588556Dup.Set#6

TetraTech TO#160115-1 Set#6

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	38	445.31	5.00000E-02	24.45		
	39	455.05	3.55000E-02	39.52		
	40	462.23	-3.94443E-03	- 314.8		
	41	487.40	2.08333E-02	64.54		
	42	580.45	6.31389E-02	20.09		
	44	665.81	1.80333E-01	6.98		
	45	703.51	6.07917E-02	15.37	Sum	
	46	720.11	2.55972E-02	27.08		
	47	768.79	5.53597E-01	3.01		
	48	786.39	1.11972E-01	8.96		
	49	806.69	1.29250E-01	7.96		
	50	832.40	4.99167E-02	20.37		
	51	839.45	8.33333E-03	99.08		
	52	934.63	2.90972E-01	5.21		
	53	964.37	2.41667E-02	28.26		
	55	1155.84	1.24847E-01	6.70		
	56	1208.33	2.85972E-02	27.56		
	57	1238.87	4.15792E-01	3.03		
	58	1281.58	9.08750E-02	9.14		
M	59	1378.36	2.55854E-01	3.61		
m	60	1385.94	5.74735E-02	8.55		
M	61	1402.14	1.01631E-01	6.10		
m	62	1408.66	1.62982E-01	4.67		
	63	1509.94	1.24750E-01	7.28		
	64	1584.04	4.32639E-02	14.29		
	65	1662.17	6.32500E-02	8.71		
	66	1730.52	1.57083E-01	4.83	Sum	
	68	1848.11	1.12667E-01	5.72		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	1.98E+03	8.07E+03	8.07E+03
+	BI-214	609.31	*	44.80	1.43E+05	1.40E+03	1.40E+03

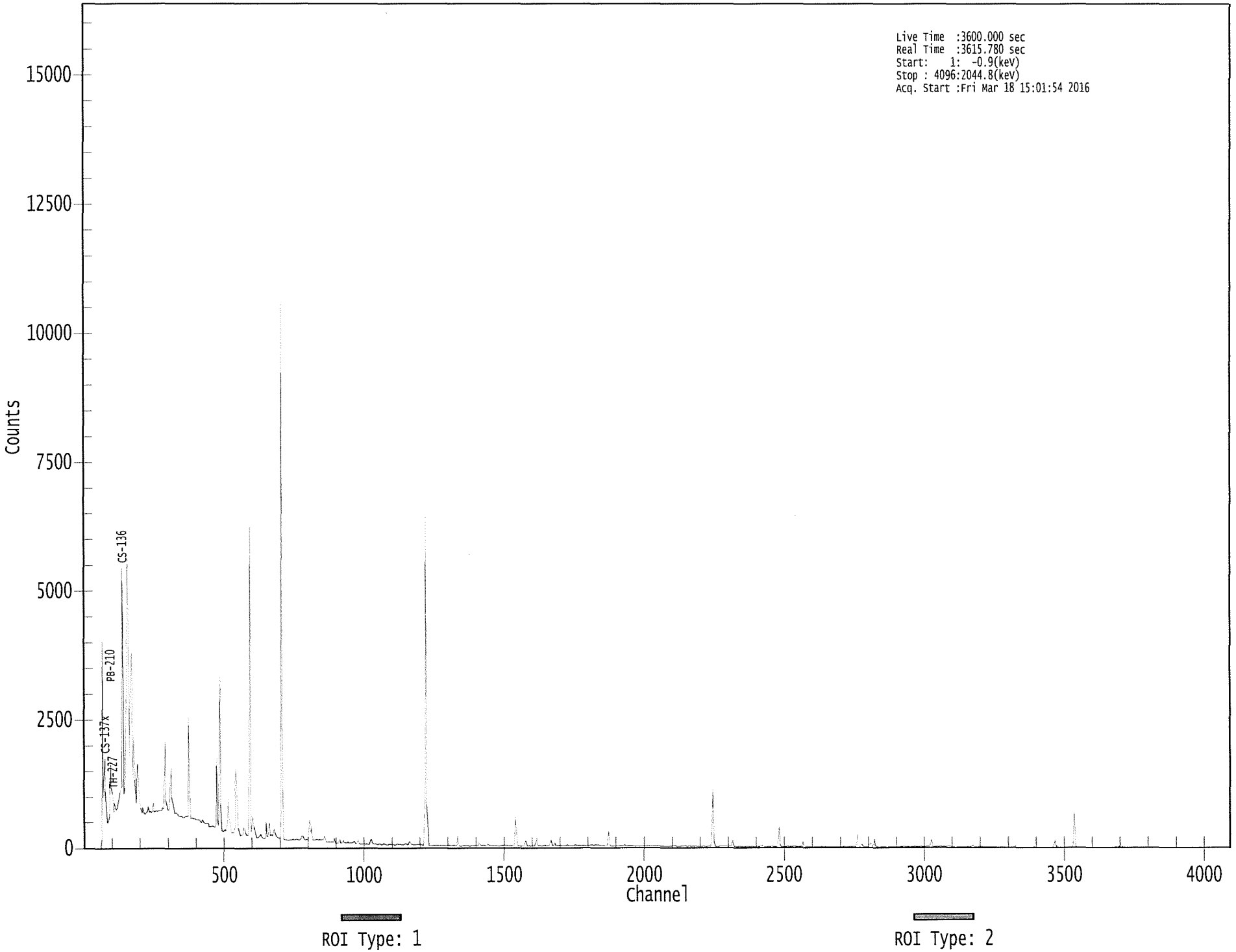
Analysis Report for 588556Dup.Set#6

TetraTech TO#160115-1 Set#6

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	BI-214	1120.29	*	14.80	1.42E+05	1.40E+03	4.74E+03
		1764.49	*	15.36	1.42E+05		2.91E+03
+	PB-214	295.21	*	18.50	1.48E+05	2.19E+03	2.72E+03
		351.92	*	35.80	1.60E+05		2.19E+03
+	RA-226	186.10	*	3.50	1.99E+05	2.22E+04	2.22E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 590212 Set#6

TetraTech TO#160115-1 Set#6

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 590212 Set#6
Sample Description	: TetraTech TO#160115-1 Set#6
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/18/2016 10:47:11AM
Acquisition Started	: 3/18/2016 4:06:54PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3626.1 seconds
Dead Time	: 0.72 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7184

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.957	2.54E+05	6.06E+03	
PB-214	0.996	2.57E+05	1.21E+04	
RA-226	0.994	3.13E+05	1.88E+04	

Analysis Report for 590212 Set#6

TetraTech TO#160115-1 Set#6

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:47:30PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.21	3.86260E+00	1.16		
	2	36.41	-1.58333E-02	- 258.6		
	3	46.57	4.09535E-01	9.59		
	4	50.22	-8.31112E-02	- 36.6		
	5	67.77	3.20256E+00	1.79		
M	6	74.90	7.77634E-01	3.67		
m	7	77.17	1.58049E+00	3.58		
m	8	81.15	3.74295E-01	4.01		
m	9	83.89	1.03421E+00	3.61		
m	10	87.36	4.86283E-01	3.82		
m	11	89.90	6.74452E-02	10.50		
	12	94.68	-6.72222E-01	- 10.1		
	13	122.36	6.24862E-02	47.04		
	14	144.14	1.46792E+00	2.95		
	15	154.32	9.26972E-01	4.18		
	17	236.17	-1.36190E+00	- 3.8		
	18	242.14	2.29778E+00	2.16		
M	19	253.98	2.14181E-01	7.27		
m	20	256.41	7.44048E-01	2.82		
m	21	258.98	2.04435E-01	7.40		
M	22	269.62	1.46030E+00	1.70		
m	23	271.39	1.17341E+00	1.95		
m	24	274.92	1.57195E-01	8.66		
M	25	283.93	1.73598E-01	8.39		
m	26	286.24	1.55594E-01	9.03		
m	28	300.19	4.40563E-01	3.75		
m	29	302.86	2.45905E-01	5.67		
	30	324.02	1.15056E-01	21.65		
M	31	330.02	1.05936E-01	22.10		
m	32	334.33	1.78682E-02	24.22		
m	33	338.54	7.95155E-02	22.14		
M	35	387.05	9.84791E-02	11.39		
m	36	389.16	1.22983E-01	9.70		
M	37	402.08	5.45034E-01	3.07		

Analysis Report for 590212 Set#6

TetraTech TO#160115-1 Set#6

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	38	405.18	3.60420E-01	4.08		
	39	427.49	1.52500E-01	14.82		
	40	445.26	3.44166E-02	65.50		
	41	455.07	4.59444E-02	37.97		
	42	480.80	9.72222E-03	180.65	Sum	
	43	487.23	7.10417E-02	22.99		
	44	511.04	2.50646E-01	7.90		
	45	533.99	4.65000E-02	32.31		
	46	580.42	6.44444E-02	18.73		
	48	665.81	3.04097E-01	5.00		
	49	703.53	1.05861E-01	10.74	Sum	
	50	720.30	6.73611E-02	18.27		
	51	768.81	9.76042E-01	2.40		
	52	786.37	1.91889E-01	7.72		
	53	806.66	2.22542E-01	6.70		
	54	832.48	6.18056E-02	22.15		
	55	839.46	-4.27222E-02	- 36.7		
	56	934.57	4.92861E-01	3.23		
	57	964.79	4.94444E-02	18.29		
	58	1052.44	3.67778E-02	25.65		
	59	1070.70	3.54167E-02	25.54		
	61	1155.81	2.25347E-01	5.34		
	62	1208.33	6.03194E-02	13.92		
	63	1238.86	7.61597E-01	2.19		
	64	1281.60	1.66167E-01	5.76		
M	65	1378.42	4.93479E-01	2.57		
m	66	1386.08	9.05320E-02	7.08		
M	67	1402.31	1.47826E-01	5.22		
m	68	1408.79	2.76698E-01	3.62		
	69	1510.02	2.22833E-01	5.72		
M	70	1539.43	5.14045E-02	11.05		
m	71	1544.04	4.25923E-02	12.21		
	72	1584.08	9.05556E-02	9.36		
	73	1662.14	1.11306E-01	6.31		
	74	1730.38	2.81417E-01	3.57	Sum	
	76	1839.14	-5.42222E-02	- 12.5		
	77	1848.09	1.63931E-01	5.36		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

Analysis Report for 590212 Set#6

TetraTech TO#160115-1 Set#6

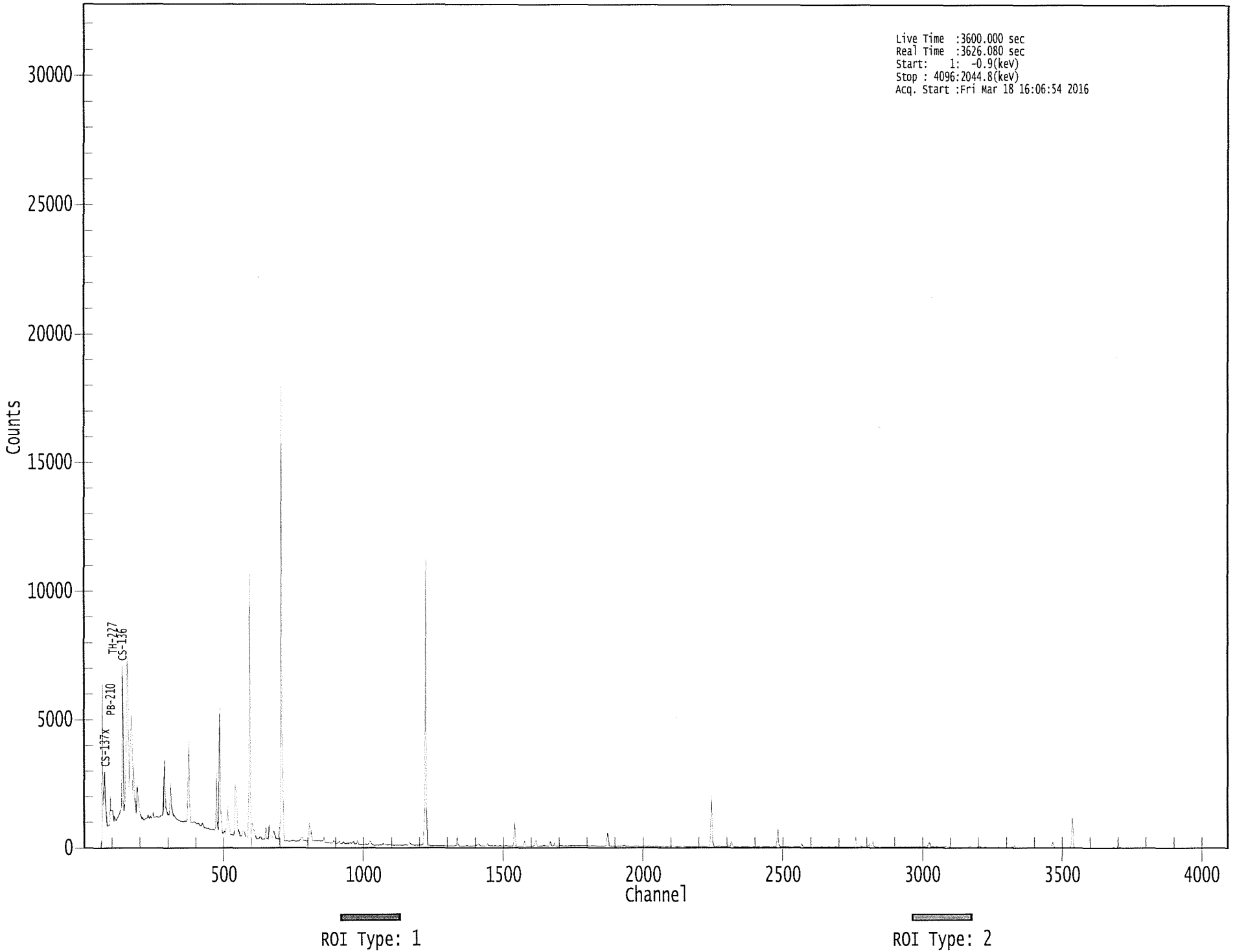
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	-9.67E+02	1.07E+04	1.07E+04
+	BI-214	609.31	*	44.80	2.50E+05	2.05E+03	2.05E+03
		1120.29	*	14.80	2.58E+05		7.24E+03
		1764.49	*	15.36	2.54E+05		4.11E+03
+	PB-214	295.21	*	18.50	2.41E+05	2.78E+03	3.66E+03
		351.92	*	35.80	2.79E+05		2.78E+03
+	RA-226	186.10	*	3.50	3.13E+05	2.63E+04	2.63E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 590213 Set#6

TetraTech TO#160115-1 Set#6

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 590213 Set#6
Sample Description	: TetraTech TO#160115-1 Set#6
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/18/2016 10:48:25AM
Acquisition Started	: 3/18/2016 5:10:02PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3612.7 seconds
Dead Time	: 0.35 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7182

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.959	1.14E+05	2.86E+03	
PB-214	0.996	1.21E+05	5.70E+03	
RA-226	0.994	1.43E+05	9.31E+03	

Analysis Report for 590213 Set#6

TetraTech TO#160115-1 Set#6

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:46:57PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.18	1.56093E+00	1.78		
	2	36.39	7.59722E-02	34.40		
	3	46.63	3.31813E-01	8.79		
	4	50.20	-3.54999E-02	- 58.9		
	5	67.76	1.58556E+00	2.56		
M	6	74.88	2.41518E-01	7.88		
m	7	77.18	5.29482E-01	7.76		
M	8	81.08	-2.11219E-02	- 76.4		
m	9	83.82	-1.24162E+00	- 5.0		
m	10	87.34	-3.95178E-01	- 6.4		
	11	94.74	-5.47222E-02	- 56.5		
	12	122.45	6.91667E-02	39.37		
	13	144.13	6.99222E-01	4.91		
	14	154.31	4.60556E-01	6.89		
	16	236.16	-1.38500E-01	- 20.8		
	17	242.16	9.91278E-01	3.30		
M	18	256.38	3.71991E-01	3.93		
m	19	259.03	9.97896E-02	10.44		
M	20	269.63	7.28203E-01	2.42		
m	21	271.39	5.78898E-01	2.79		
	22	283.82	-1.10831E+00	- 2.7		
m	24	300.20	2.30707E-01	4.83		
m	25	302.85	1.23011E-01	7.51		
	26	324.08	6.95833E-02	22.19		
M	27	330.08	5.71051E-02	26.07		
m	28	334.44	1.65311E-02	27.19		
m	29	338.47	4.44889E-02	26.13		
M	31	402.07	2.82640E-01	4.12		
m	32	405.04	1.52290E-01	6.30		
	33	445.04	5.03889E-02	23.45		
	34	580.48	3.92778E-02	18.61		
	36	665.83	1.49167E-01	6.22		
	37	703.42	4.32222E-02	19.07	Sum	
	38	720.37	3.44306E-02	19.10		

Analysis Report for 590213 Set#6

TetraTech TO#160115-1 Set#6

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	39	768.81	4.70958E-01	3.32		
	40	786.43	1.02778E-01	10.72		
	41	806.58	9.99722E-02	8.29		
	42	832.33	2.27222E-02	40.55		
	43	839.47	1.15833E-02	66.97		
	44	934.58	2.26028E-01	4.71		
	46	1155.79	1.00139E-01	7.82		
	47	1208.42	3.20278E-02	22.03		
	48	1238.79	3.40278E-01	3.27		
	49	1281.62	7.51111E-02	8.87		
M	50	1378.35	2.25979E-01	3.87		
m	51	1385.92	4.12323E-02	10.58		
M	52	1402.21	6.74850E-02	7.73		
m	53	1408.70	1.21506E-01	5.49		
	54	1510.11	1.05806E-01	7.92		
	55	1583.74	2.96806E-02	17.08		
	56	1662.05	3.90000E-02	11.19		
	57	1730.34	1.36597E-01	5.03	Sum	
	59	1848.16	7.17639E-02	8.02		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	2.89E+03	7.67E+03	7.67E+03
+	BI-214	609.31	*	44.80	1.14E+05	1.34E+03	1.34E+03
		1120.29	*	14.80	1.13E+05		3.90E+03
		1764.49	*	15.36	1.15E+05		2.65E+03
+	PB-214	295.21	*	18.50	1.16E+05	1.90E+03	2.38E+03
		351.92	*	35.80	1.27E+05		1.90E+03
+	RA-226	186.10	*	3.50	1.43E+05	1.91E+04	1.91E+04

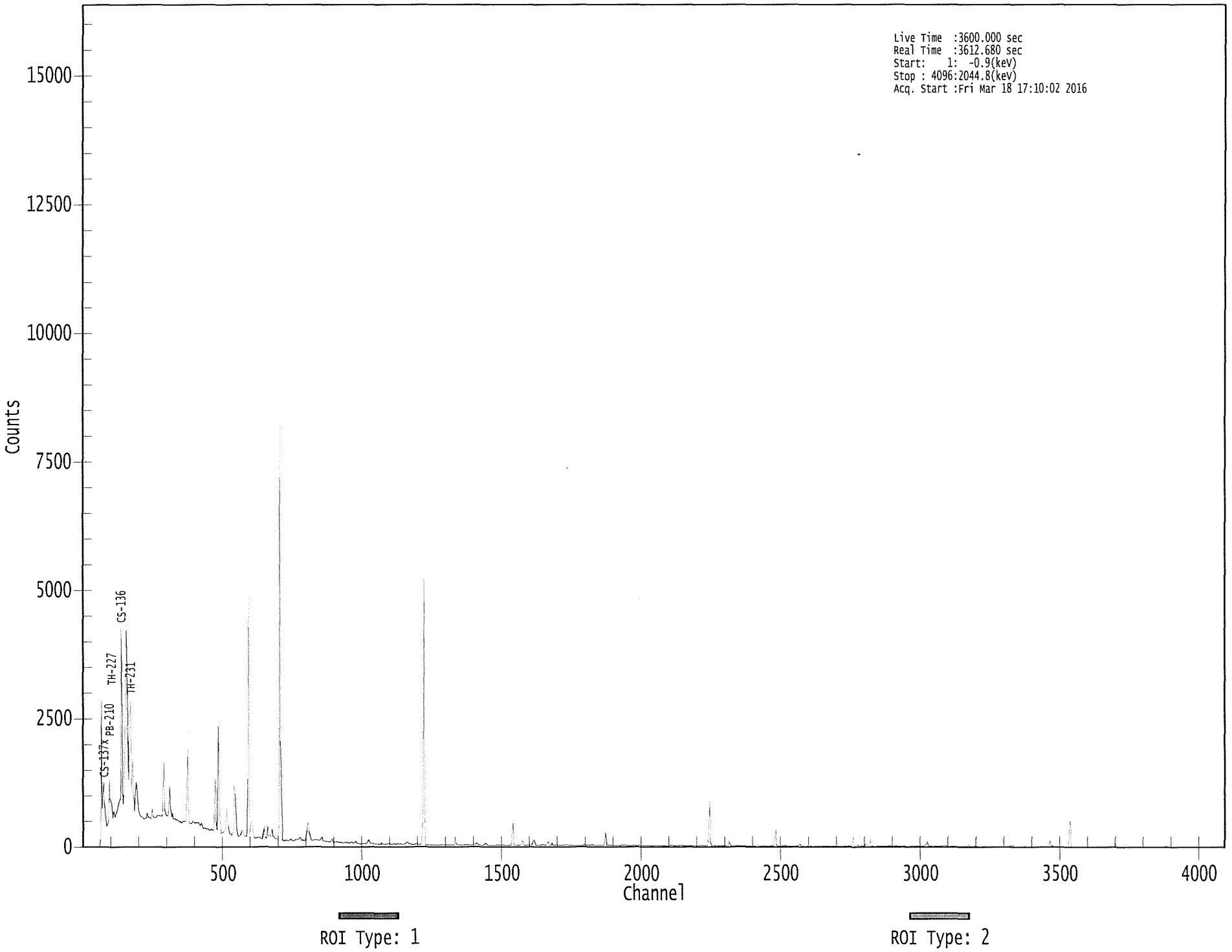
Analysis Report for 590213 Set#6

TetraTech TO#160115-1 Set#6

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 590214 Set#6

TetraTech TO#160115-1 Set#6

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 590214 Set#6
Sample Description	: TetraTech TO#160115-1 Set#6
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/18/2016 10:50:07AM
Acquisition Started	: 3/18/2016 6:16:09PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3602.8 seconds
Dead Time	: 0.08 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7180

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/Each)	Wt mean Activity Uncertainty	Comments
BI-214	0.968	1.04E+04	3.88E+02	
PB-214	0.998	1.24E+04	6.30E+02	
RA-226	0.997	5.40E+04	3.78E+03	

Analysis Report for 590214 Set#6

TetraTech TO#160115-1 Set#6

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:46:19PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	46.65	2.86044E-02	51.25		
	2	50.24	8.37361E-02	14.87		
	3	63.34	3.06445E-01	7.37		
	4	67.76	1.41222E-01	13.10		
M	5	74.79	-7.57027E-02	- 16.3		
m	6	77.28	-1.43353E-01	- 14.2		
M	7	81.18	1.83524E-01	6.49		
m	8	83.90	4.53227E-01	3.35		
M	9	92.69	5.27740E-01	2.95		
m	10	94.70	1.51760E-01	6.56		
	11	144.05	2.05931E-01	7.33		
	12	154.27	1.11333E-01	12.05		
	14	236.16	1.13069E-01	10.01		
	15	242.10	1.89444E-02	58.52		
	16	256.33	1.41111E-01	8.80		
M	17	269.60	1.81462E-01	4.58		
m	18	271.39	1.40020E-01	5.31		
m	20	300.07	6.13433E-02	8.52		
m	21	302.86	3.94456E-02	10.84		
	22	324.04	3.27777E-03	228.69		
	23	330.12	2.22778E-02	32.93		
M	25	402.08	6.65521E-02	7.55		
m	26	405.03	4.04322E-02	10.21		
	28	768.77	5.13333E-02	10.40		
	29	832.34	1.59722E-02	21.49		
	30	934.60	2.78056E-02	12.89		
	32	1238.72	3.26389E-02	11.01		
	33	1378.36	1.28056E-02	21.91		

Analysis Report for 590214 Set#6

TetraTech TO#160115-1 Set#6

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

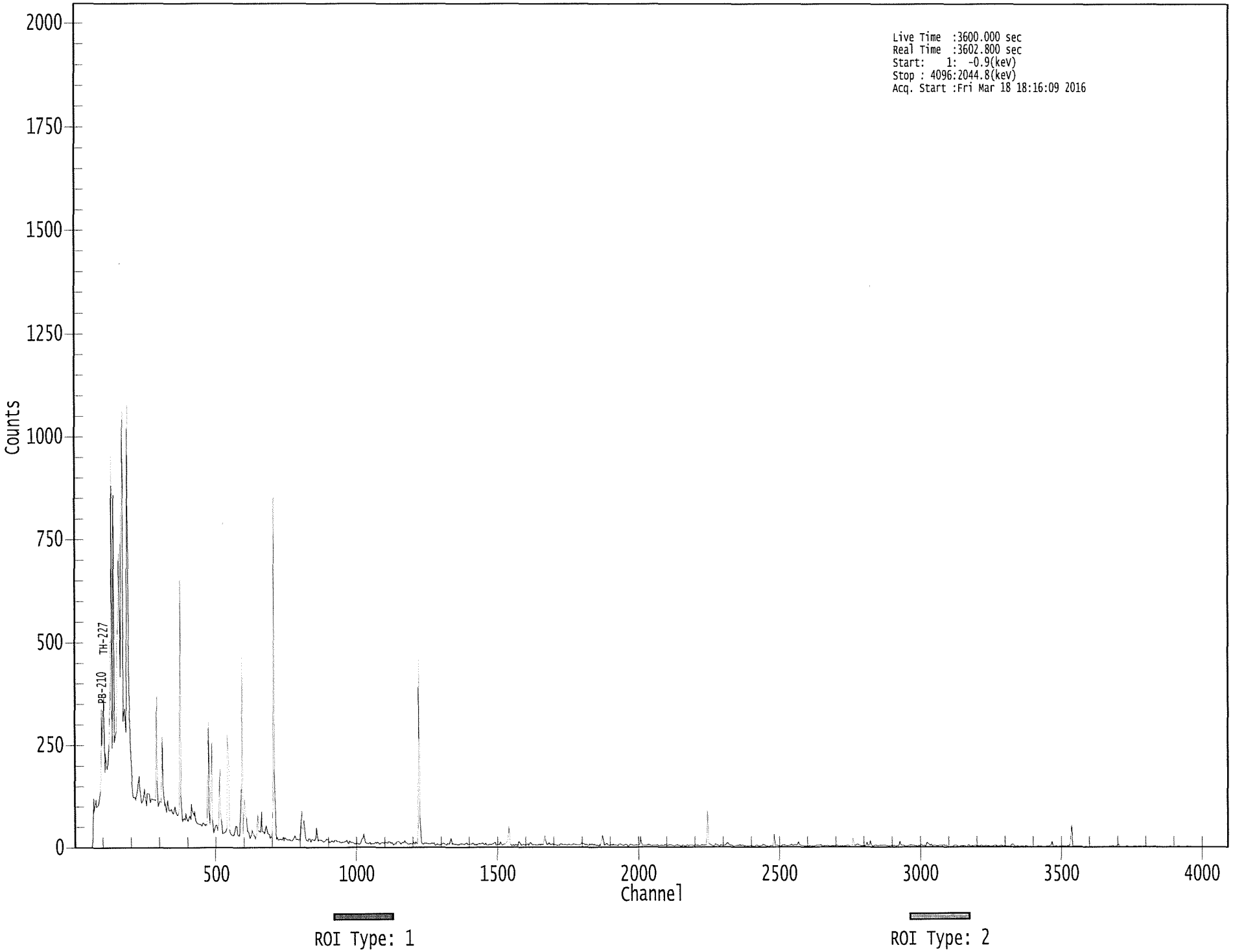
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	8.53E+02	3.41E+03	3.41E+03
+	BI-214	609.31	*	44.80	1.04E+04	4.43E+02	4.43E+02
		1120.29	*	14.80	1.06E+04		1.44E+03
		1764.49	*	15.36	1.04E+04		1.05E+03
+	PB-214	295.21	*	18.50	1.13E+04	6.31E+02	9.09E+02
		351.92	*	35.80	1.40E+04		6.31E+02
+	RA-226	186.10	*	3.50	5.40E+04	8.23E+03	8.23E+03

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

0000007180.CNF



011267

Apex™

Analysis Report for 591000 Set#6

TetraTech TO#160115-1 Set#6

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 591000 Set#6
Sample Description	: TetraTech TO#160115-1 Set#6
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/18/2016 10:51:28AM
Acquisition Started	: 3/18/2016 7:21:27PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3616.4 seconds
Dead Time	: 0.45 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7178

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.946	1.58E+05	3.86E+03	
PB-214	0.995	1.66E+05	7.83E+03	
RA-226	0.994	2.13E+05	1.34E+04	

Analysis Report for 591000 Set#6

TetraTech TO#160115-1 Set#6

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:45:43PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.17	2.22097E+00	1.51		
	2	36.40	-4.86111E-02	- 65.6		
	3	46.63	8.94077E-01	3.67		
M	4	50.03	-1.17778E-01	- 9.3		
m	5	53.30	-3.67805E-01	- 8.0		
	6	67.76	2.51494E+00	1.96		
M	7	74.90	5.86212E-01	4.39		
m	8	77.17	1.22173E+00	4.29		
m	9	81.16	1.94737E-01	5.23		
m	10	83.89	5.78971E-01	4.39		
m	11	87.35	3.54827E-01	4.57		
m	12	89.84	7.96585E-02	8.14		
	13	94.74	-8.30833E-01	- 6.5		
	14	144.12	7.85639E-01	3.98		
	15	154.30	4.33167E-01	6.41		
	17	236.14	-8.82986E-01	- 4.1		
	18	242.17	1.71944E+00	2.05		
M	19	256.36	3.71615E-01	4.25		
m	20	259.16	1.23123E-01	9.56		
M	21	269.66	7.25194E-01	2.49		
m	22	271.43	5.93034E-01	2.83		
m	23	274.75	1.10947E-01	9.83		
	24	286.56	4.32778E-02	36.52		
m	26	300.23	2.09835E-01	5.32		
m	27	302.80	1.08016E-01	9.19		
	28	324.03	1.05167E-01	14.54		
	29	330.16	3.94028E-02	46.66		
	30	338.49	7.07083E-02	21.69		
	32	386.93	1.05389E-01	18.85		
M	33	402.07	2.41609E-01	4.99		
m	34	405.25	1.93697E-01	5.85		
	35	427.52	6.86806E-02	26.20		
	36	480.69	1.92500E-02	60.40		
	37	487.43	2.66667E-02	40.54		

Analysis Report for 591000 Set#6

TetraTech TO#160115-1 Set#6

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	38	580.48	5.20000E-02	20.49		
	40	665.84	2.07389E-01	6.90		
	41	703.39	5.86111E-02	14.62	Sum	
	42	720.42	3.97222E-02	19.98		
	43	768.81	6.02083E-01	3.07		
	44	786.41	1.34931E-01	8.09		
	45	806.74	1.27736E-01	9.84		
	46	832.58	2.57778E-02	36.55		
	47	839.55	1.08056E-02	94.92		
	48	934.63	3.18986E-01	4.41		
	49	964.72	3.44861E-02	21.72		
	50	1052.69	3.44444E-02	25.89		
	52	1155.81	1.35778E-01	7.36		
	53	1208.46	2.14306E-02	30.64		
	54	1238.86	4.87028E-01	2.79		
	55	1281.60	1.19653E-01	8.24		
M	56	1378.47	3.01058E-01	3.32		
m	57	1386.10	5.02543E-02	9.70		
M	58	1402.35	1.01946E-01	6.17		
m	59	1408.84	1.81206E-01	4.41		
	60	1510.02	1.48333E-01	6.26		
	61	1584.17	5.03611E-02	16.03		
	62	1662.13	6.21667E-02	8.59		
	63	1730.45	1.75597E-01	4.54	Sum	
	65	1848.41	1.03806E-01	6.87		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	3.04E+03	8.58E+03	8.58E+03
+	BI-214	609.31	*	44.80	1.57E+05	1.28E+03	1.28E+03
		1120.29	*	14.80	1.63E+05		4.85E+03
		1764.49	*	15.36	1.55E+05		3.18E+03
+	PB-214	295.21	*	18.50	1.61E+05	2.09E+03	2.75E+03

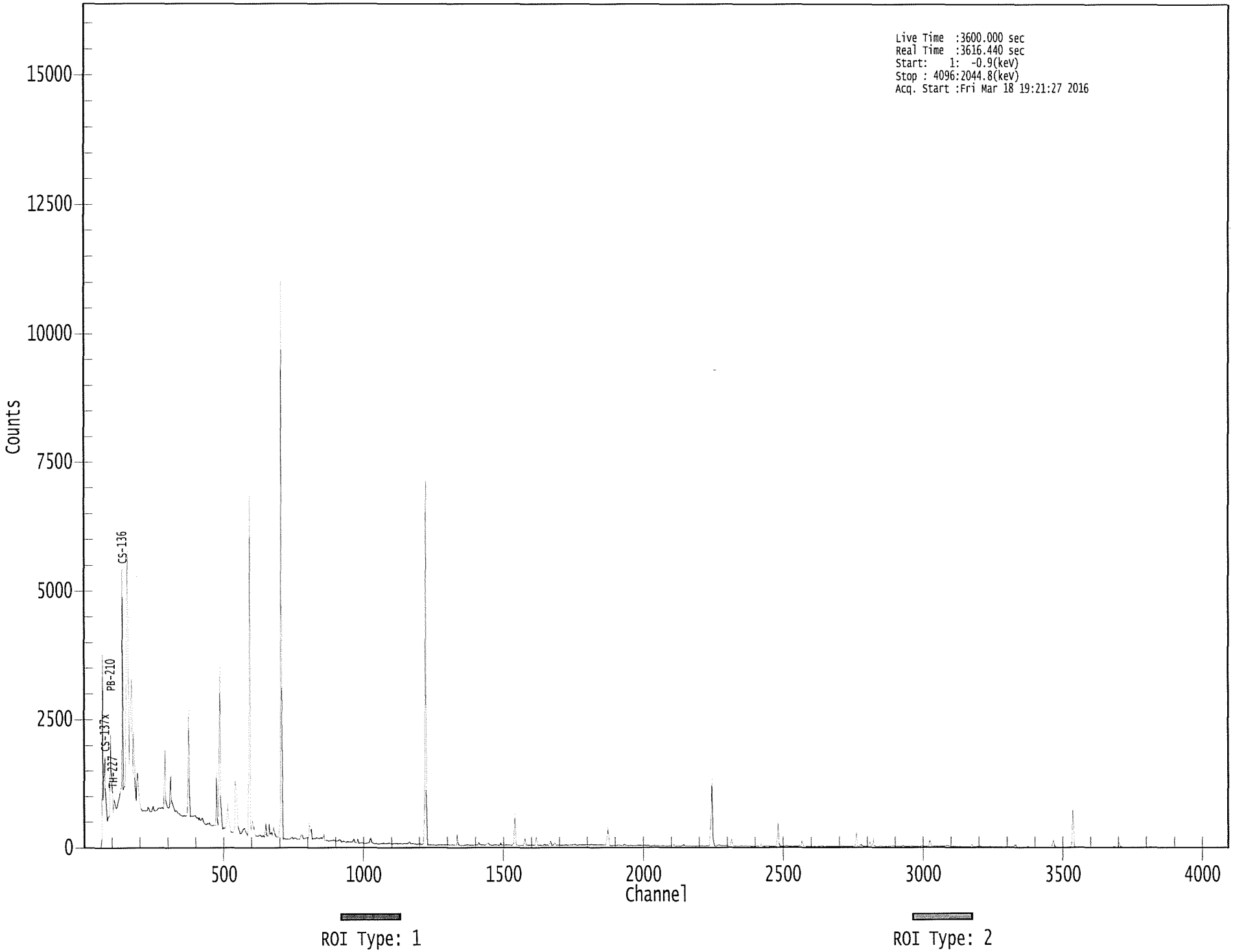
Analysis Report for 591000 Set#6

TetraTech TO#160115-1 Set#6

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	PB-214	351.92	*	35.80	1.73E+05	2.09E+03	2.09E+03
+	RA-226	186.10	*	3.50	2.13E+05	2.45E+04	2.45E+04

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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011272

Southwest Research Institute, Division 1, Radiochemistry

011273

Gamma Spectroscopy Summary Sheet (1 sig)

Client: Tetra Tech (Set#7)
Task Order: 160115-1
Prep Page: N/A
Prep Date: N/A
Notes: JR 4/19/16 ✓ RSpin 4/19/16

Project #: 21431.01.001
SRR: 56591, 56639, 56785, 56876
TPU sig factor: 1
Units: g

Sample ID 588049 | Sample # 7176 | Sample Size 1 Each | Date Analyzed 3/18/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	56.42	100.00%	1	2.92E+03	7.12E+01	3.06E+01	1.98E+01		
^{214}Pb	56.42	100.00%	1	3.11E+03	1.47E+02	3.97E+01	1.89E+01		
^{226}Ra	56.42	100.00%	1	3.79E+03	2.41E+02	4.69E+02	1.12E+02		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 588556 | Sample # 7174 | Sample Size 1 Each | Date Analyzed 3/18/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	54.67	100.0%	1	1.78E+03	4.53E+01	2.10E+01	1.56E+01		
^{214}Pb	54.67	100.00%	1	1.90E+03	9.01E+01	3.22E+01	1.50E+01		
^{226}Ra	54.67	100.00%	1	2.31E+03	1.50E+02	2.99E+02	7.51E+01		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 588556D | Sample # 7172 | Sample Size 1 Each | Date Analyzed 3/19/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RPDs	DER	
^{214}Bi	50.97	100.0%	1	1.75E+03	4.46E+01	1.59E+01	1.57E+01		2.0	0.6	Pass
^{214}Pb	50.97	100.00%	1	1.86E+03	8.80E+01	3.14E+01	1.52E+01		2.4	0.4	Pass
^{226}Ra	50.97	100.00%	1	2.27E+03	1.57E+02	3.84E+02	9.16E+01		1.8	0.2	Pass

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.
Duplicate Evaluation = (Sample-Duplicate) / sqrt ((TPUsample^2) + (TPUdup^2)) # 3

Sample ID 590212 | Sample # 7170 | Sample Size 1 Each | Date Analyzed 3/19/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	56.40	100.00%	1	3.57E+03	8.61E+01	2.65E+01	2.17E+01		
^{214}Pb	56.40	100.00%	1	3.72E+03	1.75E+02	3.78E+01	2.01E+01		
^{226}Ra	56.40	100.00%	1	4.38E+03	2.72E+02	4.72E+02	1.14E+02		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Note: Ra 226 is not reported from this spreadsheet. JR 4/1 2016

011274

Southwest Research Institute, Division 1, Radiochemistry

Gamma Spectroscopy Summary Sheet (1 sig)

Client: Tetra Tech (Set#7)
Task Order: 160115-1
Prep Page: N/A
Prep Date: N/A

Project #: 21431.01.001
SRR: 56591, 56639, 56785, 56876
TPU sig factor: 1
Units: g

Notes: _____

Sample ID 590213 | Sample # 7168 | Sample Size 1 Each | Date Analyzed 3/19/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	55.00	100.00%	1	1.68E+03	4.28E+01	1.94E+01	1.51E+01		
^{214}Pb	55.00	100.00%	1	1.73E+03	8.21E+01	2.68E+01	1.38E+01		
^{226}Ra	55.00	100.00%	1	2.29E+03	1.47E+02	2.75E+02	7.05E+01		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 590214 | Sample # 7166 | Sample Size 1 Each | Date Analyzed 3/19/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	52.58	100.00%	1	1.49E+02	5.96E+00	6.97E+00	4.63E+00		
^{214}Pb	52.58	100.00%	1	1.69E+02	8.82E+00	1.19E+01	4.63E+00		
^{226}Ra	52.58	100.00%	1	6.98E+02	5.00E+01	1.03E+02	9.27E+01		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 591000 | Sample # 7164 | Sample Size 1 Each | Date Analyzed 3/19/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	53.34	100.00%	1	1.66E+03	4.25E+01	1.77E+01	1.52E+01		
^{214}Pb	53.34	100.00%	1	1.70E+03	8.06E+01	2.46E+01	1.39E+01		
^{226}Ra	53.34	100.00%	1	2.02E+03	1.33E+02	2.68E+02	6.83E+01		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

011275

Analysis Report for 588049 Set#7

Tetra Tech TO#160115-1 Set#7

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 588049 Set#7
Sample Description	: Tetra Tech TO#160115-1 Set#7
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/18/2016 10:07:29PM
Acquisition Started	: 3/18/2016 10:08:22PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3617.6 seconds
Dead Time	: 0.49 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7176

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/Each)	Wt mean Activity Uncertainty	Comments
BI-214	0.938	1.65E+05	4.02E+03	
PB-214	0.994	1.76E+05	8.27E+03	
RA-226	0.994	2.14E+05	1.36E+04	

011276

Analysis Report for 588049 Set#7

Tetra Tech TO#160115-1 Set#7

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:44:52PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.21	2.05361E+00	1.61		
	2	36.37	6.79167E-02	47.22		
	3	46.66	3.10202E-01	9.18		
	4	67.76	1.74933E+00	2.58		
M	5	74.91	5.64796E-01	4.01		
m	6	77.18	1.19203E+00	3.89		
m	7	81.16	2.76091E-01	4.43		
m	8	83.89	7.21977E-01	3.95		
m	9	87.34	3.31435E-01	4.25		
	10	94.73	-1.95557E-02	- 168.0		
	11	144.17	9.29750E-01	4.63		
	12	154.33	6.16736E-01	5.21		
	14	236.16	-6.11319E-01	- 6.4		
	15	242.18	1.47903E+00	2.65		
M	16	256.39	5.01735E-01	3.48		
m	17	259.10	1.53871E-01	8.44		
M	18	269.67	9.96509E-01	2.07		
m	19	271.41	7.69619E-01	2.43		
M	20	283.88	1.05155E-01	10.97		
m	21	286.28	1.01249E-01	11.18		
m	23	300.19	3.00007E-01	4.53		
m	24	302.74	1.78601E-01	6.68		
	25	324.08	2.50000E-02	95.84		
	26	330.09	8.18056E-02	22.90		
	27	338.64	1.07083E-01	16.44		
	29	389.25	1.49778E-01	12.92		
M	30	402.09	3.75692E-01	3.67		
m	31	405.22	2.60941E-01	4.70		
	32	427.41	1.17389E-01	18.89		
	33	445.22	3.15278E-02	40.45		
	34	455.11	1.90833E-02	81.38		
	35	480.65	3.19444E-03	387.01		
	36	487.42	8.23056E-02	13.36		
	38	665.87	2.02389E-01	5.98		

Analysis Report for 588049 Set#7

Tetra Tech TO#160115-1 Set#7

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	39	703.40	6.69028E-02	15.48	Sum	
	40	720.24	6.69167E-02	16.94		
	41	768.89	6.50833E-01	2.97		
	42	786.55	1.20250E-01	8.68		
	43	806.76	1.28500E-01	9.82		
	44	832.51	6.11667E-02	16.78		
	45	839.73	2.24999E-03	463.38		
	46	934.69	3.34111E-01	4.08		
	47	964.66	2.95417E-02	23.04		
	48	1070.53	3.17500E-02	28.71		
	50	1156.00	1.44972E-01	7.06		
	51	1238.86	5.23750E-01	2.70		
	52	1281.86	1.25722E-01	8.23		
M	53	1378.52	3.11431E-01	3.28		
m	54	1386.20	7.11537E-02	7.79		
M	55	1402.36	1.02494E-01	6.27		
m	56	1408.90	1.84421E-01	4.45		
	57	1510.28	1.48194E-01	6.36		
	58	1584.20	4.99167E-02	12.59		
	59	1600.50	1.29167E-02	37.67		
	60	1662.31	8.83333E-02	6.93		
	61	1730.61	2.06292E-01	4.20	Sum	
	63	1839.23	1.22222E-03	360.84		
	64	1848.41	1.17486E-01	6.56		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	-6.54E+02	8.54E+03	8.54E+03
+	BI-214	609.31	*	44.80	1.64E+05	1.73E+03	1.73E+03
		1120.29	*	14.80	1.67E+05		4.81E+03
		1764.49	*	15.36	1.64E+05		3.74E+03
+	PB-214	295.21	*	18.50	1.70E+05	2.24E+03	3.01E+03
		351.92	*	35.80	1.82E+05		2.24E+03

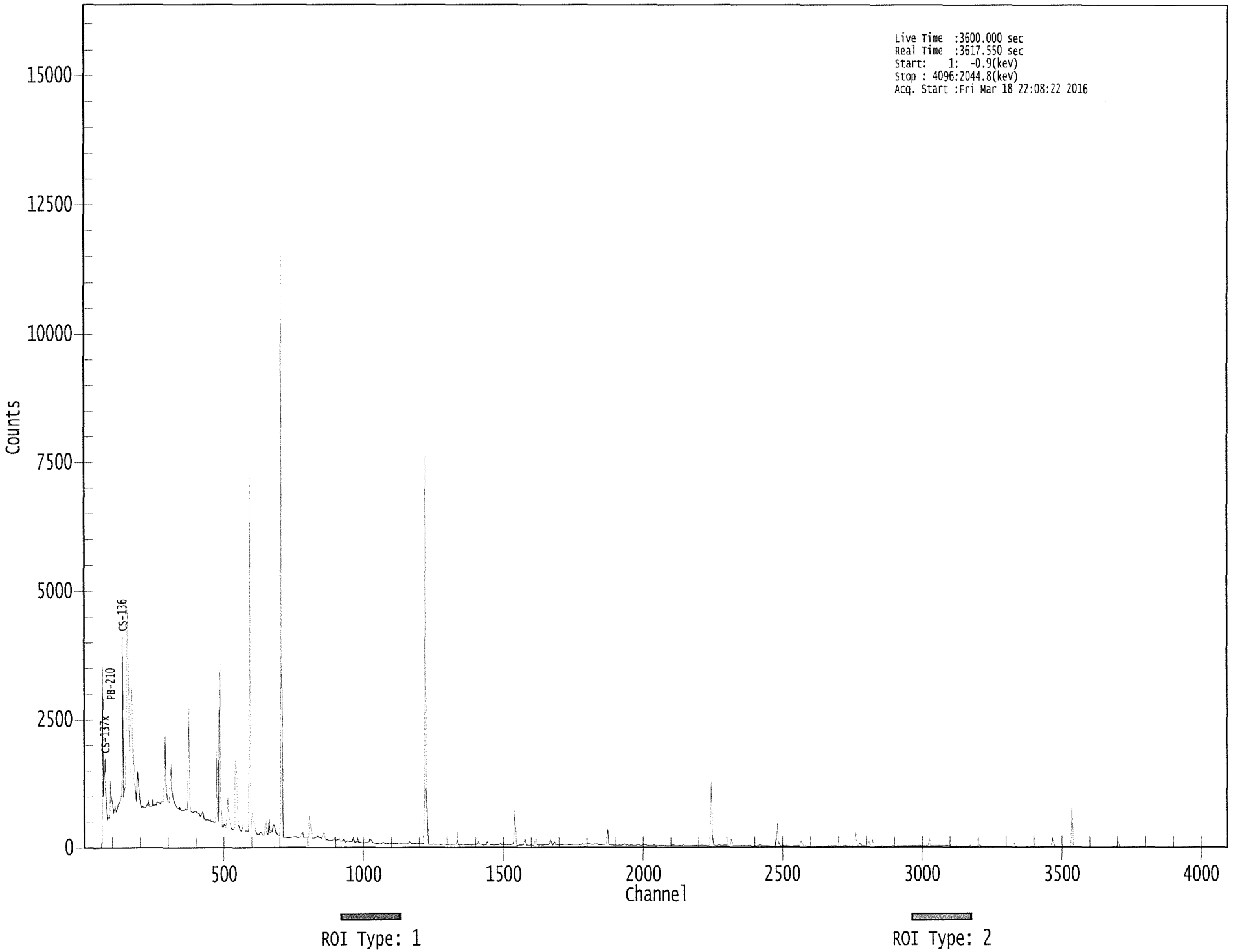
Analysis Report for 588049 Set#7

Tetra Tech TO#160115-1 Set#7

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
+	RA-226	186.10	*	3.50	2.14E+05	2.65E+04	2.65E+04

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

0000007176.CNF



011273

Apex™

Analysis Report for 588556 Set#7

Tetra Tech TO#160115-1 Set#7

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 588556 Set#7
Sample Description	: Tetra Tech TO#160115-1 Set#7
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/18/2016 11:17:54PM
Acquisition Started	: 3/18/2016 11:18:07PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3611.1 seconds
Dead Time	: 0.31 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7174

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.947	9.74E+04	2.48E+03	
PB-214	0.996	1.04E+05	4.92E+03	
RA-226	0.994	1.26E+05	8.22E+03	

Analysis Report for 588556 Set#7

Tetra Tech TO#160115-1 Set#7

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:44:19PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.19	1.22088E+00	2.15		
	2	36.35	5.00000E-02	49.67		
	3	46.62	1.86854E-01	13.01		
	4	50.15	-1.10695E-02	- 168.5		
	5	67.78	1.47339E+00	2.17		
M	6	74.92	2.48639E-01	7.10		
m	7	77.16	5.18806E-01	6.97		
M	8	81.10	-7.07198E-02	- 8.4		
m	9	83.82	-9.22509E-01	- 5.4		
m	10	87.34	-3.31211E-01	- 5.5		
m	11	90.03	-1.65322E-02	- 25.6		
	12	94.71	-3.00000E-02	- 95.4		
	13	144.10	6.39389E-01	5.83		
	14	154.29	3.12000E-01	10.61		
	16	236.16	-1.42556E-01	- 18.9		
	17	242.16	1.00208E+00	2.68		
M	18	256.40	3.11853E-01	4.44		
m	19	259.19	9.15615E-02	10.86		
M	20	269.64	6.22034E-01	2.65		
m	21	271.45	4.83680E-01	3.10		
	22	283.77	-3.11140E+00	- 1.3		
m	24	300.19	1.90325E-01	5.67		
m	25	302.74	9.32472E-02	9.80		
	26	324.17	3.44444E-02	42.01		
	27	330.07	6.91111E-02	23.81		
	28	338.61	5.58333E-02	22.76		
M	30	402.04	2.37168E-01	4.61		
m	31	405.28	1.48639E-01	6.36		
	32	427.26	6.27778E-02	20.29		
	33	487.59	3.20833E-02	34.47		
	35	665.82	1.29056E-01	7.36		
	36	703.52	5.85278E-02	17.00	Sum	
	37	768.82	3.88708E-01	3.38		
	38	786.28	8.57639E-02	10.14		

Analysis Report for 588556 Set#7

Tetra Tech TO#160115-1 Set#7

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	39	806.66	9.15278E-02	8.39		
	40	832.53	2.20000E-02	43.15		
	41	839.29	7.50000E-03	102.84		
	42	934.66	1.95694E-01	5.21		
	43	1052.58	2.06111E-02	27.39		
	45	1155.86	8.62222E-02	8.26		
	46	1238.81	2.98472E-01	3.47		
	47	1281.64	7.52778E-02	10.33		
M	48	1378.40	1.89520E-01	4.20		
m	49	1386.00	3.90765E-02	10.53		
M	50	1402.22	5.38825E-02	8.90		
m	51	1408.76	9.71992E-02	6.17		
	52	1509.99	9.60972E-02	9.17		
	53	1584.01	3.20833E-02	15.56		
	54	1662.23	4.89861E-02	9.20		
	55	1730.55	1.25792E-01	5.30	Sum	
	57	1848.51	6.94722E-02	8.05		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

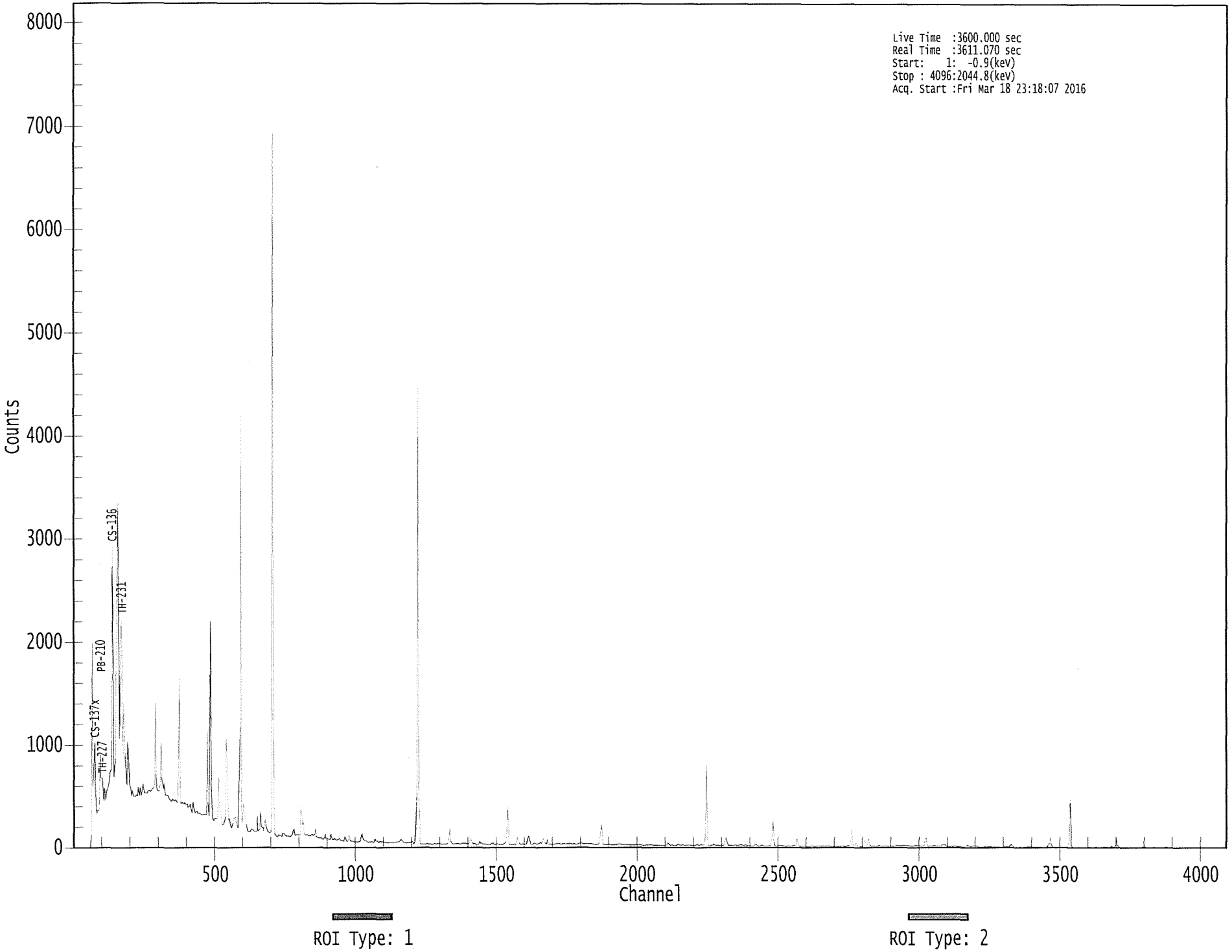
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	1.99E+02	6.87E+03	6.87E+03
+	BI-214	609.31	*	44.80	9.61E+04	1.15E+03	1.15E+03
		1120.29	*	14.80	9.76E+04		5.02E+03
		1764.49	*	15.36	9.85E+04		2.37E+03
+	PB-214	295.21	*	18.50	1.00E+05	1.76E+03	2.40E+03
		351.92	*	35.80	1.09E+05		1.76E+03
+	RA-226	186.10	*	3.50	1.26E+05	1.64E+04	1.64E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 588556D Set#7

Tetra Tech TO#160115-1 Set#7

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 588556D Set#7
Sample Description	: Tetra Tech TO#160115-1 Set#7
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/19/2016 1:09:46AM
Acquisition Started	: 3/19/2016 1:10:03AM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3610.4 seconds
Dead Time	: 0.29 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7172

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.942	8.90E+04	2.27E+03	
PB-214	0.995	9.47E+04	4.49E+03	
RA-226	0.994	1.16E+05	8.02E+03	

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Analysis Report for 588556D Set#7

Tetra Tech TO#160115-1 Set#7

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:43:40PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.17	1.18996E+00	2.17		
	2	36.43	-4.25972E-02	- 60.0		
	3	46.59	3.23271E-01	7.69		
	4	50.11	-6.13194E-02	- 30.8		
	5	67.78	1.38013E+00	3.07		
M	6	74.89	1.80029E-01	9.51		
m	7	77.19	4.06693E-01	9.37		
M	8	81.09	-8.84940E-02	- 11.0		
m	9	83.83	-1.09026E+00	- 5.0		
m	10	87.33	-2.89970E-01	- 6.0		
	11	94.78	8.33333E-03	341.32		
	12	144.16	5.68111E-01	5.21		
	13	154.33	3.38111E-01	6.68		
	15	236.16	-2.53833E-01	- 11.2		
	16	242.14	8.51028E-01	3.34		
M	17	256.46	2.98575E-01	4.34		
m	18	259.11	6.81127E-02	13.10		
M	19	269.65	5.53432E-01	2.82		
m	20	271.42	4.37351E-01	3.28		
	21	283.79	1.50000E-01	12.97		
m	23	300.21	1.71860E-01	5.83		
m	24	302.93	1.02328E-01	8.58		
	25	324.06	2.62778E-02	65.55		
	26	330.13	3.26111E-02	47.97		
M	27	338.57	3.58057E-02	32.89		
m	28	342.97	1.74166E-02	33.29		
M	30	402.14	1.94744E-01	5.21		
m	31	405.22	1.30810E-01	6.81		
	32	427.63	6.36111E-02	21.82		
	33	480.83	3.41666E-03	308.67	Sum	
	35	665.90	1.02944E-01	7.93		
	36	768.87	3.34083E-01	3.43		
	37	786.52	7.47361E-02	10.28		
	38	806.74	6.90556E-02	12.69		

Analysis Report for 588556D Set#7

Tetra Tech TO#160115-1 Set#7

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	39	832.69	2.81250E-02	30.41		
	40	839.48	-8.88889E-03	- 92.2		
	41	934.71	1.87306E-01	5.68		
	43	1156.02	7.24861E-02	9.22		
	44	1238.92	2.72194E-01	3.80		
	45	1281.76	6.25000E-02	9.23		
	46	1378.52	1.53056E-01	5.69		
M	47	1402.44	6.57330E-02	7.52		
m	48	1408.81	9.81118E-02	6.05		
	49	1509.94	9.44444E-02	7.88		
	50	1662.23	3.43333E-02	13.34		
	51	1730.56	1.06472E-01	5.78	Sum	
	53	1848.31	5.86667E-02	9.09		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

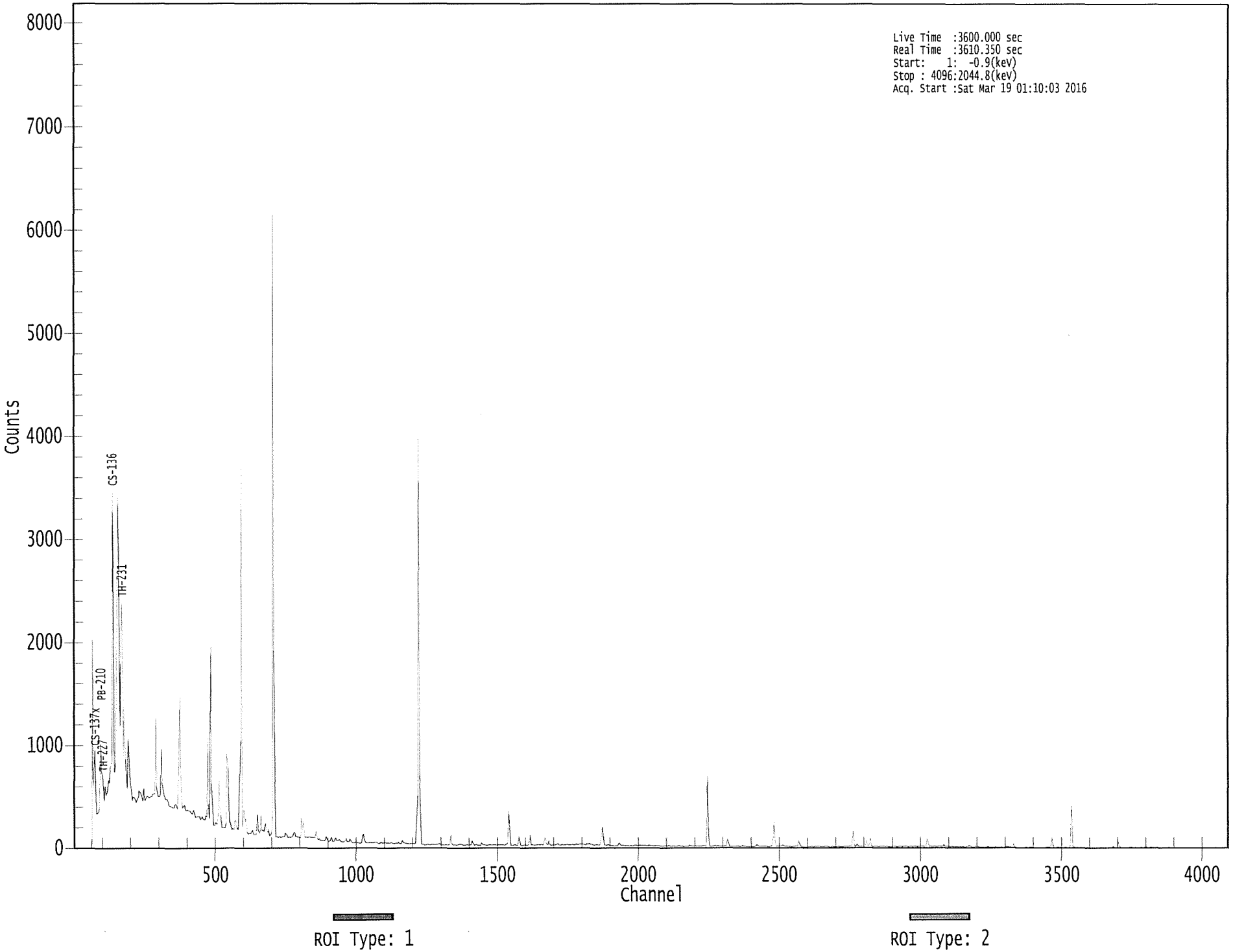
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	-2.12E+03	6.42E+03	6.42E+03
+	BI-214	609.31	*	44.80	8.78E+04	8.08E+02	8.08E+02
		1120.29	*	14.80	8.97E+04		3.01E+03
		1764.49	*	15.36	8.95E+04		2.57E+03
+	PB-214	295.21	*	18.50	9.10E+04	1.60E+03	2.21E+03
		351.92	*	35.80	9.95E+04		1.60E+03
+	RA-226	186.10	*	3.50	1.16E+05	1.96E+04	1.96E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 590212 Set#7

Tetra Tech TO#160115-1 Set#7

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 590212 Set#7
Sample Description	: Tetra Tech TO#160115-1 Set#7
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/19/2016 1:10:50AM
Acquisition Started	: 3/19/2016 2:18:02AM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3621.0 seconds
Dead Time	: 0.58 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7170

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.945	2.01E+05	4.85E+03	
PB-214	0.995	2.10E+05	9.88E+03	
RA-226	0.994	2.47E+05	1.54E+04	

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Analysis Report for 590212 Set#7

Tetra Tech TO#160115-1 Set#7

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:42:58PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.14	2.64894E+00	1.43		
	2	36.36	-1.05125E-01	- 35.2		
	3	46.60	3.61007E-01	9.10		
	4	50.14	-8.48333E-02	- 31.7		
	5	67.78	2.25211E+00	2.23		
M	6	74.93	6.05991E-01	4.10		
m	7	77.17	1.31787E+00	3.99		
m	8	81.13	3.24633E-01	4.42		
m	9	83.90	8.31452E-01	4.03		
m	10	87.35	3.47067E-01	4.35		
m	11	89.88	3.44544E-02	18.01		
M	12	94.73	-4.42992E-01	- 13.0		
m	13	97.84	-9.95250E-03	- 86.2		
	14	144.13	1.11976E+00	3.29		
	15	154.33	7.39125E-01	5.34		
	17	236.16	-7.02361E-01	- 6.1		
	18	242.17	1.77875E+00	2.41		
M	19	256.42	6.02060E-01	3.18		
m	20	259.04	1.94283E-01	7.34		
M	21	269.64	1.16962E+00	1.96		
m	22	271.42	9.12467E-01	2.29		
m	23	274.81	1.38397E-01	9.23		
	24	283.80	-2.15139E+00	- 2.0		
m	26	300.23	3.62882E-01	3.99		
m	27	302.93	1.94254E-01	6.33		
	28	324.04	1.17778E-01	17.33		
M	29	330.10	6.82645E-02	32.07		
m	30	334.48	1.29785E-02	33.68		
m	31	338.49	5.61180E-02	32.09		
	33	389.28	1.57222E-01	16.92		
M	34	402.09	4.22854E-01	3.46		
m	35	405.22	2.82117E-01	4.57		
	36	427.07	1.36292E-01	12.67		
	37	445.29	4.50555E-02	33.99		

Analysis Report for 590212 Set#7

Tetra Tech TO#160115-1 Set#7

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	38	455.18	3.10278E-02	51.51		
	39	480.83	-5.68334E-02	- 30.4	Sum	
	40	487.45	5.56111E-02	27.90		
	41	580.47	4.48611E-02	24.76		
	43	665.90	2.19375E-01	5.66		
	44	703.37	8.03611E-02	14.43	Sum	
	45	720.36	5.57917E-02	19.14		
	46	768.82	7.77583E-01	2.60		
	47	786.49	1.68542E-01	7.16		
	48	806.70	1.70500E-01	6.69		
	49	832.40	4.76667E-02	27.10		
	50	839.37	-9.20834E-03	- 122.6		
	51	934.65	4.05833E-01	3.59		
	52	964.92	4.20139E-02	22.87		
	53	1052.77	3.60000E-02	22.09		
	54	1070.53	2.30556E-02	29.60		
	56	1155.95	1.93931E-01	5.81		
	57	1208.42	4.36111E-02	17.47		
	58	1238.84	6.03944E-01	2.68		
	59	1281.81	1.59194E-01	5.66		
M	60	1378.53	3.72851E-01	2.98		
m	61	1386.16	7.48676E-02	7.70		
M	62	1402.34	1.20772E-01	5.88		
m	63	1408.86	2.18768E-01	4.11		
	64	1510.13	1.63333E-01	7.00		
M	65	1539.55	2.96705E-02	15.52		
m	66	1544.33	2.78107E-02	15.77		
	67	1584.28	5.86944E-02	13.22		
	68	1662.11	8.72222E-02	8.33		
	69	1730.47	2.30361E-01	3.93	Sum	
	71	1848.41	1.32472E-01	5.82		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

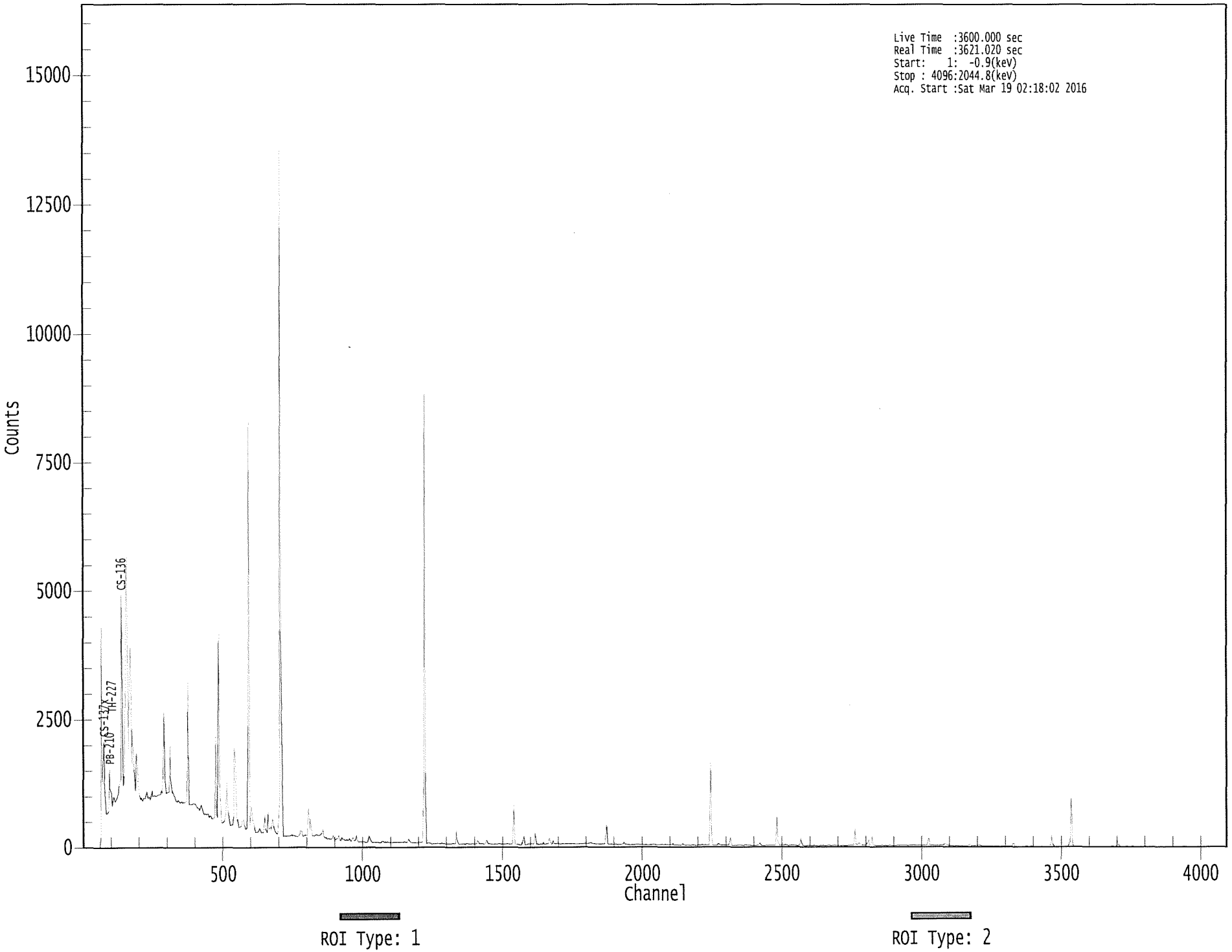
Analysis Report for 590212 Set#7

Tetra Tech TO#160115-1 Set#7

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	3.58E+03	9.91E+03	9.91E+03
+	BI-214	609.31	*	44.80	1.97E+05	1.49E+03	1.49E+03
		1120.29	*	14.80	2.03E+05		5.76E+03
		1764.49	*	15.36	2.03E+05		3.58E+03
+	PB-214	295.21	*	18.50	2.03E+05	2.13E+03	3.21E+03
		351.92	*	35.80	2.19E+05		2.13E+03
+	RA-226	186.10	*	3.50	2.47E+05	2.66E+04	2.66E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 590213 Set#7

Tetra Tech TO#160115-1 Set#7

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 590213 Set#7
Sample Description	: Tetra Tech TO#160115-1 Set#7
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/19/2016 1:11:31AM
Acquisition Started	: 3/19/2016 3:41:01AM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3610.7 seconds
Dead Time	: 0.29 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7168

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/Each)	Wt mean Activity Uncertainty	Comments
BI-214	0.943	9.25E+04	2.35E+03	
PB-214	0.995	9.54E+04	4.52E+03	
RA-226	0.994	1.26E+05	8.08E+03	

Analysis Report for 590213 Set#7

Tetra Tech TO#160115-1 Set#7

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:42:21PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.11	1.16847E+00	2.18		
	2	36.40	-7.87084E-02	- 32.2		
	3	46.61	3.01702E-01	8.34		
	4	50.26	-1.08333E-02	- 161.7		
	5	67.77	1.59956E+00	2.49		
M	6	74.89	1.80294E-01	9.33		
m	7	77.17	4.14706E-01	9.17		
M	8	81.12	-8.48244E-04	- 289.4		
m	9	83.83	-5.73550E-01	- 8.4		
m	10	87.30	-2.30768E-01	- 8.4		
	11	94.70	-7.98334E-02	- 44.3		
	12	144.13	6.39792E-01	5.40		
	13	154.34	3.45500E-01	7.08		
	15	236.18	-2.97361E-01	- 9.6		
	16	242.16	9.24944E-01	3.01		
M	17	256.35	3.08336E-01	4.40		
m	18	259.18	7.91395E-02	12.10		
M	19	269.68	5.66833E-01	2.82		
m	20	271.41	4.18098E-01	3.44		
	21	283.78	2.73750E-02	59.07		
m	23	300.19	1.63068E-01	6.07		
m	24	302.89	1.09231E-01	8.28		
	25	324.10	7.20417E-02	22.88		
	26	330.04	3.48611E-02	40.99		
	27	338.57	7.17361E-02	17.61		
	29	389.11	6.51111E-02	27.45		
M	30	402.08	2.14946E-01	4.88		
m	31	405.28	1.37709E-01	6.59		
	32	427.33	9.43333E-02	15.72		
	33	480.97	-1.62499E-03	- 644.0	Sum	
	34	580.54	3.01111E-02	28.28		
	36	665.86	1.14028E-01	8.10		
	37	768.87	3.49750E-01	3.61		
	38	786.42	7.99167E-02	12.05		

Analysis Report for 590213 Set#7

Tetra Tech TO#160115-1 Set#7

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	39	806.75	8.88889E-02	10.01		
	40	832.41	4.41528E-02	14.66		
	41	934.68	1.86111E-01	5.51		
	43	1155.93	7.83889E-02	9.62		
	44	1238.76	2.70153E-01	3.63		
	45	1281.64	7.78194E-02	9.40		
M	46	1378.47	1.64759E-01	4.51		
m	47	1386.27	3.48406E-02	11.26		
M	48	1402.41	5.57265E-02	8.55		
m	49	1408.88	1.04058E-01	5.85		
	50	1509.97	9.28750E-02	8.42		
	51	1584.04	2.68056E-02	18.37		
	52	1661.97	4.82500E-02	9.91		
	53	1730.37	1.10111E-01	5.56	Sum	
	55	1848.29	6.17778E-02	7.83		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

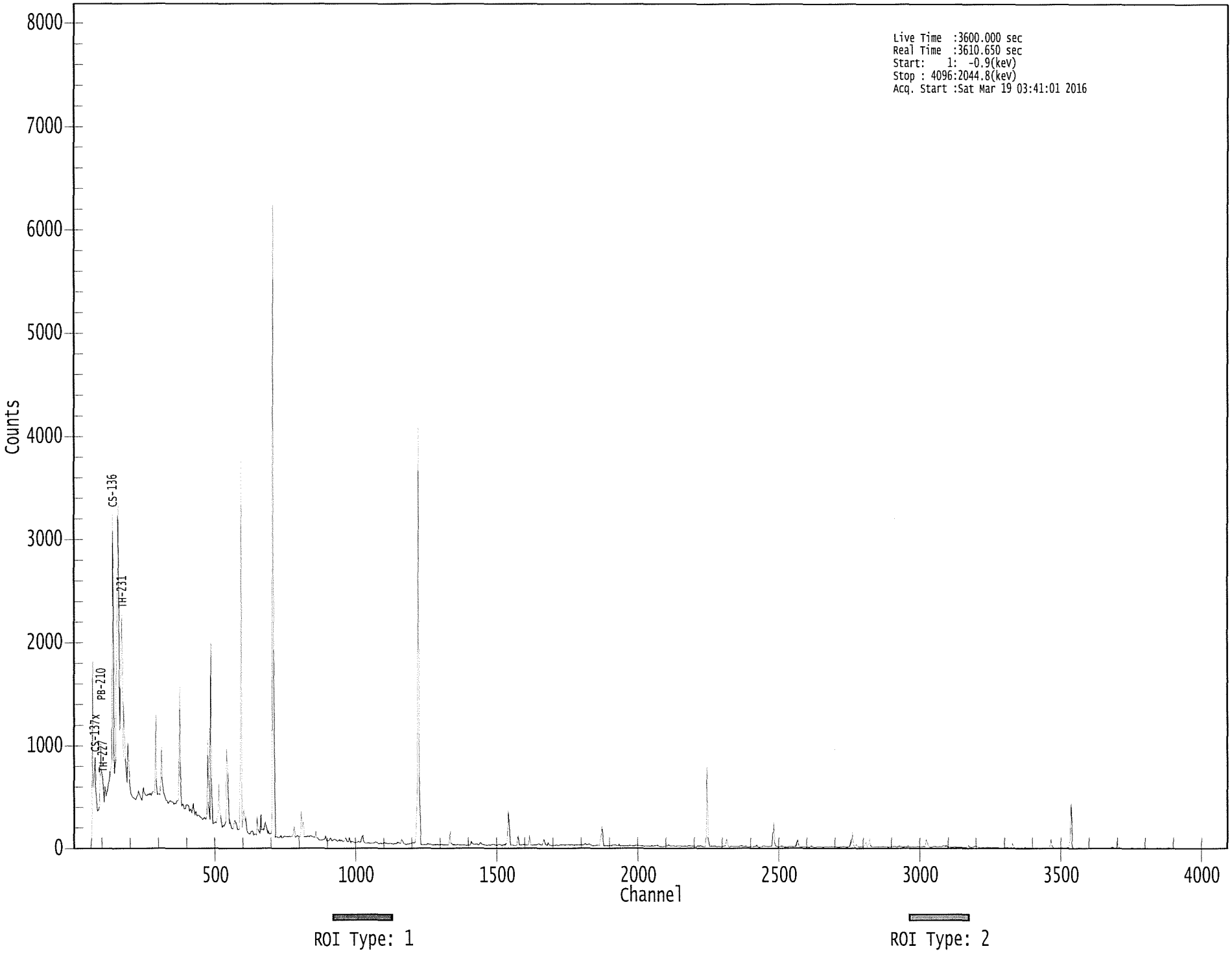
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	1.27E+03	6.97E+03	6.97E+03
+	BI-214	609.31	*	44.80	9.01E+04	1.07E+03	1.07E+03
		1120.29	*	14.80	9.33E+04		3.38E+03
		1764.49	*	15.36	9.40E+04		2.33E+03
+	PB-214	295.21	*	18.50	9.08E+04	1.48E+03	2.32E+03
		351.92	*	35.80	1.01E+05		1.48E+03
+	RA-226	186.10	*	3.50	1.26E+05	1.51E+04	1.51E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

0000007168.CNF



011296

Apex™

Analysis Report for 590214 Set#7

Tetra Tech TO#160115-1 Set#7

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 590214 Set#7
Sample Description	: Tetra Tech TO#160115-1 Set#7
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/19/2016 1:12:11AM
Acquisition Started	: 3/19/2016 6:56:23PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3602.2 seconds
Dead Time	: 0.06 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7166

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.954	7.86E+03	3.13E+02	
PB-214	0.998	8.87E+03	4.64E+02	
RA-226	0.996	3.67E+04	2.63E+03	

Analysis Report for 590214 Set#7

Tetra Tech TO#160115-1 Set#7

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:41:46PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	46.68	1.59100E-02	79.10		
	2	63.35	2.08945E-01	9.34		
	3	67.79	1.18389E-01	12.65		
M	4	74.79	-2.40537E-02	- 32.6		
m	5	77.22	-5.60574E-02	- 31.7		
M	6	81.17	6.26150E-02	10.84		
m	7	83.92	1.77732E-01	10.24		
	8	92.71	4.73502E-01	4.05		
	9	144.11	1.22181E-01	9.50		
	10	154.29	9.62778E-02	13.25		
	12	236.09	7.23750E-02	13.28		
	13	242.26	1.64444E-02	58.04		
	14	256.28	9.15972E-02	10.11		
M	15	269.63	1.28156E-01	5.57		
m	16	271.42	1.02372E-01	6.35		
m	18	300.18	3.43269E-02	12.37		
	19	324.24	5.48611E-03	106.42		
	20	330.22	2.08889E-02	30.17		
	21	338.51	1.39167E-02	33.77		
	23	402.06	4.41667E-02	13.32		
	25	768.57	3.97778E-02	10.61		
	27	1238.85	2.38333E-02	12.84		
	28	1378.62	1.84306E-02	14.21		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

Analysis Report for 590214 Set#7

Tetra Tech TO#160115-1 Set#7

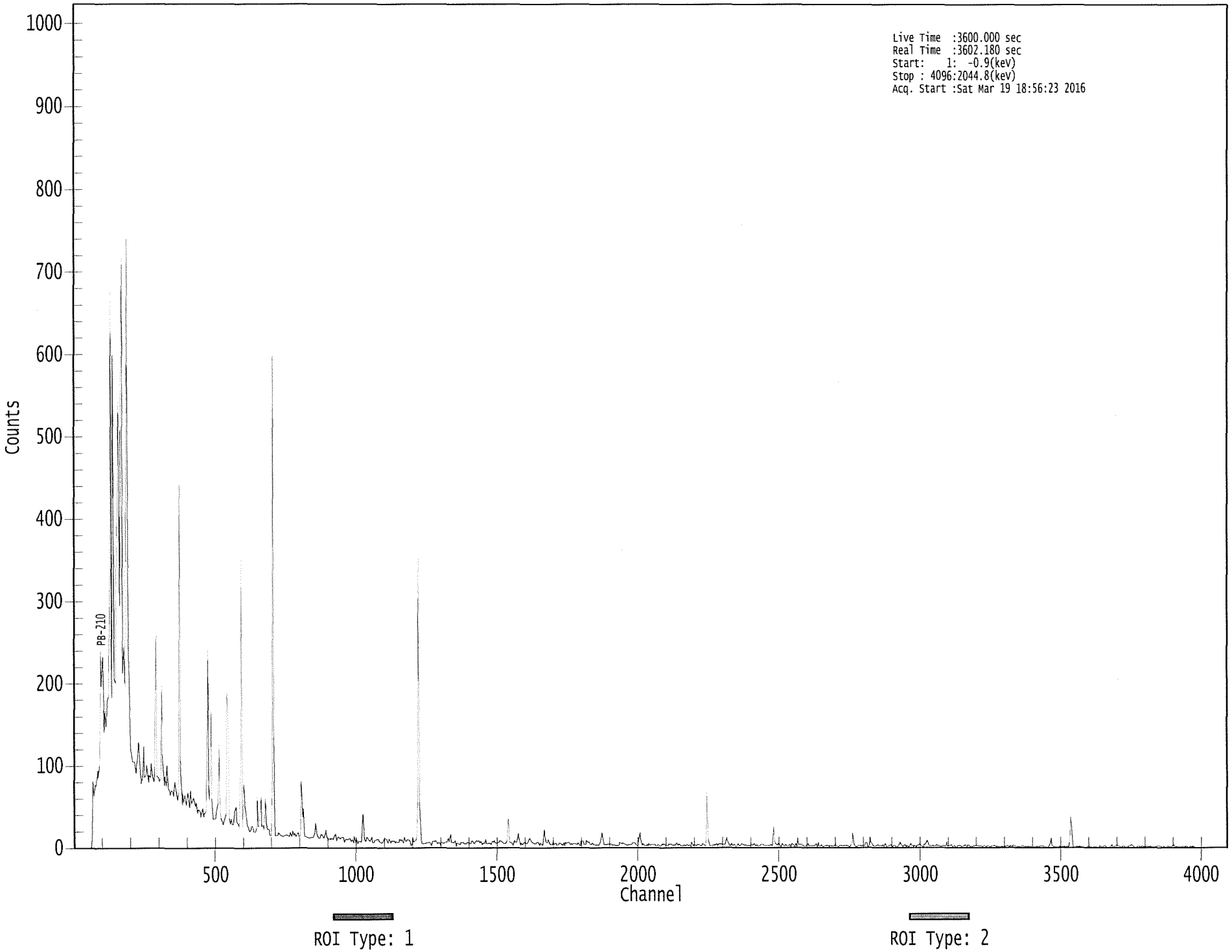
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	1.14E+03	2.81E+03	2.81E+03
+	BI-214	609.31	*	44.80	7.77E+03	3.67E+02	3.67E+02
		1120.29	*	14.80	8.06E+03		1.22E+03
		1764.49	*	15.36	7.89E+03		9.41E+02
+	PB-214	295.21	*	18.50	8.27E+03	6.27E+02	8.95E+02
		351.92	*	35.80	9.63E+03		6.27E+02
+	RA-226	186.10	*	3.50	3.67E+04	5.40E+03	5.40E+03

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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011300

Apex™

Analysis Report for 591000 Set#7

Tetra Tech TO#160115-1 Set#7

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 591000 Set#7
Sample Description	: Tetra Tech TO#160115-1 Set#7
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/19/2016 1:12:48AM
Acquisition Started	: 3/19/2016 7:58:22PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3609.6 seconds
Dead Time	: 0.27 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7164

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/Each)	Wt mean Activity Uncertainty	Comments
BI-214	0.955	8.86E+04	2.27E+03	
PB-214	0.995	9.08E+04	4.30E+03	
RA-226	0.994	1.08E+05	7.09E+03	

Analysis Report for 591000 Set#7

Tetra Tech TO#160115-1 Set#7

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:41:06PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.15	1.06656E+00	2.31		
	2	36.37	-3.04028E-02	- 80.9		
	3	46.64	4.53216E-01	5.46		
	4	67.76	9.86639E-01	3.68		
M	5	74.91	3.61341E-01	5.64		
m	6	77.17	7.11077E-01	5.54		
m	7	81.13	9.56889E-02	7.17		
m	8	83.87	3.30302E-01	5.66		
m	9	87.34	2.12584E-01	5.86		
m	10	89.92	4.14777E-02	11.36		
	11	94.75	-8.35973E-02	- 29.1		
	12	144.13	4.35556E-01	5.86		
	13	154.28	2.82472E-01	10.59		
	15	236.20	-3.64583E-01	- 7.1		
	16	242.14	9.72167E-01	2.77		
M	17	256.34	2.27972E-01	5.38		
m	18	259.19	8.40514E-02	11.06		
M	19	269.66	3.82171E-01	3.53		
m	20	271.40	2.74383E-01	4.41		
	21	286.37	-5.41194E-01	- 3.2		
m	23	300.26	1.16463E-01	7.74		
	24	324.07	9.44444E-03	154.80		
	25	330.15	4.65278E-02	30.43		
	27	389.16	1.00444E-01	15.72		
M	28	402.11	1.32079E-01	6.65		
m	29	405.23	8.80949E-02	8.91		
	30	487.17	-1.38889E-04	-6205.8		
	32	665.87	1.10639E-01	7.75		
	33	720.38	2.56944E-02	23.95		
	34	768.76	3.15222E-01	3.78		
	35	786.45	7.40556E-02	11.33		
	36	806.66	6.92778E-02	10.73		
	37	832.47	3.48611E-02	18.65		
	38	839.56	-1.18056E-03	- 681.8		

Analysis Report for 591000 Set#7

Tetra Tech TO#160115-1 Set#7

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	39	934.61	1.78472E-01	5.43		
	40	1070.25	1.13056E-02	33.10		
	42	1155.86	6.98889E-02	9.66		
	43	1238.81	2.55000E-01	3.80		
	44	1281.79	5.62222E-02	10.29		
M	45	1378.54	1.62123E-01	4.62		
m	46	1386.06	2.71049E-02	13.44		
M	47	1402.22	5.47379E-02	8.48		
m	48	1408.72	1.08097E-01	5.61		
	49	1510.06	8.91806E-02	8.42		
	50	1539.53	7.22222E-03	65.50		
	51	1584.01	2.96944E-02	15.43		
	52	1662.17	4.22222E-02	10.90		
	53	1730.43	1.03806E-01	5.71	Sum	
	55	1848.18	5.45139E-02	9.03		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

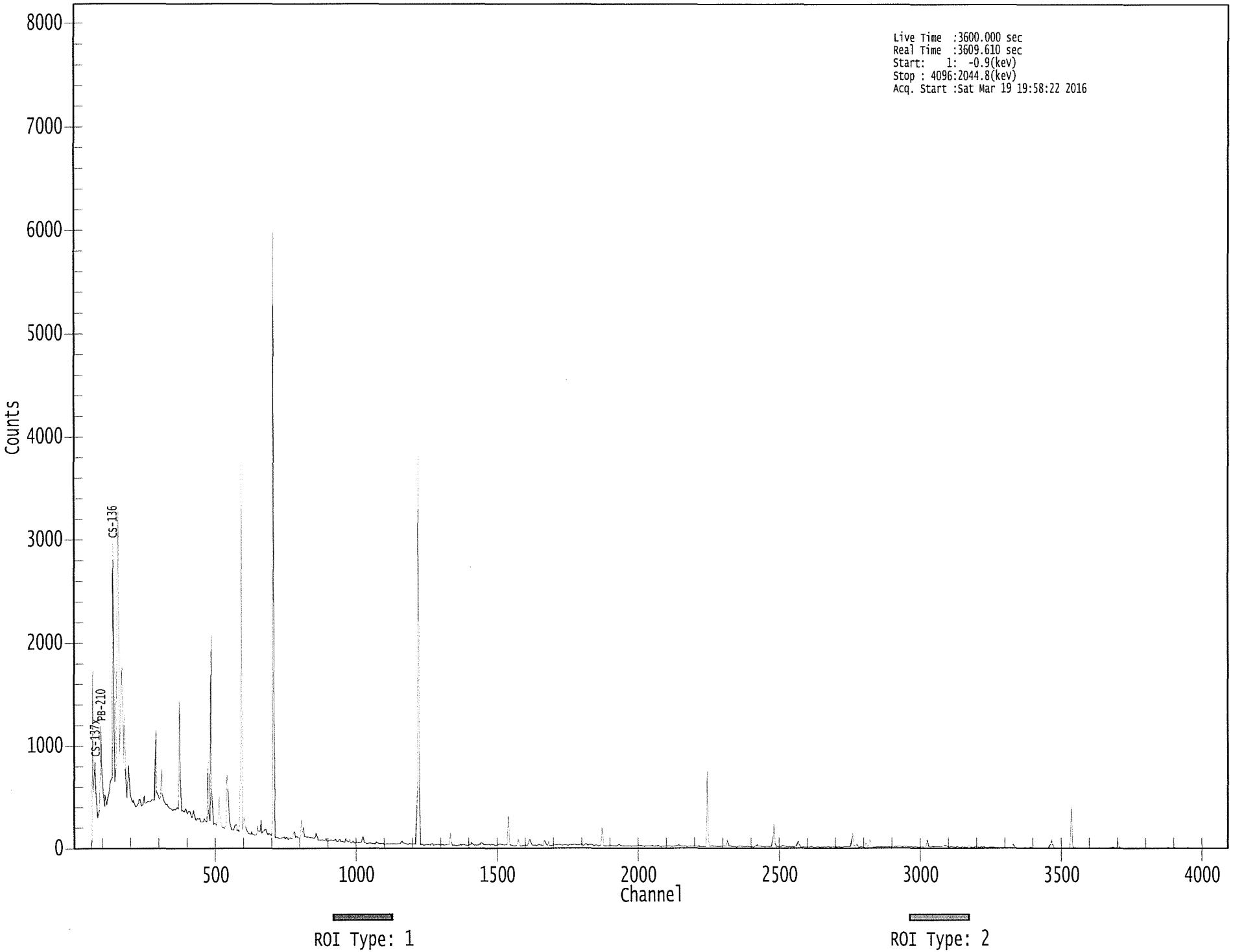
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	4.69E+02	6.51E+03	6.51E+03
+	BI-214	609.31	*	44.80	8.61E+04	9.46E+02	9.46E+02
		1120.29	*	14.80	9.17E+04		3.71E+03
		1764.49	*	15.36	8.86E+04		2.76E+03
+	PB-214	295.21	*	18.50	8.79E+04	1.31E+03	2.19E+03
		351.92	*	35.80	9.44E+04		1.31E+03
+	RA-226	186.10	*	3.50	1.08E+05	1.43E+04	1.43E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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011304

011305

Southwest Research Institute, Division 1, Radiochemistry

Gamma Spectroscopy Summary Sheet (1 sig)

Client: Tetra Tech (Set#8)
Task Order: 160115-1
Prep Page: N/A
Prep Date: N/A

JR 4/4/16

JR Spurs 4/19/16

Project #: 21431.01.001
SRR: 56591, 56639, 56785, 56876
TPU sig factor: 1
Units: g

Notes:

Sample ID 588049 | Sample # 7161 | Sample Size 1 Each | Date Analyzed 3/19/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	52.490	100.0%	1	4.01E+03	9.65E+01	2.54E+01	2.33E+01		
^{214}Pb	52.490	100.0%	1	4.29E+03	2.02E+02	4.29E+01	2.26E+01		
^{226}Ra	52.490	100.0%	1	5.03E+03	3.04E+02	4.33E+02	1.10E+02		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 588049D | Sample # 7159 | Sample Size 1 Each | Date Analyzed 3/19/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RPDs	DER	
^{214}Bi	54.016	100.0%	1	3.72E+03	8.98E+01	2.31E+01	2.20E+01		7.6	2.2	Pass
^{214}Pb	54.016	100.0%	1	3.95E+03	1.86E+02	4.87E+01	2.19E+01		8.4	1.3	Pass
^{226}Ra	54.016	100.0%	1	4.66E+03	2.85E+02	4.39E+02	1.10E+02		7.7	0.9	Pass

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.
Duplicate Evaluation = (Sample-Duplicate) / sqrt ((TPUsample^2) + (TPUdup^2)) # 3

Sample ID 588556 | Sample # 7157 | Sample Size 1 Each | Date Analyzed 3/21/2019

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	56.992	100.00%	1	2.72E+03	6.65E+01	2.26E+01	1.86E+01		
^{214}Pb	56.992	100.0%	1	2.93E+03	1.38E+02	4.09E+01	1.85E+01		
^{226}Ra	56.992	100.0%	1	3.54E+03	2.17E+02	3.29E+02	8.49E+01		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 590212 | Sample # 7149 | Sample Size 1 Each | Date Analyzed 3/21/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	52.103	100.00%	1	4.93E+03	1.18E+02	3.69E+01	2.66E+01		
^{214}Pb	52.103	100.0%	1	5.21E+03	2.45E+02	5.20E+01	2.51E+01		
^{226}Ra	52.103	100.0%	1	6.37E+03	3.89E+02	6.28E+02	1.50E+02		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Note: Ra 226 is not reported from this spreadsheet JR 4/20/16

011306

Southwest Research Institute, Division 1, Radiochemistry

Gamma Spectroscopy Summary Sheet (1 sig)

Client: Tetra Tech (Set#8)
Task Order: 160115-1
Prep Page: N/A
Prep Date: N/A

Project #: 21431.01.001
SRR: 56591, 56639, 56785, 56876
TPU sig factor: 1
Units: g

Notes: _____

Sample ID 590213 | Sample # 7153 | Sample Size 1 Each | Date Analyzed 3/21/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	52.216	100.00%	1	2.38E+03	5.91E+01	2.34E+01	1.81E+01		
^{214}Pb	52.216	100.0%	1	2.51E+03	1.19E+02	3.53E+01	1.75E+01		
^{226}Ra	52.216	100.0%	1	2.96E+03	1.91E+02	3.78E+02	9.28E+01		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 590214 | Sample # 7155 | Sample Size 1 Each | Date Analyzed 3/21/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	52.786	100.00%	1	4.06E+02	1.29E+01	1.02E+01	7.33E+00		
^{214}Pb	52.786	100.0%	1	4.66E+02	2.28E+01	1.76E+01	7.47E+00		
^{226}Ra	52.786	100.0%	1	1.28E+03	8.94E+01	2.04E+02	5.26E+01		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 591000 | Sample # 7151 | Sample Size 1 Each | Date Analyzed 3/21/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	54.141	100.00%	1	2.07E+03	5.17E+01	2.20E+01	1.68E+01		
^{214}Pb	54.141	100.0%	1	2.10E+03	9.92E+01	3.67E+01	1.60E+01		
^{226}Ra	54.141	100.0%	1	2.66E+03	1.66E+02	2.72E+02	7.19E+01		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

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Analysis Report for 588049 Set#8

TetraTech TO#160115-1 Set#8

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 588049 Set#8
Sample Description	: TetraTech TO#160115-1 Set#8
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/19/2016 8:51:13PM
Acquisition Started	: 3/19/2016 9:01:16PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3621.7 seconds
Dead Time	: 0.60 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7161

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.957	2.10E+05	5.06E+03	
PB-214	0.996	2.25E+05	1.06E+04	
RA-226	0.994	2.64E+05	1.60E+04	

Analysis Report for 588049 Set#8

TetraTech TO#160115-1 Set#8

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:39:06PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.19	2.88682E+00	1.30		
	2	36.37	8.31944E-02	44.67		
	3	46.61	3.96924E-01	9.12		
	4	50.24	-7.44444E-02	- 34.8		
	5	67.77	2.69174E+00	1.72		
M	6	74.91	6.75530E-01	3.81		
m	7	77.17	1.42639E+00	3.71		
m	8	81.13	3.59901E-01	4.11		
m	9	83.88	8.69979E-01	3.76		
m	10	87.37	4.16172E-01	4.00		
m	11	89.94	5.95583E-02	11.00		
M	12	94.79	-6.73837E-01	- 9.1		
m	13	97.66	-1.86629E-02	- 58.8		
	14	122.60	8.29445E-02	35.13		
	15	144.15	1.16514E+00	3.34		
	16	154.31	7.89375E-01	4.97		
	18	236.14	-1.04250E+00	- 4.3		
	19	242.14	2.03942E+00	2.14		
M	20	256.37	6.34328E-01	3.03		
m	21	259.04	1.91979E-01	7.38		
M	22	269.66	1.17306E+00	1.93		
m	23	271.41	9.27358E-01	2.24		
m	24	274.75	1.04767E-01	11.73		
M	25	283.92	2.89002E-02	56.67		
m	26	286.28	3.33220E-02	56.65		
m	28	300.21	3.33293E-01	4.04		
m	29	302.84	2.00509E-01	6.05		
	30	324.10	1.32222E-01	14.59		
M	31	330.09	1.07977E-01	18.35		
m	32	334.24	2.53746E-02	19.77		
m	33	338.50	8.91212E-02	18.39		
	35	389.21	1.50347E-01	14.76		
M	36	402.05	4.32333E-01	3.49		
m	37	405.16	2.78327E-01	4.74		

Analysis Report for 588049 Set#8

TetraTech TO#160115-1 Set#8

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	38	427.31	1.31389E-01	16.86		
	39	445.33	5.67778E-02	21.52		
	40	480.84	-2.36111E-03	- 644.9	Sum	
	41	487.23	9.88892E-03	172.79		
	42	511.18	2.12202E-01	9.05		
	43	580.48	5.45000E-02	27.13		
	45	665.82	2.50569E-01	4.87		
	46	703.44	1.13986E-01	11.72	Sum	
	47	768.79	8.30500E-01	2.25		
	48	786.31	1.55278E-01	8.28		
	49	806.69	1.71056E-01	6.74		
	50	832.45	9.50556E-02	10.15		
	51	839.54	1.91667E-02	57.63		
	52	934.55	4.18444E-01	3.72		
	53	964.68	2.92917E-02	29.88		
	54	1052.63	4.28611E-02	18.10		
	55	1070.33	5.32778E-02	17.72		
	57	1155.86	1.85056E-01	5.96		
	58	1208.69	6.02500E-02	15.12		
	59	1238.78	6.45917E-01	2.34		
	60	1281.62	1.44861E-01	6.56		
M	61	1378.36	4.09867E-01	2.85		
m	62	1386.10	8.05600E-02	7.54		
M	63	1402.20	1.30828E-01	5.56		
m	64	1408.76	2.24094E-01	4.05		
	65	1509.89	2.01444E-01	4.95		
	66	1544.14	8.33333E-04	795.40		
	67	1583.74	5.52778E-02	13.67		
	68	1600.22	1.75000E-02	34.80		
	69	1662.11	8.65556E-02	7.55		
	70	1684.94	1.73889E-02	27.54		
	71	1730.34	2.53528E-01	3.73	Sum	
	73	1848.21	1.60500E-01	4.95		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

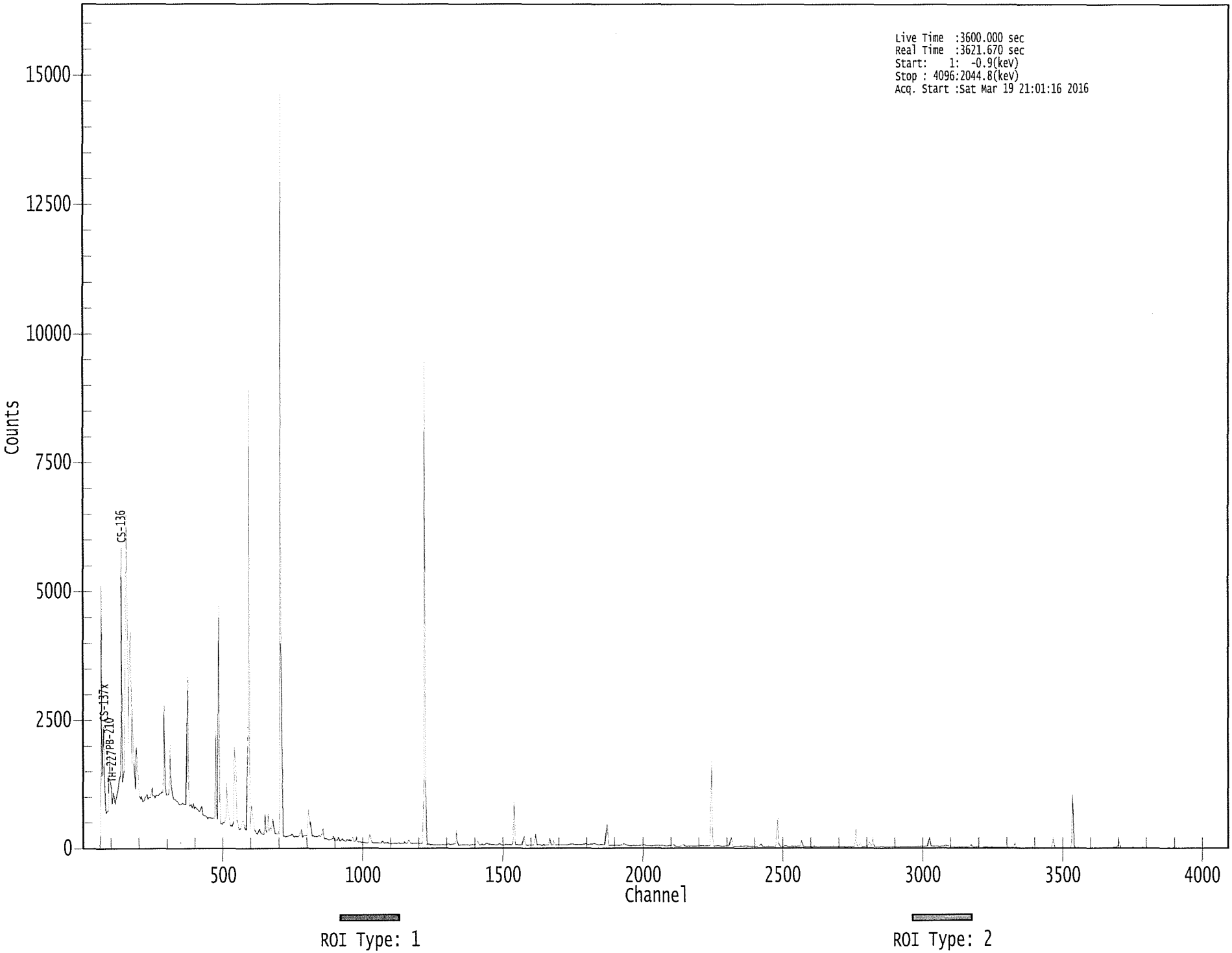
Analysis Report for 588049 Set#8

TetraTech TO#160115-1 Set#8

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	3.09E+03	9.87E+03	9.87E+03
+	BI-214	609.31	*	44.80	2.11E+05	1.34E+03	1.34E+03
		1120.29	*	14.80	2.13E+05		5.96E+03
		1764.49	*	15.36	2.08E+05		3.20E+03
+	PB-214	295.21	*	18.50	2.19E+05	2.25E+03	3.33E+03
		351.92	*	35.80	2.33E+05		2.25E+03
+	RA-226	186.10	*	3.50	2.64E+05	2.27E+04	2.27E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 588049Dup.Set#8

TetraTech TO#160115-1 Set#8

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 588049Dup.Set#8
Sample Description	: TetraTech TO#160115-1 Set#8
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/19/2016 8:53:03PM
Acquisition Started	: 3/19/2016 10:05:19PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3621.1 seconds
Dead Time	: 0.58 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7159

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.956	2.01E+05	4.85E+03	
PB-214	0.996	2.13E+05	1.00E+04	
RA-226	0.995	2.52E+05	1.54E+04	

Analysis Report for 588049Dup.Set#8

TetraTech TO#160115-1 Set#8

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:38:33PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.18	2.68954E+00	1.42		
	2	36.41	-1.10556E-01	- 33.6		
	3	46.57	3.46368E-01	10.09		
	4	50.31	-7.91528E-02	- 31.2		
	5	67.77	1.62339E+00	3.11		
M	6	74.90	4.61610E-01	4.89		
m	7	77.18	9.93834E-01	4.78		
M	8	81.12	-6.43222E-11	-533523		
m	9	83.84	-9.64281E-01	- 6.0		
m	10	87.32	-4.53427E-01	- 6.0		
m	11	90.01	-3.70697E-02	- 10.1		
	12	94.79	-1.13889E-01	- 33.4		
	13	144.13	1.05703E+00	4.39		
	14	154.32	6.86806E-01	5.05		
	16	210.73	5.34722E-02	51.99		
	17	236.17	-6.77944E-01	- 6.0		
	18	242.16	1.91403E+00	2.24		
M	19	254.14	1.50911E-01	8.90		
m	20	256.39	5.77609E-01	3.15		
m	21	259.12	2.14343E-01	6.56		
M	22	269.64	1.09411E+00	2.02		
m	23	271.40	8.98049E-01	2.29		
m	24	274.84	1.47552E-01	8.57		
	25	283.80	-7.01844E+00	- 0.8		
m	27	300.19	3.52765E-01	4.06		
m	28	302.86	2.01163E-01	6.07		
	29	324.07	9.58611E-02	24.36		
M	30	330.07	8.73444E-02	25.04		
m	31	334.43	1.59210E-02	26.93		
m	32	338.48	6.06791E-02	25.10		
M	34	387.05	7.67023E-02	12.61		
m	35	389.07	1.07942E-01	9.83		
M	36	402.04	4.09205E-01	3.57		
m	37	405.17	2.84351E-01	4.56		

Analysis Report for 588049Dup.Set#8

TetraTech TO#160115-1 Set#8

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	38	427.23	1.25111E-01	17.25		
	39	445.32	7.50000E-02	20.74		
	40	455.21	-3.90972E-02	- 54.2		
	41	480.72	2.74028E-02	42.50	Sum	
	42	487.48	4.47222E-02	43.88		
	43	511.17	2.26369E-01	8.53		
	44	580.45	4.65000E-02	21.71		
	46	665.83	2.45556E-01	4.76		
	47	703.56	1.02444E-01	13.24	Sum	
	48	720.36	4.81944E-02	26.29		
	49	768.80	7.79528E-01	2.51		
	50	786.39	1.76250E-01	7.13		
	51	806.68	1.90847E-01	7.13		
	52	832.43	7.29444E-02	15.19		
	53	839.44	7.51389E-03	135.71		
	54	934.60	3.92944E-01	3.45		
	55	1052.78	2.93333E-02	27.03		
	57	1134.13	1.73333E-02	42.60		
	58	1155.85	1.77097E-01	6.67		
	59	1208.36	3.47500E-02	19.59		
	60	1238.80	5.83472E-01	2.50		
	61	1281.58	1.45667E-01	6.51		
M	62	1378.38	4.06295E-01	2.82		
m	63	1386.07	9.30735E-02	6.60		
M	64	1402.26	1.46178E-01	5.12		
m	65	1408.68	2.32111E-01	3.92		
	66	1510.02	1.86778E-01	6.11		
	67	1539.46	1.32500E-02	59.60		
	68	1583.89	6.55000E-02	10.89		
	69	1595.19	6.05556E-03	81.97		
	70	1662.04	7.47222E-02	8.56		
	71	1730.43	2.33722E-01	3.83	Sum	
	73	1839.08	1.45833E-03	330.02		
	74	1848.15	1.35639E-01	5.92		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

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Analysis Report for 588049Dup.Set#8

TetraTech TO#160115-1 Set#8

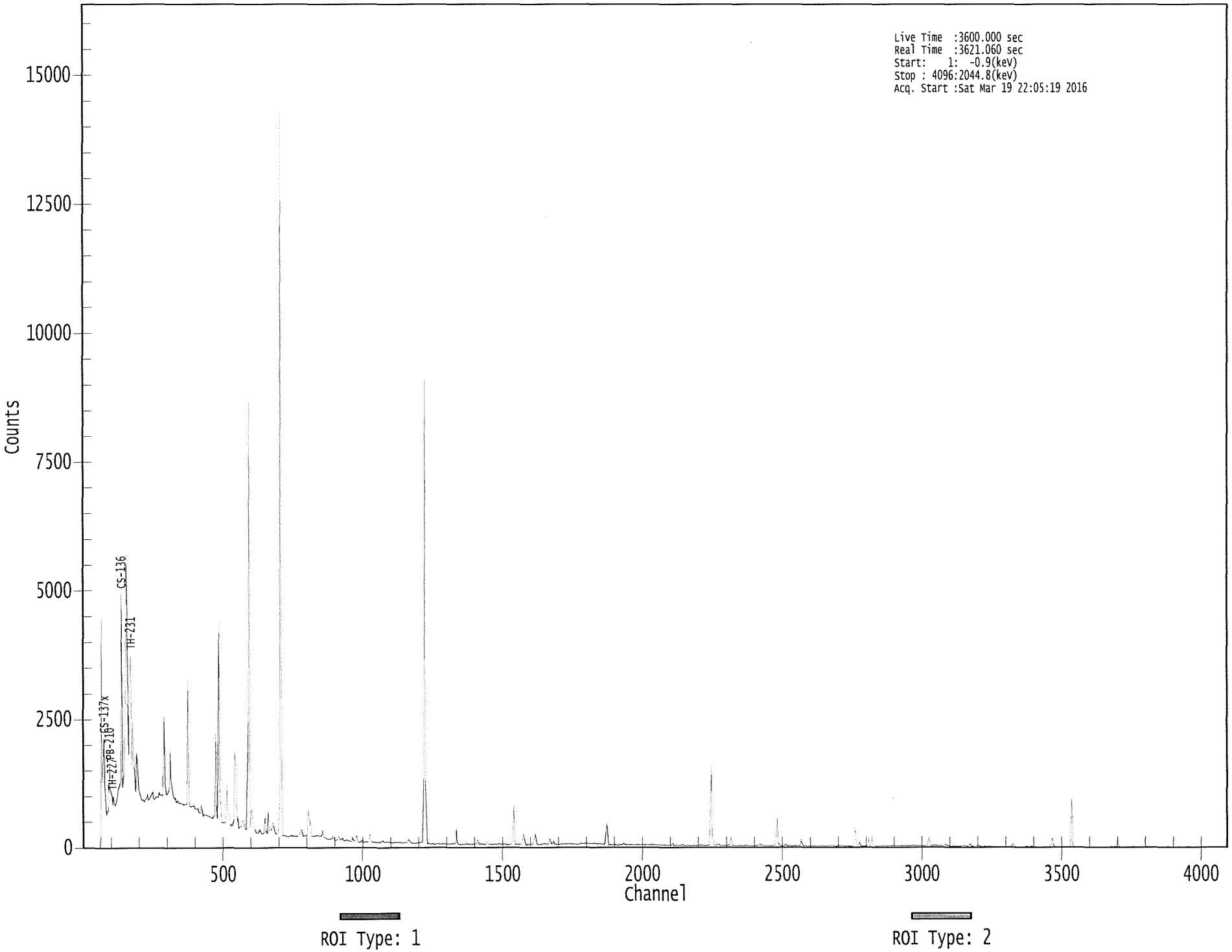
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	-1.89E+03	9.32E+03	9.32E+03
+	BI-214	609.31	*	44.80	2.03E+05	1.25E+03	1.25E+03
		1120.29	*	14.80	1.98E+05		6.51E+03
		1764.49	*	15.36	2.01E+05		3.67E+03
+	PB-214	295.21	*	18.50	2.06E+05	2.63E+03	3.15E+03
		351.92	*	35.80	2.23E+05		2.63E+03
+	RA-226	186.10	*	3.50	2.52E+05	2.37E+04	2.37E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 588556 Set#8

TetraTech TO#160115-1 Set#8

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 588556 Set#8
Sample Description	: TetraTech TO#160115-1 Set#8
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/19/2016 8:54:19PM
Acquisition Started	: 3/21/2016 10:18:37AM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3616.8 seconds
Dead Time	: 0.47 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7157

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.983	1.55E+05	3.79E+03	
PB-214	0.998	1.67E+05	7.87E+03	
RA-226	0.995	2.02E+05	1.24E+04	

Analysis Report for 588556 Set#8

TetraTech TO#160115-1 Set#8

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:37:57PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.19	2.32085E+00	1.51		
	2	36.40	-9.74723E-02	- 34.9		
	3	46.62	3.87424E-01	8.53		
M	4	50.29	-7.75748E-02	- 31.7		
m	5	53.33	-4.34250E-02	- 32.3		
	6	67.75	2.04403E+00	2.26		
M	7	74.90	5.40740E-01	4.44		
m	8	77.15	1.12873E+00	4.34		
m	9	81.13	2.79157E-01	4.79		
m	10	83.87	7.26655E-01	4.38		
m	11	87.34	3.11375E-01	4.68		
m	12	89.87	4.01499E-02	14.37		
	13	94.63	-5.00375E-01	- 10.7		
	14	144.13	9.59194E-01	4.29		
	15	154.28	6.59389E-01	5.77		
	17	236.07	-2.57056E-01	- 12.9		
	18	242.10	1.64331E+00	2.10		
M	19	256.32	4.83973E-01	3.45		
m	20	259.00	1.57932E-01	7.80		
M	21	269.56	9.13898E-01	2.16		
m	22	271.33	7.08496E-01	2.54		
	23	283.80	-4.45194E+00	- 1.0		
m	25	300.15	2.93923E-01	4.50		
m	26	302.86	1.87970E-01	5.96		
	27	324.05	1.25139E-01	14.24		
	28	330.03	7.82639E-02	24.18		
	29	338.41	1.14917E-01	13.65		
	31	388.96	1.29861E-01	14.15		
M	32	401.96	3.46053E-01	3.77		
m	33	405.08	2.15034E-01	5.18		
	34	427.33	1.45500E-01	14.83		
	35	445.09	4.78750E-02	23.44		
	36	455.05	2.94167E-02	49.53		
	37	480.64	1.44444E-02	78.39	Sum	

Analysis Report for 588556 Set#8

TetraTech TO#160115-1 Set#8

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	38	487.15	3.08889E-02	41.40		
	39	511.11	1.38369E-01	10.91		
	41	665.80	1.86444E-01	5.71		
	42	703.31	9.10278E-02	12.86	Sum	
	43	720.19	3.86111E-02	19.60		
	44	768.70	5.93639E-01	2.74		
	45	786.33	1.18569E-01	8.44		
	46	806.50	1.25847E-01	8.00		
	47	832.29	7.62500E-02	11.47		
	48	839.33	8.02778E-03	111.40		
	49	934.49	2.94222E-01	4.01		
	50	1052.59	3.45694E-02	21.75		
	52	1155.74	1.28750E-01	7.08		
	53	1208.22	4.41528E-02	18.85		
	54	1238.62	4.85278E-01	2.85		
	55	1281.44	1.03667E-01	7.55		
M	56	1378.10	2.91723E-01	3.39		
m	57	1385.76	5.97916E-02	8.77		
M	58	1401.99	9.61280E-02	6.42		
m	59	1408.48	1.59577E-01	4.78		
	60	1509.76	1.49556E-01	6.23		
	61	1583.76	4.58333E-02	15.82		
	62	1600.35	1.00139E-02	44.04		
	63	1661.81	6.72778E-02	9.16		
	64	1684.44	1.03056E-02	40.34		
	65	1730.00	1.94694E-01	4.25	Sum	
	67	1847.77	1.17222E-01	6.22		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	-1.14E+03	8.23E+03	8.23E+03
+	BI-214	609.31	*	44.80	1.54E+05	1.29E+03	1.29E+03
		1120.29	*	14.80	1.59E+05		4.08E+03

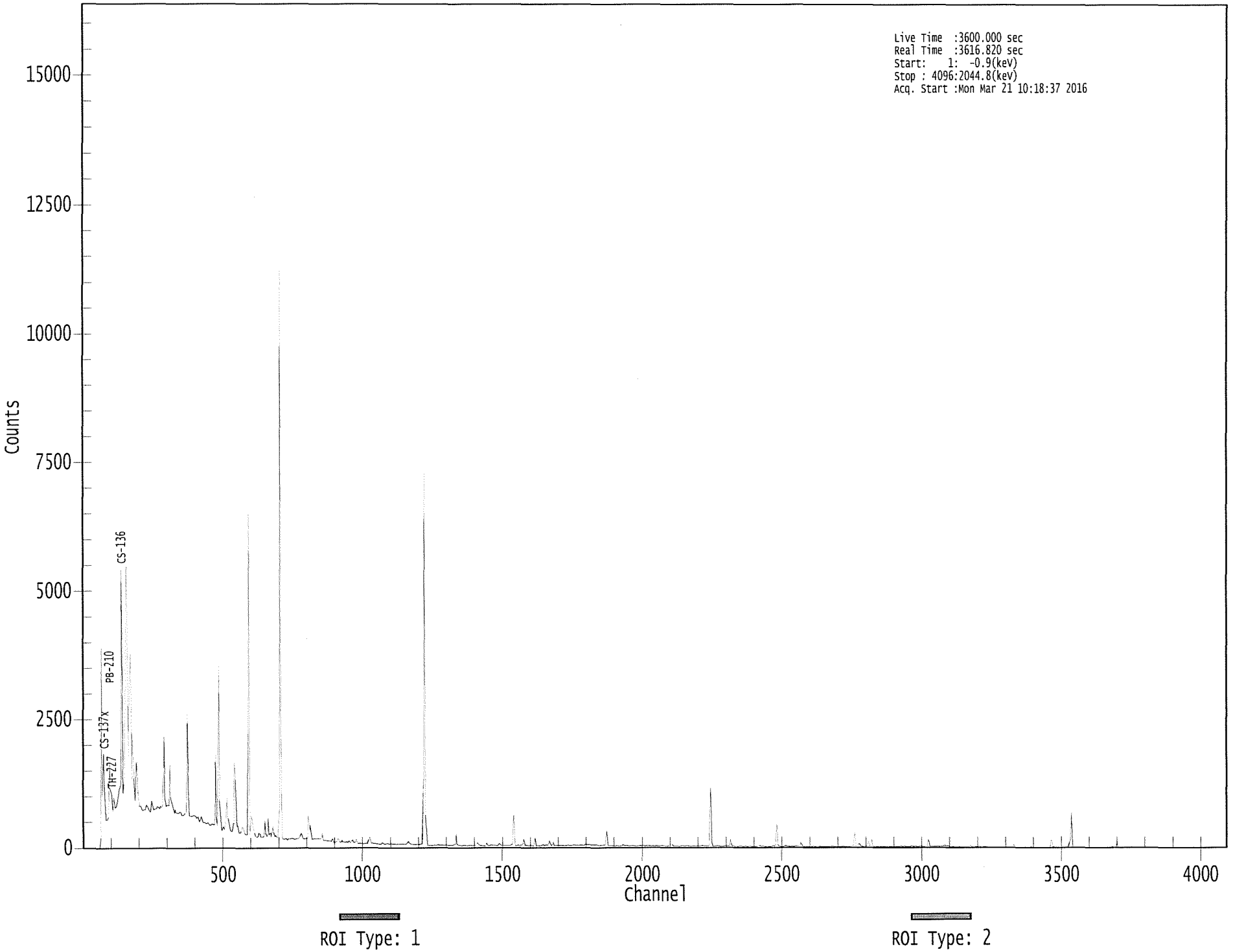
Analysis Report for 588556 Set#8

TetraTech TO#160115-1 Set#8

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	BI-214	1764.49	*	15.36	1.53E+05	1.29E+03	2.90E+03
+	PB-214	295.21	*	18.50	1.63E+05	2.33E+03	2.97E+03
		351.92	*	35.80	1.73E+05		2.33E+03
+	RA-226	186.10	*	3.50	2.02E+05	1.87E+04	1.87E+04

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 590212 Set#8

TetraTech TO#160115-1 Set#8

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 590212 Set#8
Sample Description	: TetraTech TO#160115-1 Set#8
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/19/2016 8:55:47PM
Acquisition Started	: 3/21/2016 2:37:26PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3626.5 seconds
Dead Time	: 0.73 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7149

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.978	2.57E+05	6.13E+03	
PB-214	0.998	2.71E+05	1.28E+04	
RA-226	0.994	3.32E+05	2.03E+04	

Analysis Report for 590212 Set#8

TetraTech TO#160115-1 Set#8

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:35:27PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.19	4.03361E+00	1.10		
	2	36.40	1.20625E-01	32.74		
	3	46.64	3.51091E-01	11.25		
M	4	50.18	-1.40417E-01	- 24.6		
m	5	53.27	-6.41389E-02	- 25.4		
	6	67.76	3.33628E+00	1.74		
M	7	74.91	7.82761E-01	3.60		
m	8	77.17	1.68346E+00	3.51		
m	9	81.15	3.87087E-01	3.93		
m	10	83.88	1.07366E+00	3.54		
m	11	87.34	5.47812E-01	3.71		
m	12	89.95	6.45353E-02	10.88		
	13	94.72	-1.00417E+00	- 6.8		
	14	122.35	6.76389E-02	54.54		
	15	144.10	1.43194E+00	3.31		
	16	154.29	9.99055E-01	5.05		
	18	210.75	5.45001E-02	71.16		
	19	236.11	-8.21472E-01	- 5.6		
	20	242.11	2.69331E+00	1.64		
M	21	253.96	2.27145E-01	6.83		
m	22	256.36	7.56213E-01	2.72		
m	23	259.01	1.91486E-01	7.76		
M	24	269.59	1.55284E+00	1.64		
m	25	271.36	1.16209E+00	1.98		
m	26	274.72	1.37526E-01	9.91		
	27	283.78	-8.96011E+00	- 0.7		
m	29	300.17	4.39429E-01	3.50		
m	30	302.88	2.67956E-01	5.30		
	31	324.02	1.40000E-01	16.11		
M	32	330.03	1.01756E-01	22.89		
m	33	334.31	2.25484E-02	24.05		
m	34	338.46	7.29598E-02	22.94		
	36	389.13	1.69611E-01	15.60		
M	37	401.99	5.63569E-01	2.98		

Analysis Report for 590212 Set#8

TetraTech TO#160115-1 Set#8

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	38	405.11	3.43939E-01	4.18		
	39	427.40	1.72708E-01	13.29		
	40	445.35	8.17778E-02	17.61		
	41	454.87	5.18889E-02	32.30		
	42	480.64	-7.27776E-03	- 216.9	Sum	
	43	487.42	4.58889E-02	33.99		
	44	510.86	2.65035E-01	7.51		
	45	533.85	4.05556E-02	25.78		
	46	580.34	5.73472E-02	22.02		
	48	665.79	3.21736E-01	4.48		
	49	703.55	1.24236E-01	10.82	Sum	
	50	720.33	5.25833E-02	30.24		
	51	768.70	9.95667E-01	2.23		
	52	786.28	2.18139E-01	6.66		
	53	806.53	1.90264E-01	9.31		
	54	832.39	8.41667E-02	17.11		
	55	839.37	-1.67500E-02	- 75.7		
	56	934.46	5.26944E-01	3.52		
	57	964.55	5.36667E-02	18.66		
	58	1052.31	5.30000E-02	21.23		
	60	1134.36	3.22500E-02	27.95		
	61	1155.63	2.27444E-01	5.77		
	62	1208.14	4.98611E-02	17.57		
	63	1238.65	7.59500E-01	2.30		
	64	1281.40	1.81028E-01	6.18		
M	65	1378.20	5.04515E-01	2.54		
m	66	1385.75	9.63612E-02	6.88		
M	67	1402.05	1.54920E-01	5.14		
m	68	1408.45	2.71424E-01	3.65		
	69	1509.80	2.40764E-01	5.17		
	70	1539.03	2.85000E-02	27.36		
	71	1583.65	6.47639E-02	10.48		
M	72	1595.36	3.17850E-02	13.89		
m	73	1599.81	4.03739E-02	11.67		
	74	1661.94	1.14889E-01	6.55		
	75	1730.21	2.93611E-01	3.38	Sum	
	77	1838.67	-1.77083E-02	- 31.7		
	78	1847.93	1.65500E-01	5.39		
	79	1873.78	2.10556E-02	24.54		

Analysis Report for 590212 Set#8

TetraTech TO#160115-1 Set#8

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

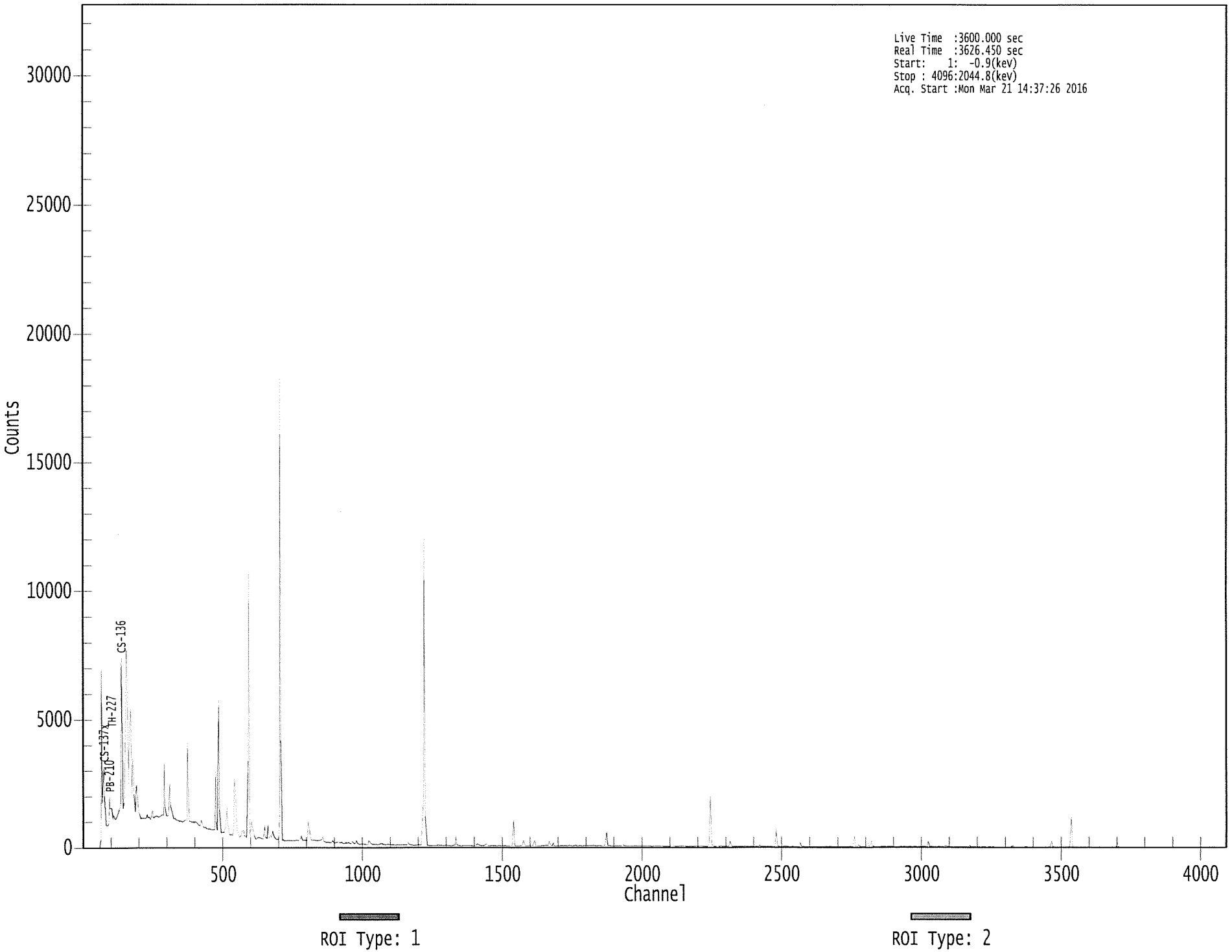
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	3.34E+03	1.07E+04	1.07E+04
+	BI-214	609.31	*	44.80	2.54E+05	1.92E+03	1.92E+03
		1120.29	*	14.80	2.57E+05		7.02E+03
		1764.49	*	15.36	2.59E+05		4.51E+03
+	PB-214	295.21	*	18.50	2.61E+05	2.71E+03	3.54E+03
		351.92	*	35.80	2.85E+05		2.71E+03
+	RA-226	186.10	*	3.50	3.32E+05	3.27E+04	3.27E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 590213 Set#8

TetraTech TO#160115-1 Set#8

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 590213 Set#8
Sample Description	: TetraTech TO#160115-1 Set#8
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/19/2016 8:57:34PM
Acquisition Started	: 3/21/2016 12:28:50PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3613.7 seconds
Dead Time	: 0.38 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7153

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/Each)	Wt mean Activity Uncertainty	Comments
BI-214	0.977	1.24E+05	3.08E+03	
PB-214	0.998	1.31E+05	6.19E+03	
RA-226	0.994	1.54E+05	9.96E+03	

Analysis Report for 590213 Set#8

TetraTech TO#160115-1 Set#8

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:36:43PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.18	1.72933E+00	1.68		
	2	36.42	5.51667E-02	49.24		
	3	46.59	3.10146E-01	9.61		
M	4	50.29	-4.64533E-02	- 39.7		
m	5	53.28	-3.17133E-02	- 40.1		
	6	67.77	2.10996E+00	1.82		
M	7	74.90	4.41398E-01	4.71		
m	8	77.17	9.69024E-01	4.58		
m	9	81.14	2.17234E-01	5.15		
m	10	83.89	5.96640E-01	4.64		
m	11	87.33	2.78596E-01	4.91		
m	12	89.90	3.53584E-02	14.66		
	13	94.74	1.81112E-02	165.31		
	14	144.09	7.15500E-01	4.48		
	15	154.32	5.14055E-01	6.71		
	17	236.13	-4.58542E-01	- 7.4		
	18	242.12	1.31944E+00	2.26		
M	19	253.93	1.20056E-01	9.23		
m	20	256.31	3.95058E-01	3.80		
m	21	259.05	1.20740E-01	9.07		
M	22	269.58	7.70879E-01	2.34		
m	23	271.38	5.53794E-01	2.89		
	24	286.22	-3.74076E+00	- 1.3		
m	26	300.11	1.93495E-01	5.58		
m	27	302.84	1.46960E-01	6.95		
	28	324.02	9.26389E-02	17.30		
M	29	329.99	4.90482E-02	35.50		
m	30	334.63	1.17774E-02	36.68		
m	31	338.49	3.38828E-02	35.57		
M	33	401.98	2.57540E-01	4.45		
m	34	405.09	1.86864E-01	5.53		
	35	427.31	7.98333E-02	19.09		
	36	445.27	3.98333E-02	28.80		
	37	455.14	4.18333E-02	28.77		

Analysis Report for 590213 Set#8

TetraTech TO#160115-1 Set#8

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	38	487.34	3.08194E-02	43.83		
	40	665.77	1.47306E-01	6.41		
	41	703.36	6.17361E-02	14.45	Sum	
	42	768.72	4.82250E-01	3.12		
	43	786.37	1.01097E-01	10.94		
	44	806.46	1.21042E-01	8.09		
	45	832.31	5.16389E-02	16.47		
	46	839.32	-8.27777E-03	- 124.1		
	47	934.48	2.49111E-01	4.32		
	48	964.17	2.04306E-02	35.10		
	50	1155.71	1.26833E-01	6.42		
	51	1238.61	3.82264E-01	3.15		
	52	1281.40	8.12500E-02	7.96		
M	53	1378.23	2.25590E-01	3.90		
m	54	1385.78	4.58330E-02	9.92		
M	55	1402.17	7.55098E-02	7.10		
m	56	1408.52	1.42877E-01	5.05		
	57	1509.72	1.02819E-01	8.57		
	58	1583.91	4.68750E-02	10.85		
	59	1661.75	5.43750E-02	9.51		
	60	1730.15	1.49000E-01	4.72	Sum	
	62	1847.98	9.39444E-02	6.36		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	5.12E+02	7.78E+03	7.78E+03
+	BI-214	609.31	*	44.80	1.25E+05	1.22E+03	1.22E+03
		1120.29	*	14.80	1.26E+05		3.59E+03
		1764.49	*	15.36	1.22E+05		2.88E+03
+	PB-214	295.21	*	18.50	1.27E+05	1.84E+03	2.71E+03
		351.92	*	35.80	1.36E+05		1.84E+03
+	RA-226	186.10	*	3.50	1.54E+05	1.97E+04	1.97E+04

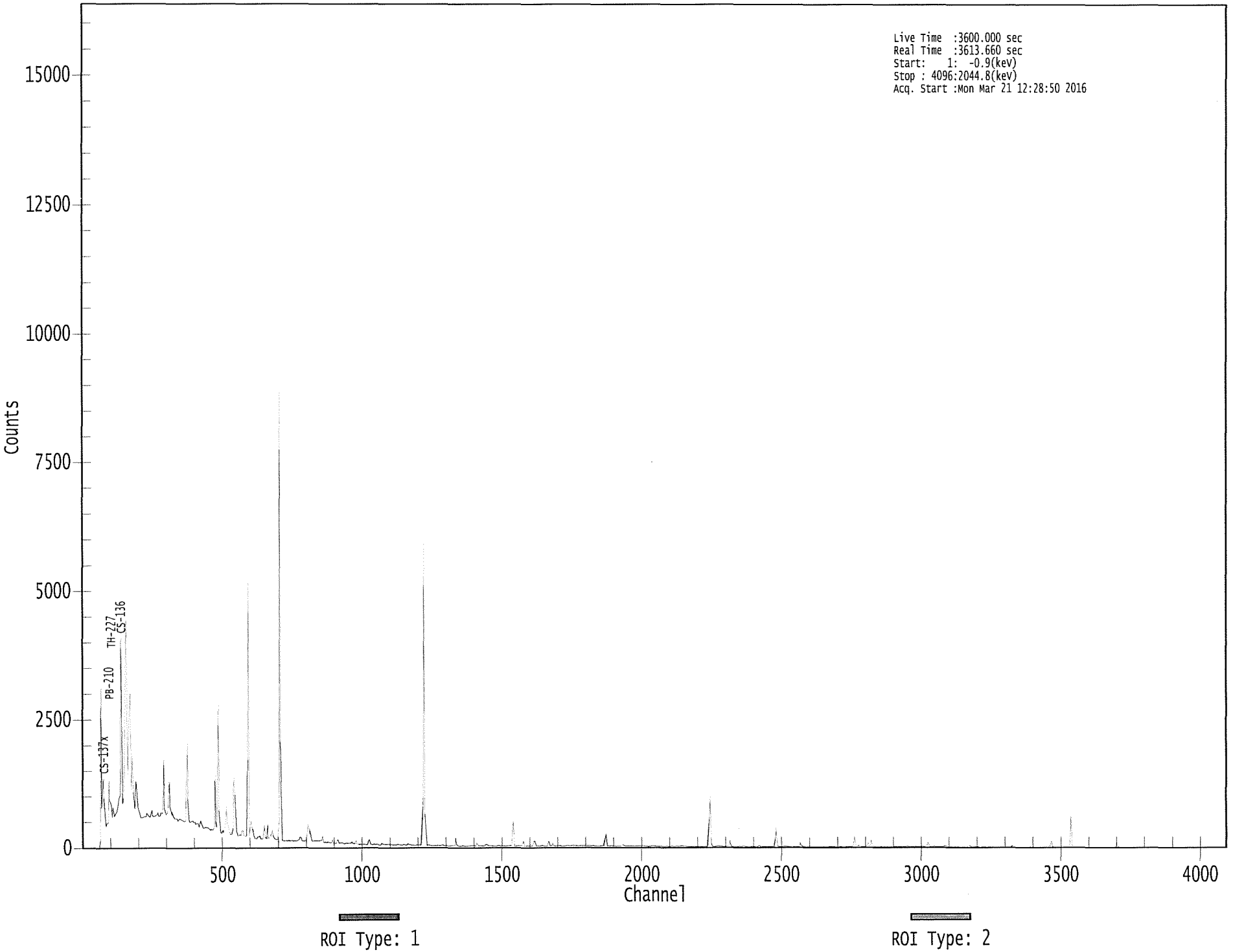
Analysis Report for 590213 Set#8

TetraTech TO#160115-1 Set#8

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 590214 Set#8

TetraTech TO#160115-1 Set#8

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 590214 Set#8
Sample Description	: TetraTech TO#160115-1 Set#8
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/19/2016 10:23:04PM
Acquisition Started	: 3/21/2016 11:27:44AM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3603.9 seconds
Dead Time	: 0.11 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7155

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/Each)	Wt mean Activity Uncertainty	Comments
BI-214	0.980	2.14E+04	6.81E+02	
PB-214	0.998	2.46E+04	1.20E+03	
RA-226	0.997	6.77E+04	4.72E+03	

Analysis Report for 590214 Set#8

TetraTech TO#160115-1 Set#8

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:37:20PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	46.71	5.42016E-02	31.40		
	2	50.15	7.60000E-02	20.00		
	3	63.33	2.43556E-01	10.23		
	4	67.78	1.80944E-01	11.56		
M	5	74.85	8.47638E-02	14.44		
m	6	77.19	1.59569E-01	14.30		
M	7	81.17	-6.82661E-02	- 26.6		
m	8	83.82	-8.56234E-01	- 5.5		
M	9	92.71	5.17028E-01	3.19		
m	10	94.69	1.91138E-01	5.99		
	11	144.07	1.91611E-01	7.11		
	12	154.26	1.00278E-01	19.57		
	14	236.12	1.67778E-02	89.76		
	15	242.09	1.62583E-01	9.73		
	16	256.32	1.12222E-01	10.93		
M	17	269.57	2.06289E-01	4.39		
m	18	271.34	1.67951E-01	4.95		
m	20	300.14	7.03045E-02	8.44		
m	21	302.72	3.52422E-02	13.19		
	22	329.98	1.86389E-02	49.01		
	23	338.35	2.32500E-02	32.80		
M	25	401.88	7.06188E-02	8.31		
m	26	405.13	5.29025E-02	10.14		
	28	665.51	2.50278E-02	17.43		
	29	768.72	9.51667E-02	7.21		
	30	934.31	5.11111E-02	10.12		
	31	1001.53	2.44444E-02	15.81		
	33	1238.53	6.79167E-02	7.47		
	34	1378.19	2.75000E-02	14.43		
	35	1408.60	1.38194E-02	28.48		
	36	1730.30	2.30556E-02	12.74	Sum	
	38	1847.59	1.72778E-02	14.84		

Analysis Report for 590214 Set#8

TetraTech TO#160115-1 Set#8

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

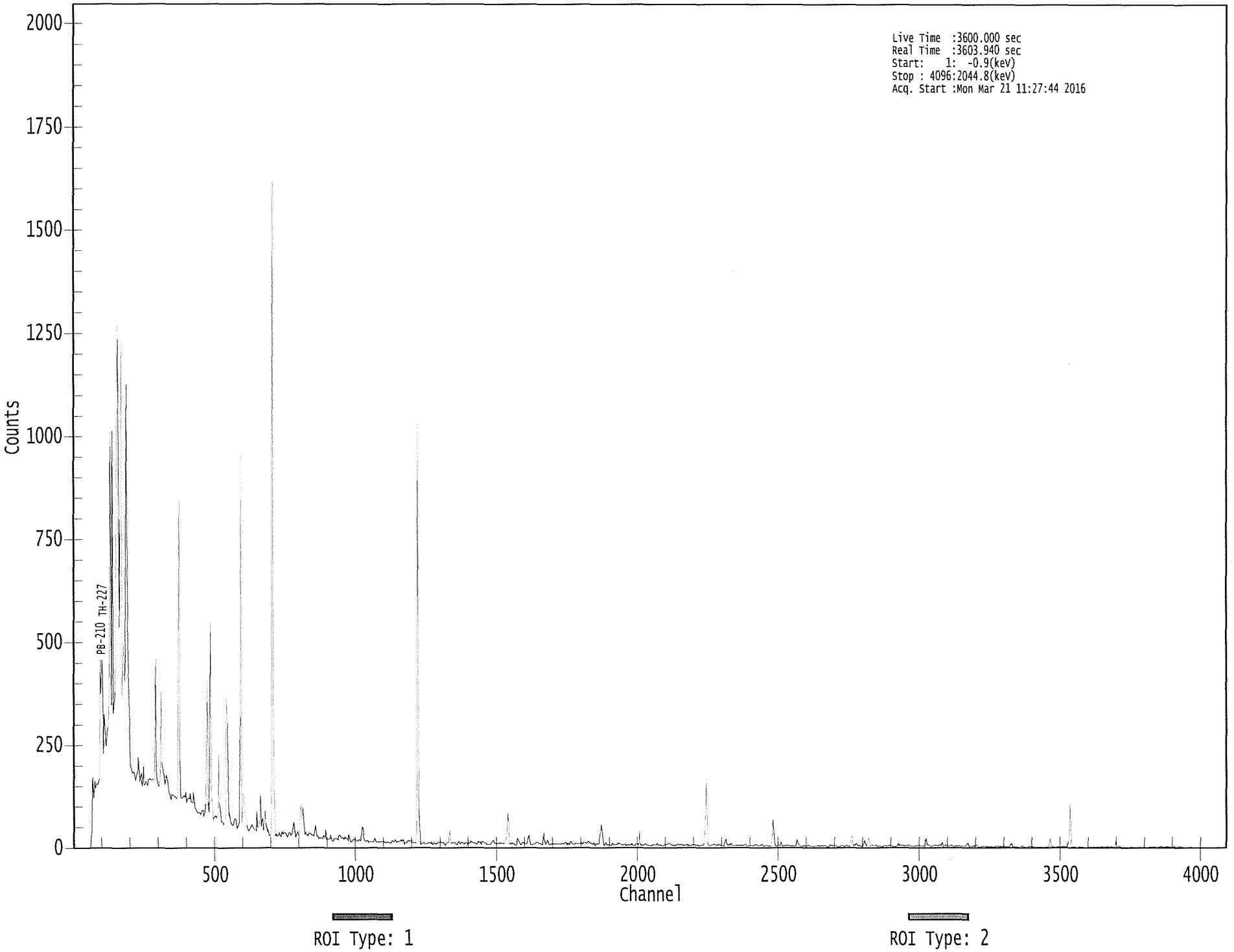
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	1.24E+03	3.78E+03	3.78E+03
+	BI-214	609.31	*	44.80	2.23E+04	5.38E+02	5.38E+02
		1120.29	*	14.80	2.15E+04		2.06E+03
		1764.49	*	15.36	2.01E+04		1.42E+03
+	PB-214	295.21	*	18.50	2.30E+04	9.29E+02	1.17E+03
		351.92	*	35.80	2.69E+04		9.29E+02
+	RA-226	186.10	*	3.50	6.77E+04	1.08E+04	1.08E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 591000 Set#8

TetraTech TO#160115-1 Set#8

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 591000 Set#8
Sample Description	: TetraTech TO#160115-1 Set#8
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/19/2016 10:24:46PM
Acquisition Started	: 3/21/2016 1:35:07PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3611.8 seconds
Dead Time	: 0.33 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7151

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.974	1.12E+05	2.80E+03	
PB-214	0.997	1.14E+05	5.37E+03	
RA-226	0.994	1.44E+05	9.00E+03	

Analysis Report for 591000 Set#8

TetraTech TO#160115-1 Set#8

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:36:06PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.18	1.29125E+00	2.03		
	2	36.47	-1.08333E-02	- 237.8		
	3	46.59	5.87785E-01	4.72		
M	4	50.22	-1.02222E-01	- 36.8		
m	5	53.34	-2.70348E-01	- 16.3		
	6	67.77	1.64431E+00	2.32		
M	7	74.91	3.72331E-01	5.68		
m	8	77.17	7.86059E-01	5.56		
m	9	81.09	1.33831E-01	6.51		
m	10	83.88	3.86120E-01	5.66		
m	11	87.37	2.15699E-01	5.91		
m	12	89.78	4.61281E-02	10.87		
	13	94.75	-1.02500E-01	- 28.2		
	14	144.07	5.71167E-01	5.99		
	15	154.29	4.22944E-01	8.53		
	17	236.11	-3.44944E-01	- 8.1		
	18	242.11	1.12188E+00	2.89		
M	19	256.37	2.92746E-01	4.60		
m	20	258.95	1.00446E-01	10.11		
M	21	269.59	5.14151E-01	2.95		
m	22	271.34	4.08775E-01	3.42		
	23	286.28	-1.25312E+00	- 2.4		
m	25	300.08	1.38772E-01	6.78		
m	26	302.73	8.67560E-02	9.88		
	27	323.91	7.46945E-02	16.08		
	28	330.13	4.73333E-02	32.83		
	29	338.36	4.39167E-02	25.38		
M	31	401.99	2.01663E-01	5.21		
m	32	405.20	1.49284E-01	6.41		
	33	487.23	2.04167E-02	45.04		
	35	665.84	1.42222E-01	6.26		
	36	703.35	5.88750E-02	16.39	Sum	
	37	720.23	4.28472E-02	19.74		
	38	768.77	4.14722E-01	3.42		

Analysis Report for 591000 Set#8

TetraTech TO#160115-1 Set#8

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	39	786.34	8.60000E-02	9.71		
	40	806.58	8.18750E-02	9.71		
	41	832.47	6.94444E-05	12775.3		
	42	839.53	1.03472E-02	84.42		
	43	934.48	2.21625E-01	5.31		
	45	1155.68	9.78889E-02	8.52		
	46	1238.73	3.25222E-01	3.54		
	47	1281.51	8.47917E-02	8.60		
M	48	1378.23	2.14555E-01	3.94		
m	49	1385.85	4.15918E-02	10.37		
M	50	1402.01	6.48754E-02	7.76		
m	51	1408.62	1.21841E-01	5.43		
	52	1509.82	1.03889E-01	7.52		
	53	1583.96	3.06944E-02	14.63		
	54	1661.94	5.18056E-02	9.36		
	55	1730.19	1.28333E-01	5.11	Sum	
	57	1847.82	7.08333E-02	8.80		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

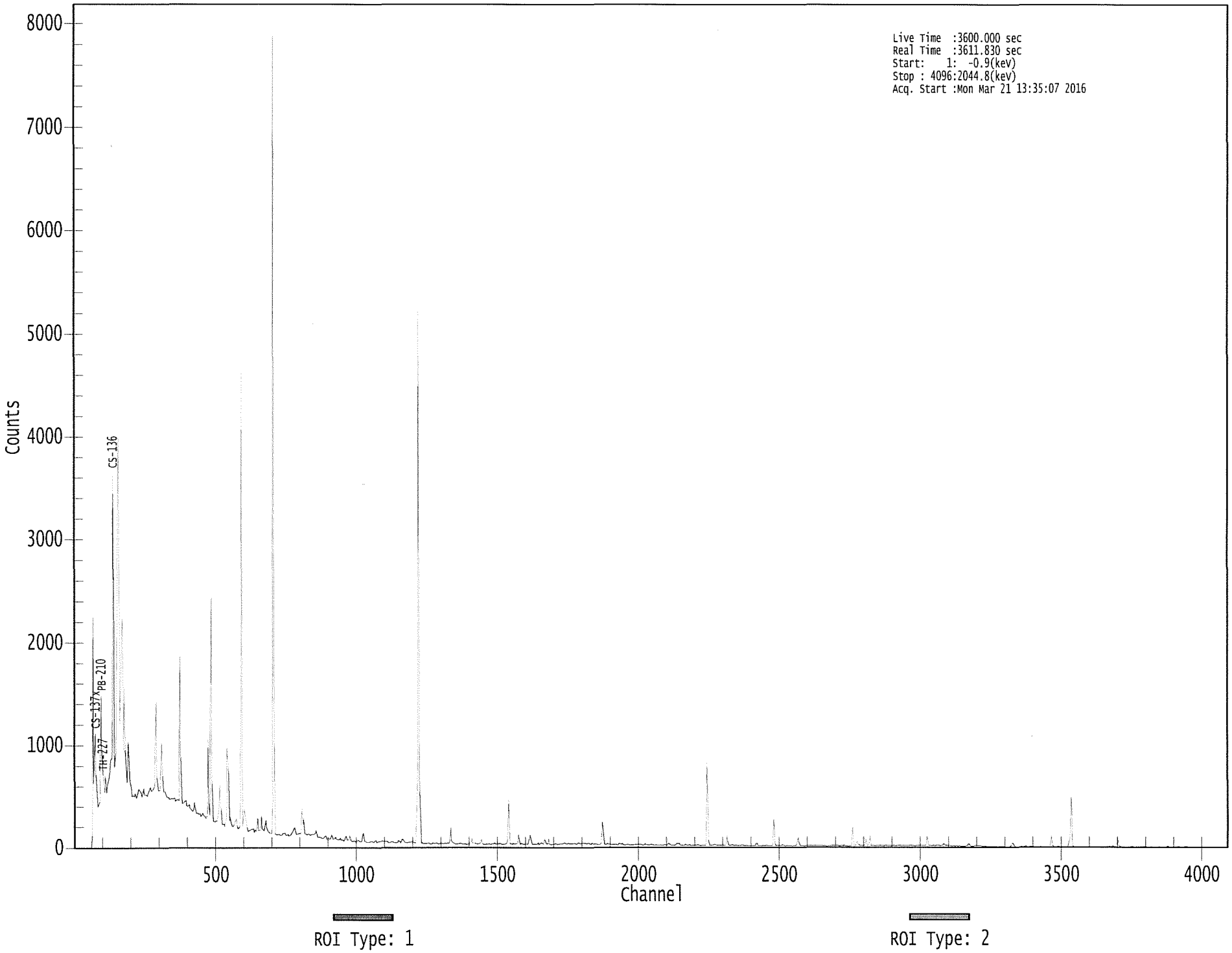
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	1.59E+03	7.44E+03	7.44E+03
+	BI-214	609.31	*	44.80	1.11E+05	1.19E+03	1.19E+03
		1120.29	*	14.80	1.11E+05		3.88E+03
		1764.49	*	15.36	1.14E+05		2.45E+03
+	PB-214	295.21	*	18.50	1.09E+05	1.99E+03	2.39E+03
		351.92	*	35.80	1.19E+05		1.99E+03
+	RA-226	186.10	*	3.50	1.44E+05	1.47E+04	1.47E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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011339

011340

Southwest Research Institute, Division 1, Radiochemistry

Gamma Spectroscopy Summary Sheet (1 sig)

Client: Tetra Tech (Set#9)
Task Order: 160115-1
Prep Page: N/A
Prep Date: N/A
Notes: JR 4/14/16 RSpies 4/19/16

Project #: 21431.01.001
SRR: 56591, 56639, 56785, 56876
TPU sig factor: 1
Units: g

Sample ID 588049 | Sample # 7143 | Sample Size 1 Each | Date Analyzed 3/21/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	56.946	100.00%	1	3.51E+03	8.48E+01	2.51E+01	2.13E+01		
^{214}Pb	56.946	100.00%	1	3.65E+03	1.72E+02	4.03E+01	2.00E+01		
^{226}Ra	56.946	100.00%	1	4.60E+03	2.84E+02	4.74E+02	1.15E+02		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 588556 | Sample # 7147 | Sample Size 1 Each | Date Analyzed 3/21/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	58.916	100.0%	1	2.46E+03	6.05E+01	2.05E+01	1.74E+01		
^{214}Pb	58.916	100.00%	1	2.60E+03	1.22E+02	3.25E+01	1.65E+01		
^{226}Ra	58.916	100.00%	1	3.26E+03	2.10E+02	4.27E+02	1.02E+02		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 588556D | Sample # 7145 | Sample Size 1 Each | Date Analyzed 3/21/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RPDs	DER	
^{214}Bi	59.729	100.0%	1	2.33E+03	5.76E+01	2.11E+01	1.69E+01		5.2	1.5	Pass
^{214}Pb	59.729	100.00%	1	2.48E+03	1.17E+02	3.52E+01	1.64E+01		4.5	0.7	Pass
^{226}Ra	59.729	100.00%	1	3.20E+03	1.97E+02	3.00E+02	7.80E+01		1.7	0.2	Pass

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.
Duplicate Evaluation = (Sample-Duplicate) / sqrt ((TPUsample^2) + (TPUdup^2)) # 3

Sample ID 590212 | Sample # 7141 | Sample Size 1 Each | Date Analyzed 3/21/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	54.431	100.00%	1	4.55E+03	1.09E+02	2.90E+01	2.46E+01		
^{214}Pb	54.431	100.00%	1	4.86E+03	2.28E+02	4.13E+01	2.33E+01		
^{226}Ra	54.431	100.00%	1	5.76E+03	3.49E+02	5.33E+02	1.30E+02		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Note: Ra226 is not reported from this spreadsheet. JR 4/20/16

011341

Southwest Research Institute, Division 1, Radiochemistry

Gamma Spectroscopy Summary Sheet (1 sig)

Client: Tetra Tech (Set#9)
Task Order: 160115-1
Prep Page: N/A
Prep Date: N/A

Project #: 21431.01.001
SRR: 56591, 56639, 56785, 56876
TPU sig factor: 1
Units: g

Notes: _____

Sample ID 590213 | Sample # 7139 | Sample Size 1 Each | Date Analyzed 3/21/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	57.957	100.00%	1	1.98E+03	4.96E+01	2.48E+01	1.62E+01		
^{214}Pb	57.957	100.00%	1	2.04E+03	9.67E+01	3.53E+01	1.51E+01		
^{226}Ra	57.957	100.00%	1	2.80E+03	1.76E+02	3.14E+02	7.92E+01		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 590214 | Sample # 7137 | Sample Size 1 Each | Date Analyzed 3/21/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	57.783	100.00%	1	2.04E+02	7.24E+00	7.97E+00	5.30E+00		
^{214}Pb	57.783	100.00%	1	2.20E+02	1.11E+01	1.07E+01	4.71E+00		
^{226}Ra	57.783	100.00%	1	1.03E+03	6.82E+01	1.16E+02	3.54E+01		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Sample ID 591000 | Sample # 7135 | Sample Size 1 Each | Date Analyzed 3/21/2016

Isotope	Aliquot (g)	% Solids	Final Volume	Activity pCi/g	TPU pCi/g	MDA pCi/g	Count Error pCi/g		RDL pCi/g
^{214}Bi	56.555	100.00%	1	2.38E+03	5.89E+01	1.78E+01	1.74E+01		
^{214}Pb	56.555	100.00%	1	2.51E+03	1.18E+02	3.28E+01	1.68E+01		
^{226}Ra	56.555	100.00%	1	3.06E+03	1.91E+02	3.20E+02	8.16E+01		

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
Counting error equals TPU for "non-indentified" isotopes.
MDA calculated from the lowest MDA of all isotopic analytical lines.

Apex™

Analysis Report for 588049 Set#9

TetraTech TO#160115-1 Set#9

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 588049 Set#9
Sample Description	: TetraTech TO#160115-1 Set#9
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/21/2016 5:46:36PM
Acquisition Started	: 3/21/2016 5:47:44PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3620.8 seconds
Dead Time	: 0.57 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7143

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/Each)	Wt mean Activity Uncertainty	Comments
BI-214	0.979	2.00E+05	4.83E+03	
PB-214	0.998	2.08E+05	9.78E+03	
RA-226	0.995	2.62E+05	1.61E+04	

Analysis Report for 588049 Set#9

TetraTech TO#160115-1 Set#9

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:30:42PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.18	2.85335E+00	1.37		
	2	36.39	-1.25042E-01	- 30.2		
	3	46.57	4.31104E-01	7.78		
M	4	50.27	-8.17189E-02	- 27.0		
m	5	53.29	-7.26143E-02	- 27.2		
	6	67.77	1.92982E+00	2.81		
M	7	74.90	6.31378E-01	3.90		
m	8	77.17	1.34386E+00	3.79		
m	9	81.16	3.35756E-01	4.22		
m	10	83.86	8.66841E-01	3.84		
m	11	87.37	4.01605E-01	4.07		
m	12	89.83	5.47586E-02	11.68		
M	13	94.77	-4.85945E-01	- 11.4		
m	14	97.79	-3.58053E-02	- 29.3	D-Esc	
	15	144.13	1.17025E+00	4.65		
	16	154.31	6.88986E-01	5.01		
	18	236.11	-7.50000E-01	- 5.7		
	19	242.11	2.01994E+00	1.92		
M	20	253.93	1.52918E-01	9.08		
m	21	256.31	6.01349E-01	3.16		
m	22	258.95	1.43792E-01	9.32		
M	23	269.60	1.18294E+00	1.91		
m	24	271.36	9.09729E-01	2.25		
m	25	274.83	1.25729E-01	9.81		
	26	286.25	-7.08792E+00	- 0.9		
m	28	300.16	3.56145E-01	3.89		
m	29	302.82	2.01095E-01	6.16		
	30	324.03	8.83333E-02	22.53		
	31	330.05	1.16042E-01	20.40		
	32	338.40	1.19556E-01	14.72		
	34	389.22	1.70611E-01	13.29		
M	35	402.00	3.93359E-01	3.68		
m	36	405.10	2.37531E-01	5.23		
	37	427.30	1.19222E-01	14.90		

Analysis Report for 588049 Set#9

TetraTech TO#160115-1 Set#9

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	38	445.21	6.52778E-02	18.46		
	39	480.61	-1.29444E-02	- 120.7		
	40	487.25	3.62778E-02	45.79		
	41	580.28	4.86944E-02	20.79		
	43	665.74	2.44389E-01	5.74		
	44	703.28	1.01639E-01	13.49	Sum	
	45	720.21	4.77500E-02	22.50		
	46	768.71	7.57111E-01	2.44		
	47	786.28	1.47944E-01	8.41		
	48	806.45	1.97917E-01	6.37		
	49	832.32	3.53472E-02	34.94		
	50	839.41	-6.22223E-03	- 200.9		
	51	934.46	3.90347E-01	3.69		
	52	964.51	3.55000E-02	23.68		
	54	1155.70	1.82056E-01	5.39		
	55	1208.30	3.61111E-02	26.98		
	56	1238.65	5.90361E-01	2.59		
	57	1281.60	1.33333E-01	7.68		
M	58	1378.19	3.88106E-01	2.89		
m	59	1385.77	6.77554E-02	8.17		
M	60	1402.13	1.11381E-01	6.14		
m	61	1408.59	2.11674E-01	4.18		
	62	1509.75	1.94069E-01	5.49		
	63	1539.06	2.66111E-02	27.29		
	64	1583.80	5.86667E-02	13.04		
	65	1661.76	8.20833E-02	7.90		
	66	1684.39	1.22083E-02	34.79		
	67	1730.15	2.25833E-01	3.96	Sum	
	69	1847.85	1.37847E-01	5.16		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)

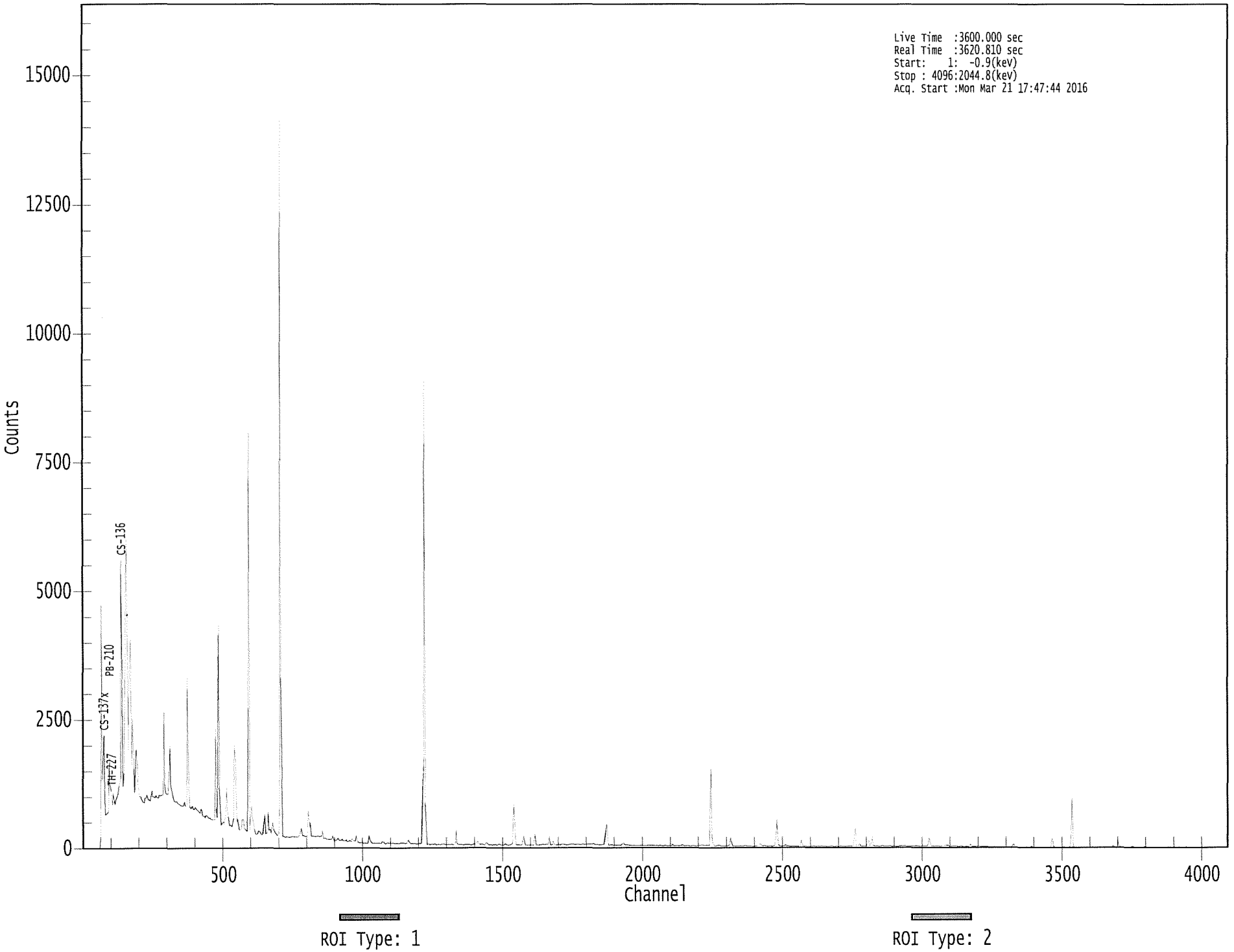
Analysis Report for 588049 Set#9

TetraTech TO#160115-1 Set#9

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	4.63E+03	9.55E+03	9.55E+03
+	BI-214	609.31	*	44.80	1.95E+05	1.43E+03	1.43E+03
		1120.29	*	14.80	2.03E+05		5.98E+03
		1764.49	*	15.36	2.02E+05		3.76E+03
+	PB-214	295.21	*	18.50	1.99E+05	2.30E+03	3.33E+03
		351.92	*	35.80	2.19E+05		2.30E+03
+	RA-226	186.10	*	3.50	2.62E+05	2.70E+04	2.70E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 588556 Set#9
TetraTech TO#160115-1 Set#9

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 588556 Set#9
Sample Description	: TetraTech TO#160115-1 Set#9
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/21/2016 3:43:17PM
Acquisition Started	: 3/21/2016 3:43:49PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3616.0 seconds
Dead Time	: 0.44 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7147

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.978	1.45E+05	3.56E+03	
PB-214	0.998	1.53E+05	7.22E+03	
RA-226	0.995	1.92E+05	1.24E+04	

Analysis Report for 588556 Set#9

TetraTech TO#160115-1 Set#9

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:32:03PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.20	2.16561E+00	1.62		
	2	36.39	-1.89014E-01	- 17.5		
	3	46.59	3.97924E-01	8.17		
	4	50.26	-2.83472E-02	- 82.4		
	5	67.76	2.54456E+00	1.92		
M	6	74.89	2.40379E-01	8.76		
m	7	77.17	5.40232E-01	8.66		
M	8	81.08	-4.53773E-02	- 9.7		
m	9	83.82	-1.40012E+00	- 4.7		
m	10	87.32	-4.72227E-01	- 4.8		
	11	94.71	-4.62139E-01	- 11.4		
	12	122.34	1.04833E-01	23.85		
	13	144.12	9.27930E-01	3.80		
	14	154.29	6.77639E-01	5.76		
	16	236.12	-3.18694E-01	- 10.5		
	17	242.13	1.42061E+00	2.42		
M	18	256.32	4.83255E-01	3.47		
m	19	259.04	1.25148E-01	9.42		
M	20	269.60	9.91165E-01	2.04		
m	21	271.39	7.20274E-01	2.48		
M	22	283.80	5.61239E-02	24.53		
m	23	286.20	6.87372E-02	24.48		
m	25	300.12	2.86396E-01	4.17		
m	26	302.69	1.52727E-01	6.80		
	27	324.03	9.70000E-02	15.63		
M	28	329.98	4.90040E-02	36.55		
m	29	334.49	1.14300E-02	37.80		
m	30	338.46	3.56771E-02	36.61		
	32	389.21	1.29833E-01	16.68		
M	33	402.00	3.35626E-01	3.81		
m	34	405.12	2.38367E-01	4.77		
	35	427.05	1.10444E-01	16.39		
	36	480.65	-1.61667E-02	- 81.8	Sum	
	37	487.12	4.55695E-02	27.34		

Analysis Report for 588556 Set#9

TetraTech TO#160115-1 Set#9

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	38	580.19	3.77778E-02	21.51		
	40	665.83	1.86389E-01	6.64		
	41	703.47	6.15000E-02	14.79	Sum	
	42	720.15	3.54167E-02	21.12		
	43	768.69	5.61972E-01	2.84		
	44	786.22	1.14444E-01	10.70		
	45	806.56	1.18694E-01	9.95		
	46	832.30	7.01389E-02	12.18		
	47	839.37	-2.77778E-04	-3370.2		
	48	934.48	2.76444E-01	4.53		
	50	1155.71	1.25278E-01	6.96		
	51	1238.65	4.14889E-01	3.05		
	52	1281.61	1.09611E-01	7.55		
M	53	1378.21	2.71232E-01	3.52		
m	54	1385.83	5.67833E-02	8.69		
M	55	1402.00	9.24924E-02	6.42		
m	56	1408.60	1.56764E-01	4.81		
	57	1509.65	1.42458E-01	6.58		
	58	1662.04	6.18750E-02	8.86		
	59	1730.16	1.61444E-01	4.82	Sum	
	61	1847.83	1.06000E-01	6.49		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	-1.36E+03	8.02E+03	8.02E+03
+	BI-214	609.31	*	44.80	1.44E+05	1.21E+03	1.21E+03
		1120.29	*	14.80	1.44E+05		4.43E+03
		1764.49	*	15.36	1.46E+05		3.12E+03
+	PB-214	295.21	*	18.50	1.47E+05	1.91E+03	2.66E+03
		351.92	*	35.80	1.61E+05		1.91E+03
+	RA-226	186.10	*	3.50	1.92E+05	2.52E+04	2.52E+04

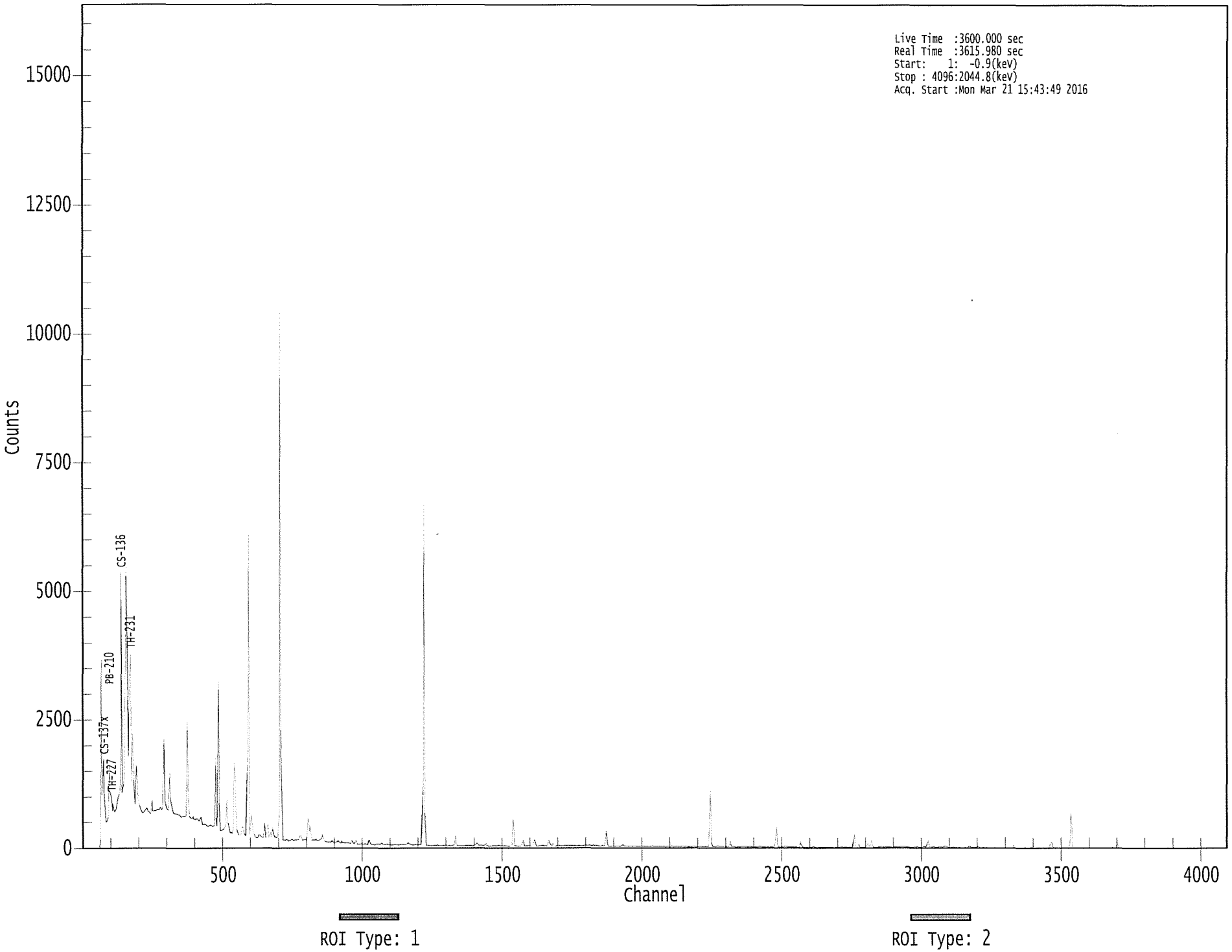
Analysis Report for 588556 Set#9

TetraTech TO#160115-1 Set#9

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 588556Dup.Set#9

TetraTech TO#160115-1 Set#9

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 588556Dup.Set#9
Sample Description	: TetraTech TO#160115-1 Set#9
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/21/2016 4:44:24PM
Acquisition Started	: 3/21/2016 4:45:48PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3615.4 seconds
Dead Time	: 0.43 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7145

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.976	1.39E+05	3.44E+03	
PB-214	0.998	1.48E+05	6.99E+03	
RA-226	0.994	1.91E+05	1.17E+04	

Analysis Report for 588556Dup.Set#9

TetraTech TO#160115-1 Set#9

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:31:22PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.21	1.96083E+00	1.61		
	2	36.44	-2.73611E-02	- 110.7		
	3	46.62	3.67479E-01	8.64		
M	4	50.26	-5.62879E-02	- 38.6		
m	5	53.29	-3.39760E-02	- 39.2		
	6	67.78	1.80287E+00	2.76		
M	7	74.89	2.59104E-01	7.98		
m	8	77.17	5.68674E-01	7.87		
M	9	81.09	-4.13613E-02	- 10.4		
m	10	83.82	-1.19580E+00	- 5.1		
m	11	87.30	-4.22766E-01	- 5.1		
	12	94.83	1.11111E-03	3070.07		
	13	144.11	8.91181E-01	4.64		
	14	154.30	5.09458E-01	5.77		
	16	236.09	-1.63986E-01	- 18.4		
	17	242.13	1.26417E+00	2.95		
M	18	256.34	4.69608E-01	3.51		
m	19	258.97	1.29626E-01	9.12		
M	20	269.58	8.84149E-01	2.21		
m	21	271.39	6.61750E-01	2.64		
M	22	283.86	8.94075E-02	11.72		
m	23	286.30	9.66682E-02	11.02		
m	25	300.17	2.85981E-01	4.37		
m	26	302.82	1.37007E-01	7.37		
	27	323.99	5.57222E-02	34.04		
	28	330.06	8.38750E-02	21.85		
	29	338.41	9.27500E-02	16.21		
M	31	402.04	3.09663E-01	3.98		
m	32	405.15	2.02370E-01	5.31		
	33	427.41	1.10694E-01	14.14		
	34	480.47	-3.05549E-04	-4302.3		
	35	487.11	2.75000E-02	42.55		
	36	580.48	4.44167E-02	18.92		
	38	665.68	1.59778E-01	5.83		

Analysis Report for 588556Dup.Set#9

TetraTech TO#160115-1 Set#9

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	39	703.35	5.43750E-02	18.66	Sum	
	40	768.73	5.28556E-01	2.85		
	41	786.15	1.17944E-01	9.15		
	42	806.49	1.01403E-01	10.75		
	43	832.22	4.98333E-02	17.85		
	44	839.52	-3.38333E-02	- 33.9		
	45	934.48	2.77972E-01	4.18		
	46	964.38	1.75972E-02	35.48		
	48	1155.64	1.30417E-01	7.31		
	49	1208.16	3.89444E-02	18.32		
	50	1238.73	4.17333E-01	2.99		
	51	1281.47	1.10806E-01	7.57		
M	52	1378.18	2.79040E-01	3.46		
m	53	1385.87	5.22596E-02	9.13		
M	54	1402.08	1.00692E-01	6.09		
m	55	1408.54	1.70389E-01	4.60		
	56	1509.75	1.29917E-01	7.24		
	57	1583.80	5.38889E-02	12.49		
	58	1661.66	5.71389E-02	9.21		
	59	1730.13	1.64806E-01	4.57	Sum	
	61	1847.93	8.90278E-02	7.15		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	6.97E+02	7.93E+03	7.93E+03
+	BI-214	609.31	*	44.80	1.38E+05	1.26E+03	1.26E+03
		1120.29	*	14.80	1.42E+05		5.53E+03
		1764.49	*	15.36	1.39E+05		2.57E+03
+	PB-214	295.21	*	18.50	1.43E+05	2.10E+03	2.81E+03
		351.92	*	35.80	1.54E+05		2.10E+03
+	RA-226	186.10	*	3.50	1.91E+05	1.79E+04	1.79E+04

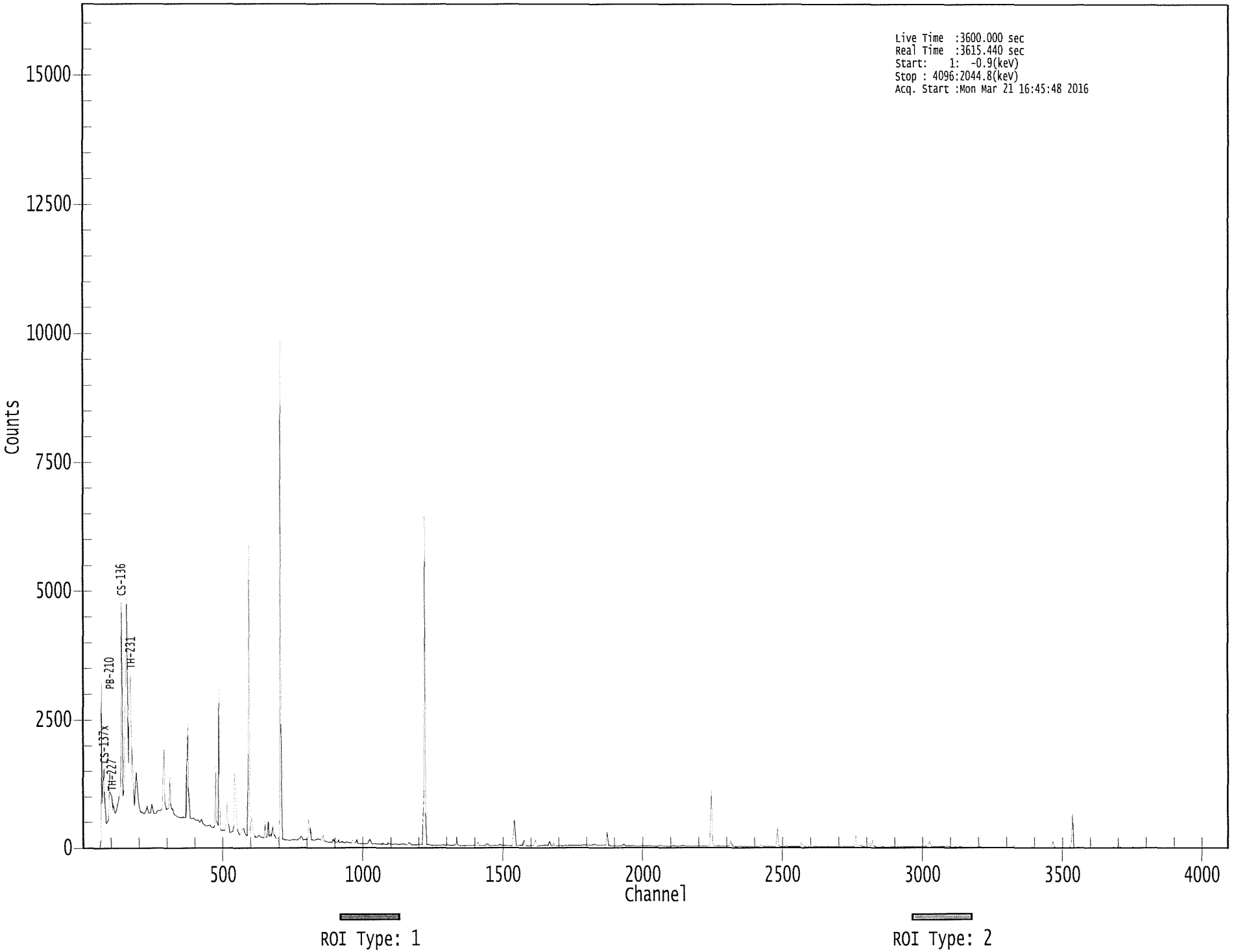
Analysis Report for 588556Dup.Set#9

TetraTech TO#160115-1 Set#9

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 590212 Set#9

TetraTech TO#160115-1 Set#9

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 590212 Set#9
Sample Description	: TetraTech TO#160115-1 Set#9
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/21/2016 5:51:15PM
Acquisition Started	: 3/21/2016 6:48:48PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3626.1 seconds
Dead Time	: 0.72 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7141

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.978	2.48E+05	5.92E+03	
PB-214	0.998	2.64E+05	1.24E+04	
RA-226	0.995	3.13E+05	1.90E+04	

Analysis Report for 590212 Set#9

TetraTech TO#160115-1 Set#9

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:29:47PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.20	3.70293E+00	1.20		
	2	36.39	-1.06833E-01	- 40.1		
	3	46.56	4.42841E-01	8.36		
M	4	50.26	-4.38899E-02	- 61.3		
m	5	53.29	-2.56378E-02	- 61.6		
	6	67.77	3.18542E+00	1.59		
M	7	74.91	7.90855E-01	3.41		
m	8	77.16	1.74631E+00	3.30		
m	9	81.14	4.52357E-01	3.65		
m	10	83.89	1.15640E+00	3.33		
m	11	87.33	5.02821E-01	3.57		
m	12	89.95	6.25153E-02	11.65		
	13	94.77	-7.07778E-01	- 9.6		
	14	112.94	1.99778E-01	21.84		
	15	122.48	4.97778E-02	83.32		
	16	144.11	1.56493E+00	3.46		
	17	154.32	8.99000E-01	4.81		
	19	210.81	8.12500E-02	45.21		
	20	236.12	-9.05278E-01	- 5.3		
	21	242.12	2.19062E+00	2.25		
M	22	253.97	2.06231E-01	7.46		
m	23	256.37	8.08674E-01	2.63		
m	24	259.03	2.53497E-01	6.16		
M	25	269.58	1.45184E+00	1.71		
m	26	271.34	1.16444E+00	1.97		
	27	286.24	-6.94361E+00	- 0.8		
m	29	300.13	4.62306E-01	3.53		
m	30	302.78	2.44231E-01	5.79		
	31	323.97	1.62667E-01	15.44		
	32	330.06	7.95555E-02	31.78		
	33	338.43	1.43556E-01	12.85		
	35	389.24	1.76889E-01	11.81		
M	36	401.99	5.34651E-01	3.08		
m	37	405.12	3.72548E-01	3.93		

Analysis Report for 590212 Set#9

TetraTech TO#160115-1 Set#9

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	38	427.23	1.70625E-01	13.23		
	39	445.18	7.76111E-02	24.55		
	40	455.12	4.17778E-02	43.55		
	41	480.66	1.26389E-02	111.92	Sum	
	42	487.29	5.45555E-02	34.61		
	43	510.98	2.56757E-01	7.26		
	44	580.46	5.84028E-02	19.28		
	46	665.79	3.12708E-01	4.29		
	47	703.52	1.12361E-01	11.46	Sum	
	48	720.17	7.55000E-02	13.94		
	49	768.69	9.71278E-01	2.25		
	50	786.24	1.99611E-01	7.01		
	51	806.55	2.23667E-01	6.03		
	52	832.33	8.55000E-02	13.63		
	53	839.41	-1.59722E-03	- 866.7		
	54	934.47	5.10722E-01	3.22		
	55	964.38	5.15555E-02	19.12		
	56	1052.33	2.58333E-02	29.77		
	57	1070.39	5.60556E-02	22.26		
	59	1155.74	2.20056E-01	5.85		
	60	1208.24	5.52361E-02	17.45		
	61	1238.67	7.68472E-01	2.15		
	62	1281.58	1.76597E-01	6.85		
M	63	1378.23	4.73636E-01	2.63		
m	64	1385.74	1.04258E-01	6.48		
M	65	1402.05	1.42417E-01	5.31		
m	66	1408.57	2.63304E-01	3.71		
	67	1509.79	2.31667E-01	5.09		
	68	1539.38	2.33750E-02	28.51		
	69	1583.74	6.53889E-02	12.49		
	70	1661.88	1.03611E-01	7.83		
	71	1730.16	3.00556E-01	3.49	Sum	
	73	1838.90	8.00000E-03	58.13		
	74	1847.96	1.60833E-01	5.53		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

Analysis Report for 590212 Set#9

TetraTech TO#160115-1 Set#9

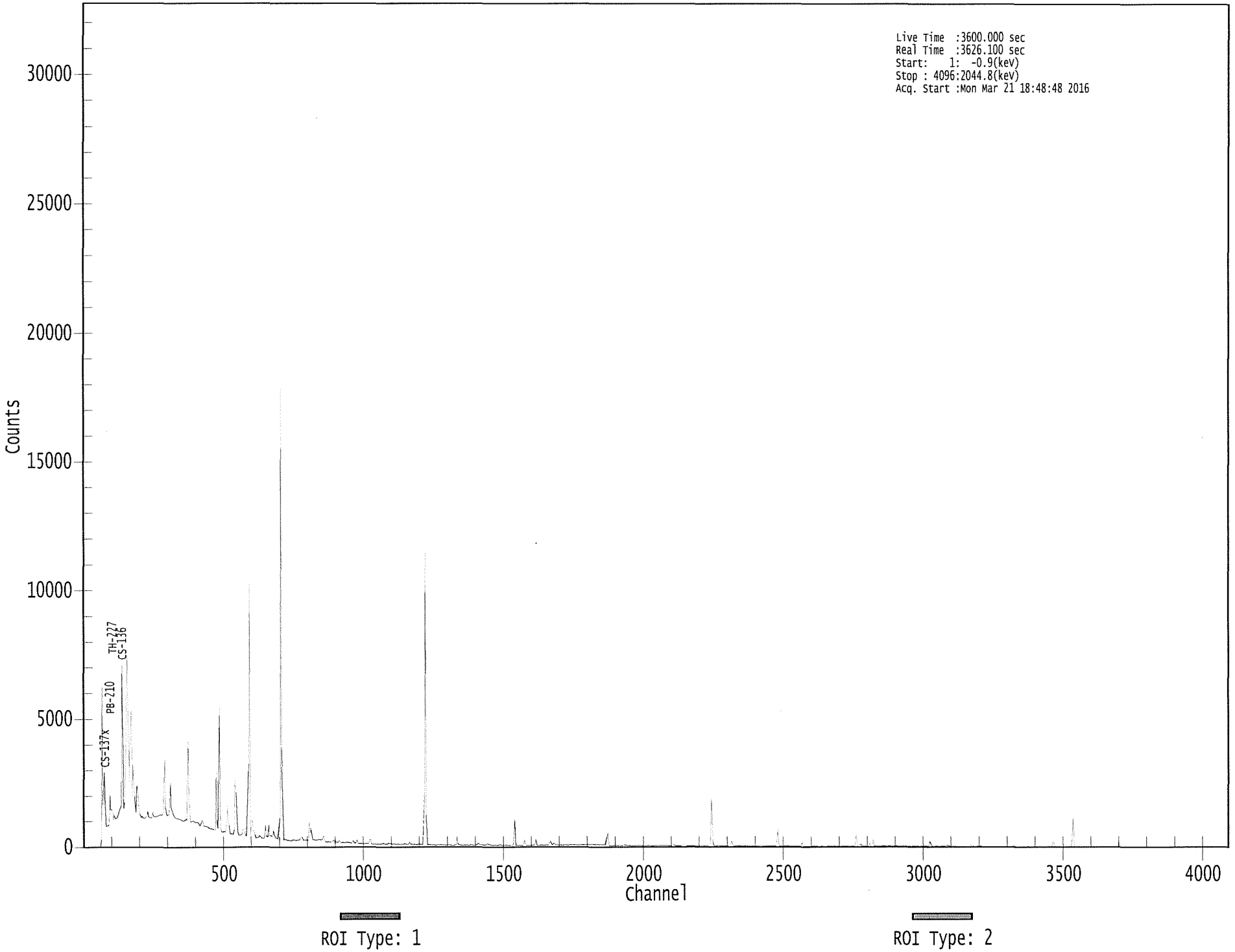
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	2.59E+03	1.05E+04	1.05E+04
+	BI-214	609.31	*	44.80	2.46E+05	1.58E+03	1.58E+03
		1120.29	*	14.80	2.51E+05		7.03E+03
		1764.49	*	15.36	2.46E+05		4.01E+03
+	PB-214	295.21	*	18.50	2.57E+05	2.25E+03	3.78E+03
		351.92	*	35.80	2.73E+05		2.25E+03
+	RA-226	186.10	*	3.50	3.13E+05	2.90E+04	2.90E+04

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 590213 Set#9

TetraTech TO#160115-1 Set#9

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 590213 Set#9
Sample Description	: TetraTech TO#160115-1 Set#9
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/21/2016 5:53:56PM
Acquisition Started	: 3/21/2016 8:05:26PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3613.0 seconds
Dead Time	: 0.36 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7139

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.974	1.15E+05	2.87E+03	
PB-214	0.998	1.18E+05	5.60E+03	
RA-226	0.994	1.62E+05	1.02E+04	

Analysis Report for 590213 Set#9

TetraTech TO#160115-1 Set#9

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:29:08PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.17	1.50611E+00	1.82		
	2	36.41	7.77778E-02	31.57		
	3	46.61	3.28188E-01	8.39		
	4	50.25	-1.33750E-02	- 158.1		
	5	67.77	1.60389E+00	2.54		
M	6	74.87	3.33052E-01	5.83		
m	7	77.16	7.67841E-01	5.69		
m	8	81.15	1.96231E-01	6.12		
m	9	83.87	4.90295E-01	5.73		
m	10	87.36	2.11848E-01	6.04		
m	11	89.83	1.99818E-02	22.29		
	12	94.79	-3.91667E-02	- 79.8		
	13	144.09	7.32500E-01	4.94		
	14	154.28	4.81222E-01	6.96		
	16	236.13	-2.72292E-01	- 11.1		
	17	242.13	1.06514E+00	3.09		
M	18	256.35	3.64454E-01	4.03		
m	19	259.02	1.07447E-01	9.85		
M	20	269.59	7.10205E-01	2.46		
m	21	271.36	5.99883E-01	2.73		
m	22	274.87	9.54626E-02	10.21		
	23	286.21	-2.61694E+00	- 1.4		
m	25	300.18	2.09677E-01	5.04		
m	26	302.82	1.18008E-01	7.91		
	27	324.02	6.26667E-02	27.58		
M	28	329.94	3.53913E-02	44.04		
m	29	334.56	8.16792E-03	45.76		
m	30	338.50	3.03713E-02	44.07		
	32	389.23	9.82639E-02	18.25		
M	33	402.05	2.77791E-01	4.21		
m	34	405.21	1.66264E-01	5.95		
	35	445.07	3.33333E-02	35.02		
	36	487.16	1.10000E-02	122.20		
	38	665.71	1.54278E-01	6.26		

Analysis Report for 590213 Set#9

TetraTech TO#160115-1 Set#9

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	39	703.44	5.27500E-02	16.28	Sum	
	40	720.36	2.74306E-02	25.96		
	41	768.74	4.46389E-01	3.26		
	42	786.19	9.32500E-02	9.48		
	43	806.53	9.19444E-02	10.60		
	44	832.35	4.15694E-02	19.44		
	45	839.36	2.52777E-03	354.53		
	46	934.54	2.14222E-01	4.99		
	48	1155.72	9.20556E-02	8.11		
	49	1208.12	2.74583E-02	25.77		
	50	1238.65	3.51806E-01	3.29		
	51	1281.45	8.10000E-02	9.16		
M	52	1378.18	2.45922E-01	3.66		
m	53	1385.87	4.63532E-02	9.56		
M	54	1402.00	7.02767E-02	7.54		
m	55	1408.51	1.19369E-01	5.56		
	56	1509.87	1.01000E-01	7.58		
	57	1539.25	1.83333E-02	26.24		
	58	1583.76	3.18750E-02	17.01		
	59	1661.88	4.98333E-02	9.35		
	60	1730.15	1.35972E-01	4.95	Sum	
	62	1847.88	9.09028E-02	6.21		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	-7.11E+02	7.36E+03	7.36E+03
+	BI-214	609.31	*	44.80	1.13E+05	1.44E+03	1.44E+03
		1120.29	*	14.80	1.17E+05		4.19E+03
		1764.49	*	15.36	1.15E+05		2.82E+03
+	PB-214	295.21	*	18.50	1.12E+05	2.04E+03	2.49E+03
		351.92	*	35.80	1.27E+05		2.04E+03
+	RA-226	186.10	*	3.50	1.62E+05	1.82E+04	1.82E+04

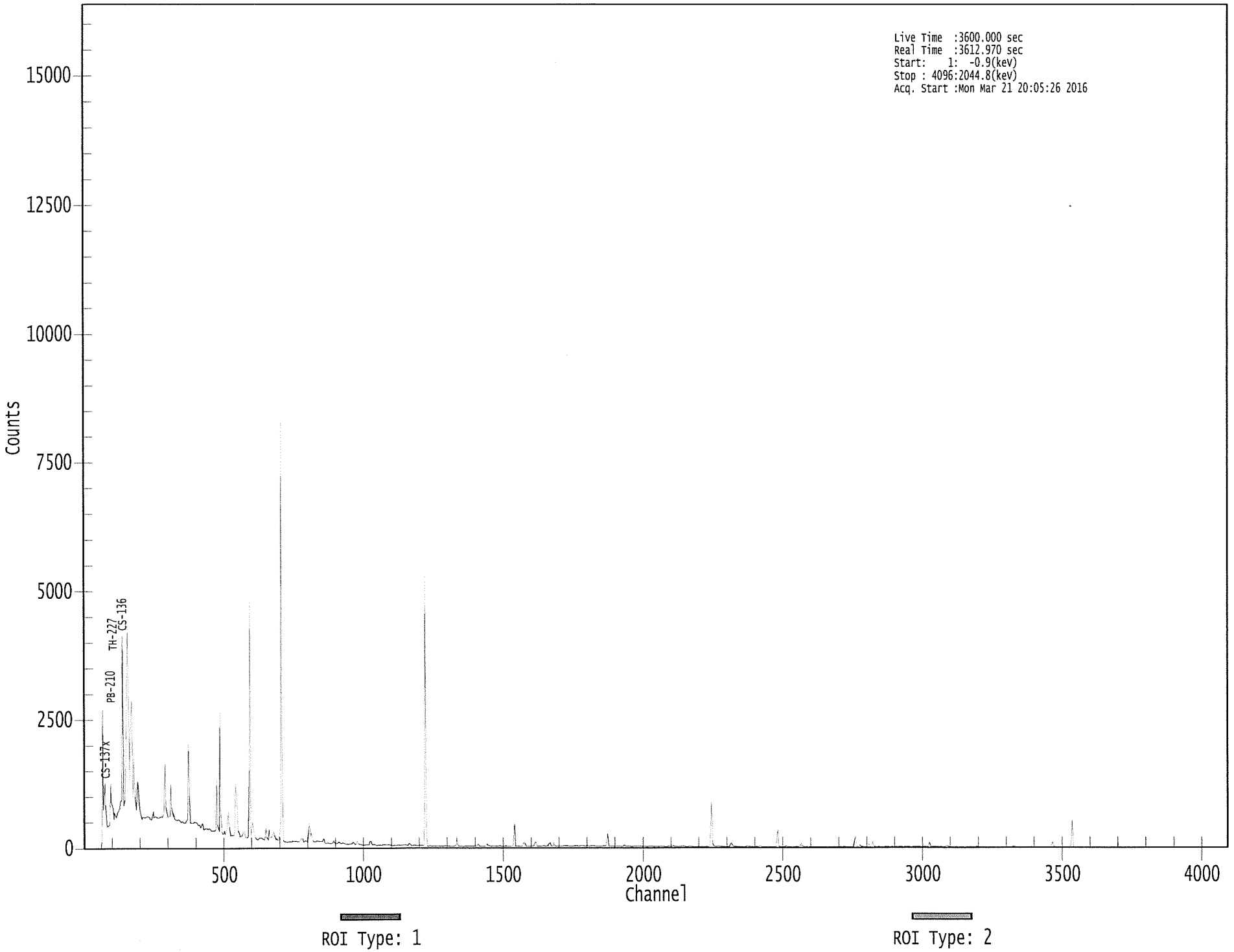
Analysis Report for 590213 Set#9

TetraTech TO#160115-1 Set#9

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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011366

Apex™

Analysis Report for 590214 Set#9

TetraTech TO#160115-1 Set#9

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 590214 Set#9
Sample Description	: TetraTech TO#160115-1 Set#9
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/21/2016 5:56:07PM
Acquisition Started	: 3/21/2016 9:06:32PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3603.1 seconds
Dead Time	: 0.09 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7137

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.969	1.18E+04	4.19E+02	
PB-214	0.999	1.27E+04	6.44E+02	
RA-226	0.995	5.97E+04	3.94E+03	

Analysis Report for 590214 Set#9

TetraTech TO#160115-1 Set#9

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:28:01PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	31.05	4.93343E-02	17.36		
	2	46.66	3.62433E-02	42.40		
	3	50.14	8.19444E-02	16.97		
	4	63.31	2.46626E-01	9.86		
	5	67.77	7.76389E-02	27.85		
M	6	74.84	-8.98746E-02	- 15.4		
m	7	77.28	-1.94403E-01	- 11.8		
M	8	81.17	2.04220E-01	6.11		
m	9	83.89	5.04912E-01	3.14		
M	10	92.66	5.85052E-01	2.81		
m	11	94.65	1.78130E-01	6.03		
	12	144.19	2.19056E-01	7.31		
	13	154.29	9.92778E-02	13.73		
	15	236.15	1.18917E-01	11.13		
	16	242.04	3.29444E-02	33.64		
	17	256.34	1.19681E-01	9.53		
M	18	269.57	2.10965E-01	4.18		
m	19	271.33	1.59109E-01	4.92		
m	21	300.13	5.58278E-02	8.50		
m	22	302.98	3.93851E-02	10.94		
	23	324.06	1.95972E-02	32.16		
	24	330.11	1.91111E-02	38.57		
	25	338.44	2.65556E-02	20.21		
M	27	401.99	5.53203E-02	8.43		
m	28	405.10	4.58029E-02	9.48		
	30	768.67	5.90000E-02	9.09		
	31	934.49	1.69444E-02	18.25		
	32	1001.42	2.90556E-02	13.61		
	34	1238.78	2.97361E-02	11.56		
	35	1378.08	1.95278E-02	16.37		

Analysis Report for 590214 Set#9

TetraTech TO#160115-1 Set#9

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

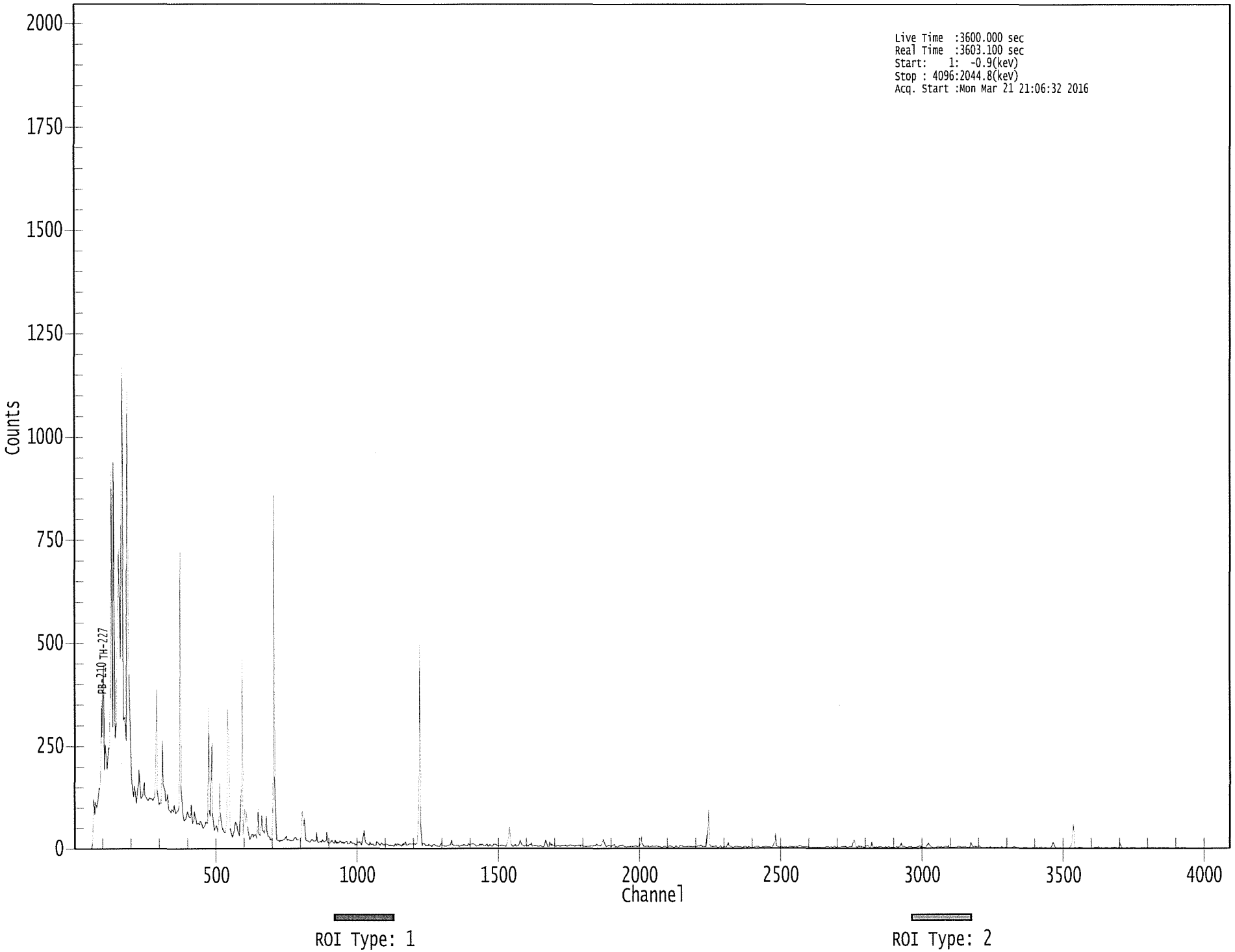
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	1.89E+03	3.66E+03	3.66E+03
+	BI-214	609.31	*	44.80	1.11E+04	4.60E+02	4.60E+02
		1120.29	*	14.80	1.18E+04		1.22E+03
		1764.49	*	15.36	1.34E+04		1.02E+03
+	PB-214	295.21	*	18.50	1.15E+04	6.16E+02	9.45E+02
		351.92	*	35.80	1.44E+04		6.16E+02
+	RA-226	186.10	*	3.50	5.97E+04	6.69E+03	6.69E+03

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 591000 Set#9

TetraTech TO#160115-1 Set#9

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 591000 Set#9
Sample Description	: TetraTech TO#160115-1 Set#9
Sample Type	: Soil
Sample Size	: 1.000E+00 Each
Facility	: Default
Sample Taken On	: 3/21/2016 5:58:10PM
Acquisition Started	: 3/21/2016 10:22:58PM
Procedure	: 300g Can Rsd Ra226
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3614.2 seconds
Dead Time	: 0.39 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7135

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/Each)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.985	1.35E+05	3.33E+03	
PB-214	0.998	1.42E+05	6.69E+03	
RA-226	0.995	1.73E+05	1.08E+04	

Analysis Report for 591000 Set#9

TetraTech TO#160115-1 Set#9

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:24:14PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.17	1.78000E+00	1.68		
	2	36.39	1.17499E-02	230.35		
	3	46.64	7.13785E-01	4.26		
	4	50.22	-1.76750E-01	- 12.4		
	5	67.76	2.01375E+00	2.08		
M	6	74.86	4.90273E-01	4.85		
m	7	77.16	1.02236E+00	4.75		
m	8	81.14	1.45854E-01	5.94		
m	9	83.87	4.90016E-01	4.84		
m	10	87.30	2.91681E-01	5.04		
m	11	89.92	4.72285E-02	11.43		
	12	94.73	-1.58056E-01	- 19.8		
	13	144.10	7.03764E-01	4.13		
	14	154.31	4.79861E-01	7.52		
	16	236.09	-4.95083E-01	- 6.2		
	17	242.11	1.35017E+00	2.54		
M	18	254.05	1.13665E-01	9.80		
m	19	256.33	3.48315E-01	4.19		
m	20	258.96	1.29308E-01	8.69		
M	21	269.60	6.27491E-01	2.69		
m	22	271.32	4.39978E-01	3.39		
	23	286.33	-2.84628E+00	- 1.3		
m	25	300.14	1.84819E-01	6.14		
m	26	302.77	8.89525E-02	10.55		
	27	324.01	7.40278E-02	21.42		
	28	330.17	6.06944E-02	26.32		
	29	338.49	6.94444E-02	21.49		
	31	389.07	9.57223E-02	19.24		
M	32	402.00	2.21203E-01	5.07		
m	33	405.06	1.45141E-01	6.80		
	34	427.41	6.23611E-02	26.76		
	35	480.67	1.81111E-02	59.62	Sum	
	36	487.31	1.85556E-02	59.88		
	37	511.20	1.81202E-01	9.40		

Analysis Report for 591000 Set#9
TetraTech TO#160115-1 Set#9

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	38	580.30	3.45833E-02	24.11		
	40	665.74	1.69569E-01	6.20		
	41	703.27	5.17639E-02	16.14	Sum	
	42	720.18	4.67222E-02	17.65		
	43	768.64	5.06167E-01	2.94		
	44	786.25	1.02333E-01	8.90		
	45	806.37	1.21139E-01	7.92		
	46	832.22	3.80556E-02	26.66		
	47	839.29	4.77778E-03	177.96		
	48	934.42	2.76222E-01	4.60		
	50	1155.69	1.19722E-01	7.47		
	51	1208.20	2.90972E-02	22.70		
	52	1238.60	3.99819E-01	3.17		
	53	1281.51	1.08000E-01	7.93		
M	54	1378.17	2.44903E-01	3.72		
m	55	1385.74	4.40211E-02	10.40		
M	56	1401.99	8.56222E-02	6.69		
m	57	1408.36	1.44338E-01	5.06		
	58	1509.74	1.22778E-01	6.92		
	59	1583.62	3.36389E-02	16.82		
	60	1661.84	6.49722E-02	8.56		
	61	1730.02	1.41889E-01	5.03	Sum	
	63	1847.91	1.01875E-01	6.17		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/Each)	Nuclide MDA (pCi/Each)	Line MDA (pCi/Each)
	K-40	1460.83		10.67	1.14E+03	8.02E+03	8.02E+03
+	BI-214	609.31	*	44.80	1.33E+05	1.01E+03	1.01E+03
		1120.29	*	14.80	1.37E+05		4.23E+03
		1764.49	*	15.36	1.34E+05		3.08E+03
+	PB-214	295.21	*	18.50	1.39E+05	1.85E+03	2.73E+03
		351.92	*	35.80	1.46E+05		1.85E+03
+	RA-226	186.10	*	3.50	1.73E+05	1.81E+04	1.81E+04

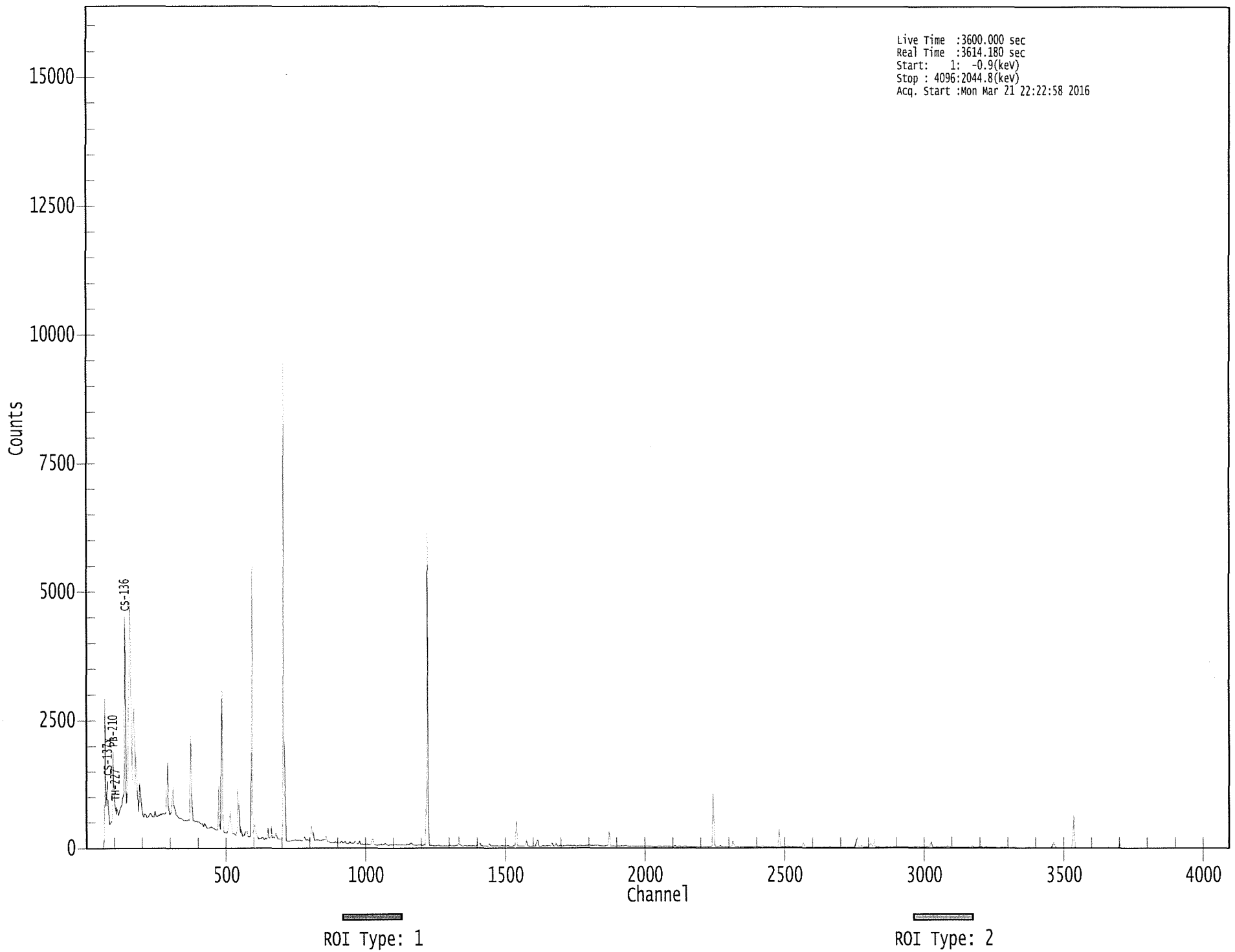
Analysis Report for 591000 Set#9

TetraTech TO#160115-1 Set#9

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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011375

SOUTHWEST RESEARCH INSTITUTE
CLIENT: Tetra Tech
TASK ORDER#: 160115-1
SRR#: 56591, 56639, 56785, 56876
SDG: 588049
VTSR: 11.20.15, 12.01.15, 12.01.15, 01.15.16
PROJECT#: 21431.01.001

BULK SAMPLES Bi214, Pb214 & Ra226 GAMMA RAW DATA

Tetra Tech
TO#160115-1
Bulk Gamma Spec

4/26/16

Units = pCi/g, as Rec'd

System ID	Analysis Date	Bi214 Activity	Bi214 uncert	Bi214 MDA	Pb214 Activity	Pb214 uncert	Pb214 MDA	Activity Calc: Ra226	Calc: Ra226 uncert	Calc: Ra226 Nuclide MDA
588049	3/14/2016	2.82E+03	6.52E+01	9.76E+00	2.74E+03	1.29E+02	1.67E+01	2.78E+03	1.45E+02	1.32E+01
588556	3/14/2016	1.93E+03	4.53E+01	1.23E+01	2.03E+03	9.52E+01	1.61E+01	1.98E+03	1.05E+02	1.42E+01
588556D	3/14/2016	1.93E+03	4.54E+01	9.16E+00	2.03E+03	9.53E+01	1.79E+01	1.98E+03	1.06E+02	1.35E+01
590212	3/14/2016	3.90E+03	9.02E+01	1.64E+01	3.88E+03	1.82E+02	2.45E+01	3.89E+03	2.03E+02	2.05E+01
590213	3/14/2016	1.56E+03	3.68E+01	1.03E+01	1.55E+03	7.29E+01	1.58E+01	1.56E+03	8.17E+01	1.31E+01
590214	3/14/2016	1.51E+02	4.38E+00	3.14E+00	1.68E+02	8.13E+00	5.06E+00	1.60E+02	9.23E+00	4.10E+00
591000	3/14/2016	8.81E+02	2.11E+01	5.54E+00	8.94E+02	4.21E+01	9.42E+00	8.88E+02	4.71E+01	7.48E+00

588049

$$\text{Ra226 activity} = \frac{(\text{Bi214 activity} + \text{Pb214 activity})}{2} = \frac{(2820\,pCi/g + 2740\,pCi/g)}{2} = 2780\,pCi/g$$

RSpin 4/20/16

011377

011373

Apex™

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 588049R2
Sample Description	: Tetra Tech TO# 160115-1
Sample Type	: Soil
Sample Size	: 3.059E+02 grams
Facility	: Default
Sample Taken On	: 1/19/2016 1:05:00PM
Acquisition Started	: 3/14/2016 3:05:16PM
Procedure	: Raised 300g can soil
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3686.0 seconds
Dead Time	: 2.33 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7131

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
BI-214	0.961	2.82E+03	6.52E+01	
PB-214	0.996	2.74E+03	1.29E+02	
RA-226	0.994	3.01E+03	1.76E+02	

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:21:40PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	36.41	1.14925E+00	4.90		
	2	46.61	4.84840E-01	12.26		
	3	50.17	-1.31597E-01	- 33.5		
	4	67.77	3.60089E+00	2.17		
M	5	74.93	1.56330E+00	2.74		
m	6	77.16	2.86750E+00	2.69		
m	7	81.15	6.26950E-01	3.05		
m	8	83.91	1.85385E+00	2.72		
m	9	87.34	1.01828E+00	2.82		
m	10	89.81	1.37400E-01	7.20		
M	11	94.74	-9.98099E-01	- 10.5		
m	12	97.81	-4.69009E-02	- 34.2		
	13	144.12	3.38369E+00	2.76		
	14	154.30	2.35097E+00	3.18		
	15	158.73	-9.43194E-01	- 7.9		
	17	210.77	1.32306E-01	52.75		
	18	236.13	-3.09910E+00	- 2.8		
	19	242.15	7.12675E+00	1.23		
M	20	254.05	5.51185E-01	5.16		
m	21	256.35	2.19076E+00	1.76		
m	22	259.10	6.10573E-01	4.64		
M	23	269.62	4.36536E+00	1.03		
m	24	271.39	3.46673E+00	1.19		
m	25	274.70	3.57887E-01	7.20		
	26	286.27	-2.44352E+01	- 0.4		
m	28	300.19	1.32634E+00	2.12		
m	29	302.81	7.46140E-01	3.35		
	30	314.95	1.24945E-01	43.23		
	31	324.08	5.49806E-01	7.24		
M	32	330.04	3.06920E-01	15.22		
m	33	334.40	5.25366E-02	16.21		
m	34	338.46	2.40404E-01	15.23		
M	36	386.98	3.04695E-01	6.70		
m	37	389.04	4.10147E-01	5.39		

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M	38	402.05	1.69067E+00	1.78		
m	39	405.16	1.19094E+00	2.25		
	40	427.35	5.23583E-01	7.83		
	41	445.21	1.96333E-01	16.40		
	42	455.07	2.25208E-01	13.33		
	43	462.24	-8.06527E-02	- 48.9		
M	44	470.02	-1.07674E-01	- 30.9		
m	45	474.53	-3.67844E-02	- 32.8		
	46	480.83	8.43056E-02	31.58	Sum	
	47	487.39	5.06668E-02	75.33		
	48	511.04	1.00702E+00	4.15		
	49	533.89	1.26250E-01	19.17		
	50	580.48	2.82000E-01	10.82		
	52	665.83	1.02576E+00	2.60		
	53	683.95	6.10000E-02	38.99		
	54	703.35	3.72500E-01	5.98	Sum	
	55	720.25	2.36667E-01	10.50		
	56	742.92	1.00278E-01	32.52	D-Esc	
	57	753.36	9.07778E-02	21.09		
	58	768.80	3.29206E+00	1.26		
	59	786.33	7.00056E-01	4.81		
	60	806.60	7.61222E-01	3.33		
M	61	821.65	2.99964E-03	170.17		
m	62	826.60	8.53196E-04	172.00		
m	63	832.41	2.45361E-02	170.03		
	64	839.50	-2.68053E-03	- 875.2		
	65	934.54	1.68489E+00	2.02		
	66	964.68	1.76694E-01	11.53		
	67	1052.44	1.08611E-01	14.89		
	68	1070.65	1.58944E-01	13.04		
	69	1104.82	4.89028E-02	33.31		
	71	1134.21	1.17917E-01	14.54		
	72	1155.80	7.84778E-01	2.91		
	73	1182.67	1.12597E-01	15.98		
	74	1208.24	1.86583E-01	8.77		
	75	1238.77	2.61108E+00	1.22		
	76	1281.67	6.20250E-01	3.42		
M	77	1378.37	1.68742E+00	1.38		
m	78	1385.92	3.29465E-01	3.72		
M	79	1402.18	5.24564E-01	2.74		
m	80	1408.66	9.88875E-01	1.88		
	81	1509.94	8.25486E-01	2.63		
M	82	1539.35	1.71582E-01	6.40		
m	83	1544.01	1.20173E-01	8.01		
	84	1584.03	2.27833E-01	6.29		

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M	85	1595.64	8.47532E-02	9.81		
m	86	1600.05	9.71416E-02	8.82		
	87	1662.01	3.80694E-01	3.80		
	88	1684.91	7.03333E-02	12.06		
	89	1693.62	3.21111E-02	34.26		
	90	1730.36	1.00571E+00	1.91	Sum	
	92	1839.14	-1.59444E-01	- 8.3		
	93	1848.19	6.22500E-01	2.72		
	94	1873.82	7.71389E-02	13.77		
	95	1896.43	4.48889E-02	19.86		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

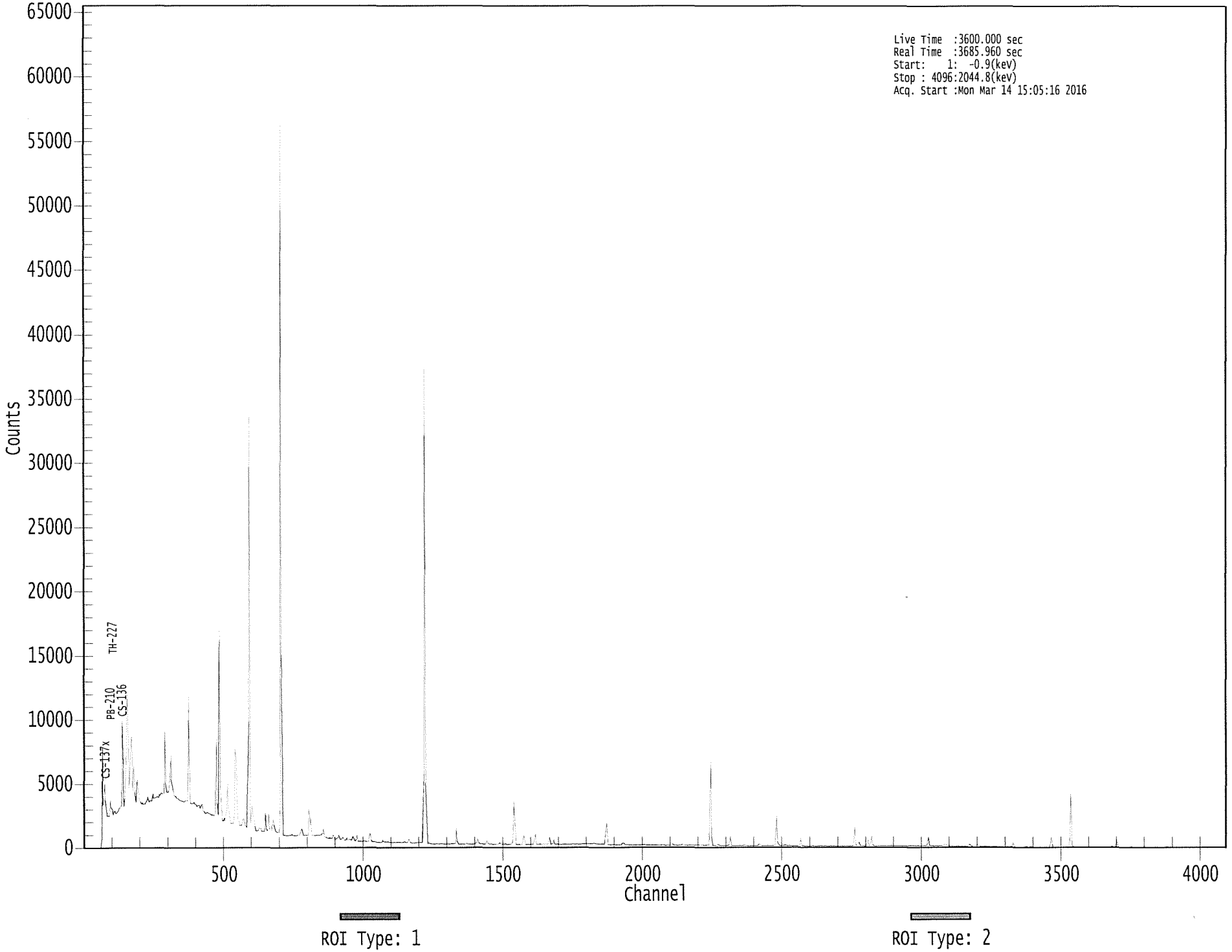
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	K-40	1460.83		10.67	-1.07E+00	6.39E+01	6.39E+01
+	BI-214	609.31	*	44.80	2.73E+03	9.76E+00	9.76E+00
		1120.29	*	14.80	2.83E+03		3.78E+01
		1764.49	*	15.36	2.88E+03		2.90E+01
+	PB-214	295.21	*	18.50	2.63E+03	1.67E+01	2.20E+01
		351.92	*	35.80	2.89E+03		1.67E+01
+	RA-226	186.10	*	3.50	3.01E+03	2.02E+02	2.02E+02

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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011382

Apex™

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 588556R2
Sample Description	: Tetra Tech TO# 160115-1
Sample Type	: Soil
Sample Size	: 2.084E+02 grams
Facility	: Default
Sample Taken On	: 1/19/2016 12:35:00PM
Acquisition Started	: 3/14/2016 4:12:12PM
Procedure	: Raised 300g can soil
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3639.9 seconds
Dead Time	: 1.10 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7129

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/grams)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.956	1.93E+03	4.53E+01	
PB-214	0.996	2.03E+03	9.52E+01	
RA-226	0.994	2.36E+03	1.38E+02	

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:20:39PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.19	2.69944E+00	1.54		
	2	36.39	3.70055E-01	12.34		
	3	46.66	4.58646E-01	7.73		
M	4	50.28	-1.07993E-01	- 30.8		
m	5	53.29	-6.00346E-02	- 31.4		
	6	67.76	2.73983E+00	2.46		
M	7	74.90	9.40090E-01	3.22		
m	8	77.16	2.02036E+00	3.14		
m	9	81.14	5.31718E-01	3.44		
m	10	83.88	1.45754E+00	3.16		
m	11	87.37	6.00508E-01	3.37		
m	12	89.98	7.47615E-02	10.59		
	13	94.77	-5.83625E-01	- 13.4		
	14	122.39	2.31875E-01	21.16		
	15	144.13	2.17403E+00	2.49		
	16	154.30	1.47118E+00	4.56		
	17	158.68	-6.62000E-01	- 8.3		
	19	210.80	6.02224E-02	81.50		
	20	236.15	-7.81653E-01	- 7.1		
	21	242.15	3.44169E+00	1.75		
M	22	254.06	3.10476E-01	6.17		
m	23	256.38	1.27140E+00	2.11		
m	24	259.05	3.54494E-01	5.45		
M	25	269.64	2.48736E+00	1.31		
m	26	271.41	1.98387E+00	1.50		
m	27	274.78	2.34882E-01	7.35		
	28	283.77	-1.41531E+01	- 0.6		
m	30	300.19	7.92053E-01	2.68		
m	31	302.92	4.33024E-01	4.20		
	32	324.05	-8.41667E-02	- 45.3		
	33	330.02	-3.87222E+00	- 2.3		
M	35	387.09	1.42371E-01	9.63		
m	36	389.10	2.16716E-01	7.05		
M	37	402.08	8.75877E-01	2.37		

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	38	405.17	5.86985E-01	3.10		
	39	427.35	2.63889E-01	11.90		
	40	445.29	1.31389E-01	18.91		
	41	455.15	7.55834E-02	29.18		
	42	480.61	1.48611E-02	119.92		
	43	487.46	6.80556E-02	28.48		
	44	511.18	4.53869E-01	5.84		
	45	533.98	4.87500E-02	30.80		
	46	580.42	9.06667E-02	15.47		
	48	665.83	4.95167E-01	3.50		
	49	703.47	1.74250E-01	9.55	Sum	
	50	720.28	1.10889E-01	15.59		
	51	768.82	1.55710E+00	1.73		
	52	786.33	3.25347E-01	5.71		
	53	806.64	3.67000E-01	5.01		
	54	821.67	7.50000E-03	153.36		
	55	832.46	1.56111E-01	10.59		
	56	839.40	9.86125E-04	1448.82		
	57	934.58	7.76722E-01	2.45		
	58	964.76	7.25278E-02	22.47		
	59	1052.52	8.01806E-02	19.69		
	60	1070.48	5.69444E-02	21.24		
	62	1134.15	5.54861E-02	25.15		
	63	1155.85	3.54778E-01	4.13		
	64	1208.42	8.77778E-02	14.09		
	65	1238.80	1.25268E+00	1.77		
	66	1254.23	7.97222E-02	13.68	S-Esc	
	67	1281.70	2.98194E-01	4.85		
M	68	1378.38	7.68227E-01	2.05		
m	69	1386.00	1.63770E-01	5.16		
M	70	1402.27	2.47226E-01	3.99		
m	71	1408.71	4.31035E-01	2.86		
	72	1509.97	3.65278E-01	4.50		
	73	1539.41	3.55417E-02	34.99		
	74	1583.93	1.14472E-01	8.43		
M	75	1595.53	4.27078E-02	12.68		
m	76	1600.16	5.14368E-02	11.08		
	77	1662.13	1.69917E-01	5.39		
	78	1684.69	2.77778E-02	23.15		
	79	1730.39	4.80833E-01	2.71	Sum	
	81	1839.00	3.17361E-02	20.94		
	82	1848.19	2.67444E-01	4.28		
	83	1874.14	2.09722E-02	22.29		

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Analysis Report for 588556R2

Tetra Tech TO# 160115-1

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

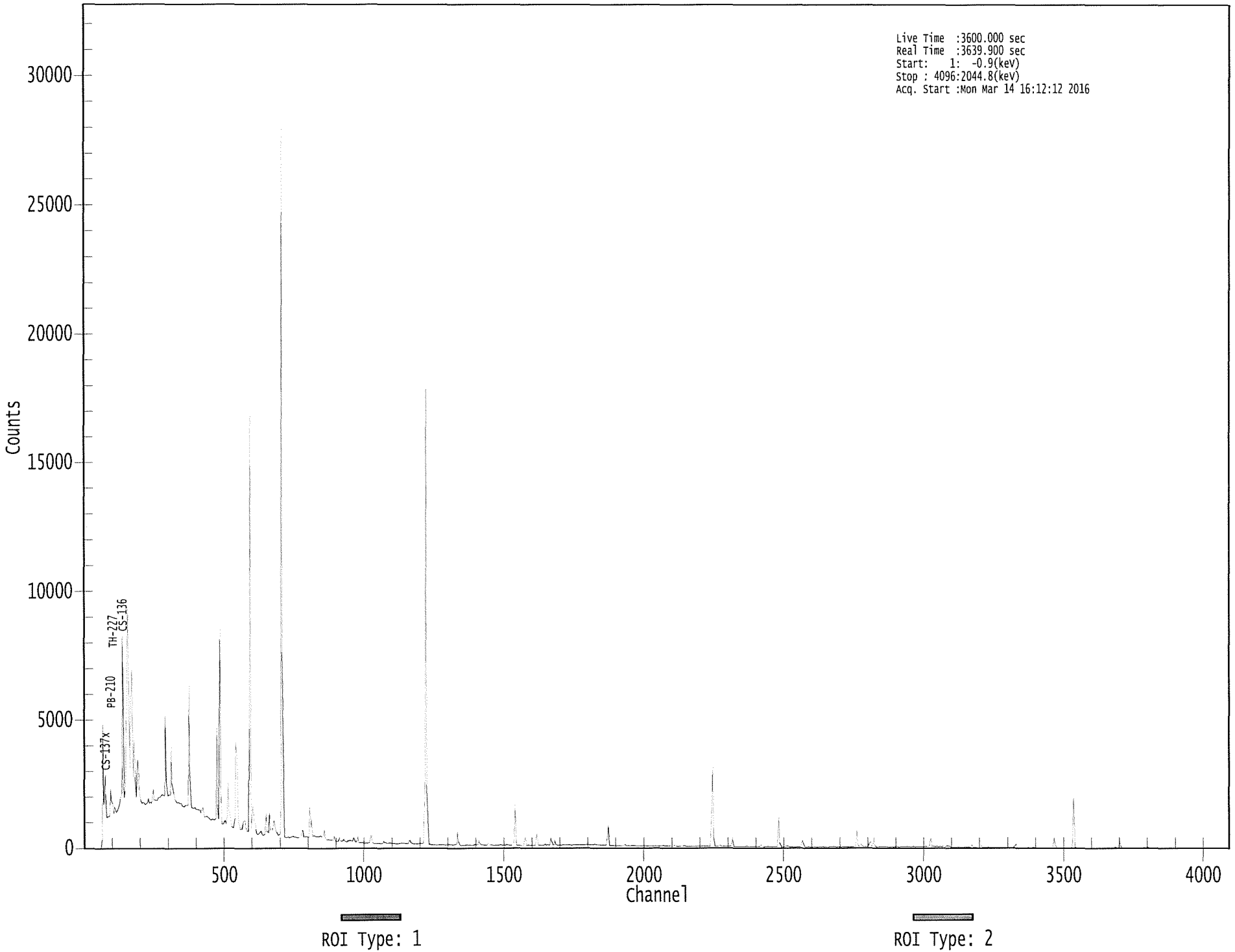
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	K-40	1460.83		10.67	-2.18E+00	6.39E+01	6.39E+01
+	BI-214	609.31	*	44.80	1.90E+03	1.23E+01	1.23E+01
		1120.29	*	14.80	1.95E+03		3.61E+01
		1764.49	*	15.36	1.93E+03		2.38E+01
+	PB-214	295.21	*	18.50	1.95E+03	1.61E+01	2.17E+01
		351.92	*	35.80	2.12E+03		1.61E+01
+	RA-226	186.10	*	3.50	2.36E+03	1.43E+02	1.43E+02

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 588556Dup.R2
Sample Description	: Tetra Tech TO# 160115-1
Sample Type	: Soil
Sample Size	: 2.084E+02 grams
Facility	: Default
Sample Taken On	: 1/19/2016 12:35:00PM
Acquisition Started	: 3/14/2016 5:24:26PM
Procedure	: Raised 300g can soil
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3640.0 seconds
Dead Time	: 1.10 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7127

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/grams)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.964	1.93E+03	4.54E+01	
PB-214	0.996	2.03E+03	9.53E+01	
RA-226	0.993	2.39E+03	1.42E+02	

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:19:01PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.17	2.74375E+00	1.51		
	2	36.45	5.63792E-01	7.22		
	3	46.57	3.33035E-01	13.62		
	4	50.24	-1.15416E-02	- 281.4		
	5	67.77	2.88319E+00	2.05		
M	6	74.90	1.00948E+00	3.00		
m	7	77.16	2.16547E+00	2.91		
m	8	81.14	5.93166E-01	3.21		
m	9	83.89	1.55206E+00	2.93		
m	10	87.33	6.77658E-01	3.13		
m	11	89.87	7.02764E-02	11.87		
M	12	94.77	-4.47319E-01	- 16.1		
m	13	97.81	-4.19311E-02	- 22.1		
	14	113.19	2.97917E-01	19.05		
	15	122.51	1.78056E-01	25.89		
	16	144.12	2.19424E+00	3.10		
	17	154.31	1.58244E+00	3.67		
	18	158.73	-6.45680E-01	- 8.0		
	20	210.81	6.64442E-02	73.63		
	21	236.13	-9.18056E-02	- 52.4		
	22	242.14	3.53389E+00	1.71		
M	23	254.01	3.34801E-01	5.81		
m	24	256.36	1.29692E+00	2.08		
m	25	259.07	3.97007E-01	4.96		
M	26	269.62	2.48397E+00	1.31		
m	27	271.38	1.96542E+00	1.52		
m	28	274.74	1.96026E-01	8.83		
	29	286.31	-5.07225E+00	- 1.3		
m	31	300.18	6.98011E-01	2.78		
m	32	302.92	3.48336E-01	4.70		
	33	315.13	1.99722E-01	16.93		
	34	324.05	2.83194E-01	10.04		
M	35	330.08	-5.23537E-01	- 9.4		
m	36	338.48	-3.01157E-01	- 9.6		

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	38	389.20	3.21389E-01	8.24		
M	39	402.05	9.03203E-01	2.34		
m	40	405.14	6.01051E-01	3.07		
	41	427.35	2.93472E-01	7.36		
	42	445.31	1.44278E-01	11.84		
	43	455.25	1.31944E-03	2022.31		
	44	462.23	3.75000E-02	48.61		
	45	480.71	5.55420E-05	36036.1	Sum	
	46	487.38	7.10417E-02	31.98		
	47	511.12	4.39202E-01	5.31		
	48	533.89	4.06944E-02	36.86		
	49	580.35	2.01278E-01	10.09		
	51	665.82	4.88264E-01	3.91		
	52	703.53	1.75139E-01	9.63	Sum	
	53	720.29	1.25722E-01	12.39		
	54	768.78	1.56356E+00	1.82		
	55	786.32	3.37611E-01	5.65		
	56	806.57	3.48444E-01	4.89		
	57	821.45	2.04028E-02	53.10		
	58	832.38	1.48194E-01	11.66		
	59	839.41	-6.22223E-03	- 257.2		
	60	934.52	7.97944E-01	2.35		
	61	964.87	9.96111E-02	12.75		
	62	1052.40	7.57639E-02	16.63		
	63	1070.54	6.93056E-02	17.88		
	65	1134.28	5.22778E-02	24.13		
	66	1155.81	3.83667E-01	3.89		
	67	1208.39	8.12639E-02	11.82		
	68	1238.75	1.23006E+00	1.73		
	69	1281.59	2.72153E-01	5.64		
M	70	1378.32	7.74518E-01	2.05		
m	71	1385.88	1.56199E-01	5.34		
M	72	1402.21	2.66583E-01	3.78		
m	73	1408.65	4.48774E-01	2.79		
	74	1509.89	3.84375E-01	4.51		
M	75	1539.41	7.78686E-02	9.50		
m	76	1544.07	5.73481E-02	11.24		
	77	1583.97	1.17528E-01	8.05		
M	78	1595.37	4.56704E-02	12.39		
m	79	1599.90	5.40029E-02	10.94		
	80	1661.95	1.83056E-01	5.53		
	81	1684.59	2.62222E-02	23.61		
	82	1730.30	4.70056E-01	2.72	Sum	
	84	1839.13	-1.74333E-01	- 5.7		
	85	1848.17	2.92292E-01	3.67		

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

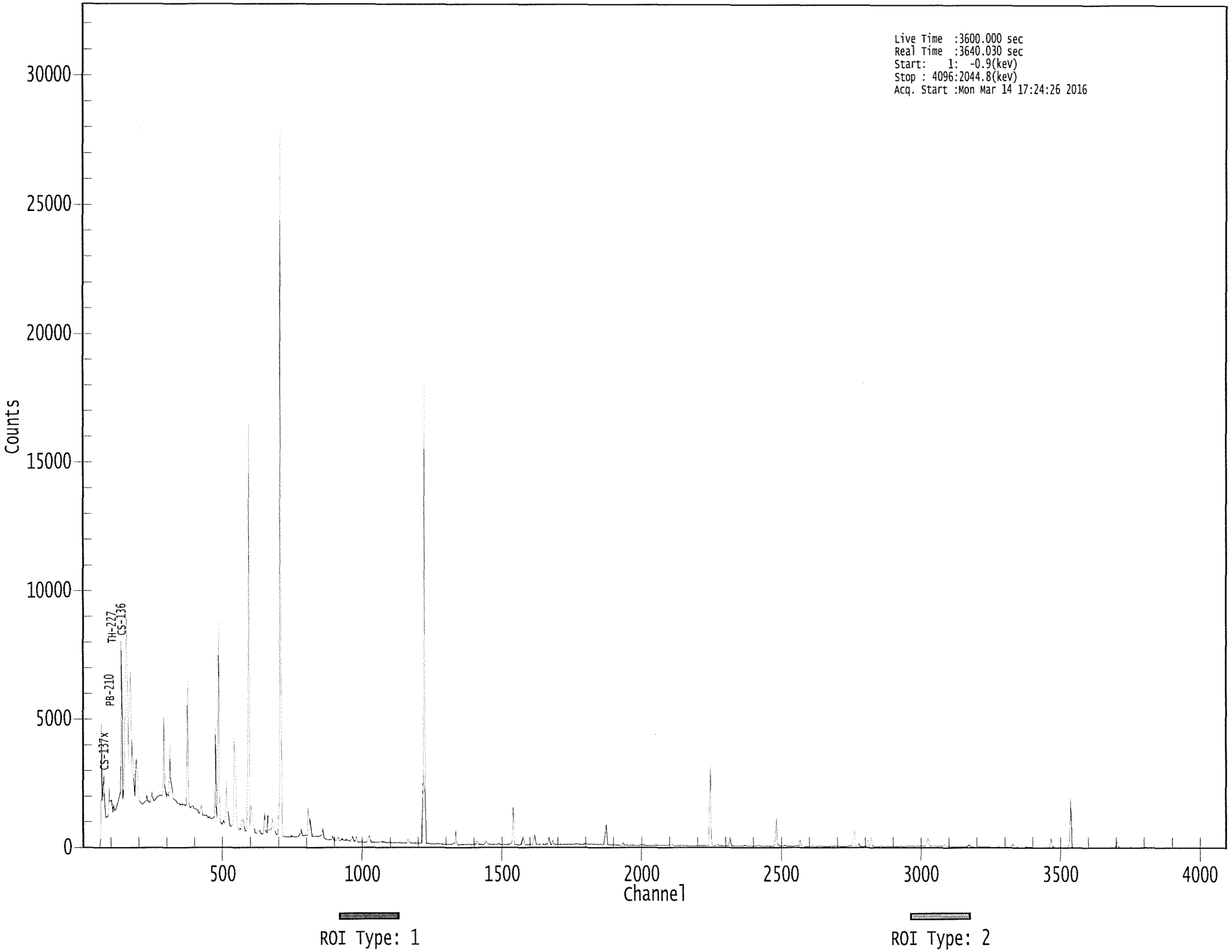
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	K-40	1460.83		10.67	4.84E+00	6.44E+01	6.44E+01
+	BI-214	609.31	*	44.80	1.91E+03	9.16E+00	9.16E+00
		1120.29	*	14.80	1.98E+03		3.96E+01
		1764.49	*	15.36	1.92E+03		2.02E+01
+	PB-214	295.21	*	18.50	1.96E+03	1.79E+01	2.21E+01
		351.92	*	35.80	2.12E+03		1.79E+01
+	RA-226	186.10	*	3.50	2.39E+03	1.82E+02	1.82E+02

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 590212R2
Sample Description	: Tetra Tech TO# 160115-1
Sample Type	: Soil
Sample Size	: 2.294E+02 grams
Facility	: Default
Sample Taken On	: 1/19/2016 1:20:00PM
Acquisition Started	: 3/14/2016 6:27:34PM
Procedure	: Raised 300g can soil
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3685.9 seconds
Dead Time	: 2.33 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7125

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/grams)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.966	3.90E+03	9.02E+01	
PB-214	0.997	3.88E+03	1.82E+02	
RA-226	0.994	4.12E+03	2.37E+02	

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:18:07PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.20	4.80278E+00	1.18		
	2	36.40	5.63611E-01	10.77		
	3	46.68	3.80702E-01	15.55		
M	4	50.27	6.72343E-03	481.36		
m	5	53.29	6.44334E-03	481.36		
	6	67.77	3.99767E+00	1.97		
M	7	74.91	1.48905E+00	2.65		
m	8	77.17	2.97040E+00	2.59		
m	9	81.15	7.46511E-01	2.87		
m	10	83.89	2.06295E+00	2.61		
m	11	87.35	1.06633E+00	2.72		
m	12	89.91	1.36210E-01	7.41		
M	13	94.75	-7.24469E-01	- 12.8		
m	14	97.83	-9.73500E-02	- 15.9		
	15	113.17	3.98722E-01	17.86		
	16	122.34	2.39334E-01	30.59		
	17	144.13	3.93286E+00	2.34		
	18	154.32	2.57294E+00	3.55		
	20	210.79	2.82028E-01	25.57		
	21	236.12	-4.71922E+00	- 2.1		
	22	242.13	7.50814E+00	1.17		
M	23	254.04	6.79630E-01	4.19		
m	24	256.37	2.43983E+00	1.58		
m	25	259.05	7.09235E-01	3.99		
M	26	269.61	4.88571E+00	0.95		
m	27	271.39	3.88666E+00	1.10		
m	28	274.76	4.80687E-01	5.35		
M	29	281.40	3.37814E-02	25.71		
m	30	283.87	4.44324E-01	2.59		
m	31	286.26	4.98257E-01	2.42		
m	33	300.16	1.58016E+00	1.92		
m	34	302.81	8.96587E-01	2.98		
m	35	304.68	3.78849E-01	6.06		
	36	314.98	4.44236E-01	11.35		

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	37	324.05	3.90055E-01	12.00		
M	38	330.06	2.72872E-01	16.66		
m	39	334.39	4.27746E-02	17.79		
m	40	338.50	2.29771E-01	16.67		
M	42	387.06	3.12111E-01	6.60		
m	43	389.12	4.12170E-01	5.36		
M	44	402.04	1.90187E+00	1.63		
m	45	405.18	1.21337E+00	2.23		
	46	427.39	6.49431E-01	7.22		
	47	445.26	2.08167E-01	16.22		
	48	455.11	-6.71251E-02	- 64.6		
	49	462.13	5.43334E-02	53.61		
	50	470.10	1.87500E-02	140.53		
	51	480.73	-3.11667E-02	- 95.4	Sum	
	52	487.37	1.33778E-01	26.43		
	53	511.13	1.10648E+00	3.85		
	54	533.92	1.72431E-01	18.84		
	55	580.43	3.04611E-01	10.82		
	57	665.79	1.12849E+00	2.26		
	58	703.52	4.06111E-01	5.55	Sum	
	59	720.25	2.95153E-01	9.49		
	60	742.93	9.94166E-02	29.13	D-Esc	
	61	768.77	3.35856E+00	1.23		
	62	786.29	7.17000E-01	3.24		
	63	806.59	7.46403E-01	3.74		
	64	821.73	2.82917E-02	64.82		
	65	832.38	2.47917E-01	10.70		
	66	839.49	-4.09722E-02	- 63.0		
	67	934.54	1.72267E+00	1.81		
	68	964.55	1.93889E-01	11.59		
	69	1052.48	1.53472E-01	9.82		
	70	1070.38	1.63694E-01	12.84		
	72	1134.28	-7.37236E-01	- 3.7		
	73	1155.77	8.20417E-01	2.88		
	74	1182.47	8.41667E-02	18.16		
	75	1208.17	1.76667E-01	11.58		
	76	1238.71	2.69389E+00	1.23		
	77	1253.77	1.88889E-01	12.18	S-Esc	
	78	1281.60	6.79097E-01	3.43		
M	79	1378.32	1.73873E+00	1.37		
m	80	1385.98	3.50399E-01	3.58		
M	81	1402.23	5.53607E-01	2.67		
m	82	1408.65	9.73293E-01	1.91		
	83	1509.84	8.57222E-01	2.87		
M	84	1539.42	1.71916E-01	6.41		

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	85	1544.04	1.27530E-01	7.69		
	86	1583.92	2.07944E-01	7.99		
M	87	1595.26	9.28543E-02	9.32		
m	88	1599.91	1.16279E-01	7.87		
	89	1661.99	4.04917E-01	4.19		
	90	1684.70	5.10556E-02	16.42		
	91	1693.79	2.89167E-02	43.90		
	92	1730.30	1.03819E+00	1.94	Sum	
	94	1838.94	-1.04819E-01	- 11.7		
	95	1848.08	5.90611E-01	2.82		
	96	1873.88	5.93472E-02	13.17		
	97	1896.60	4.42361E-02	18.96		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

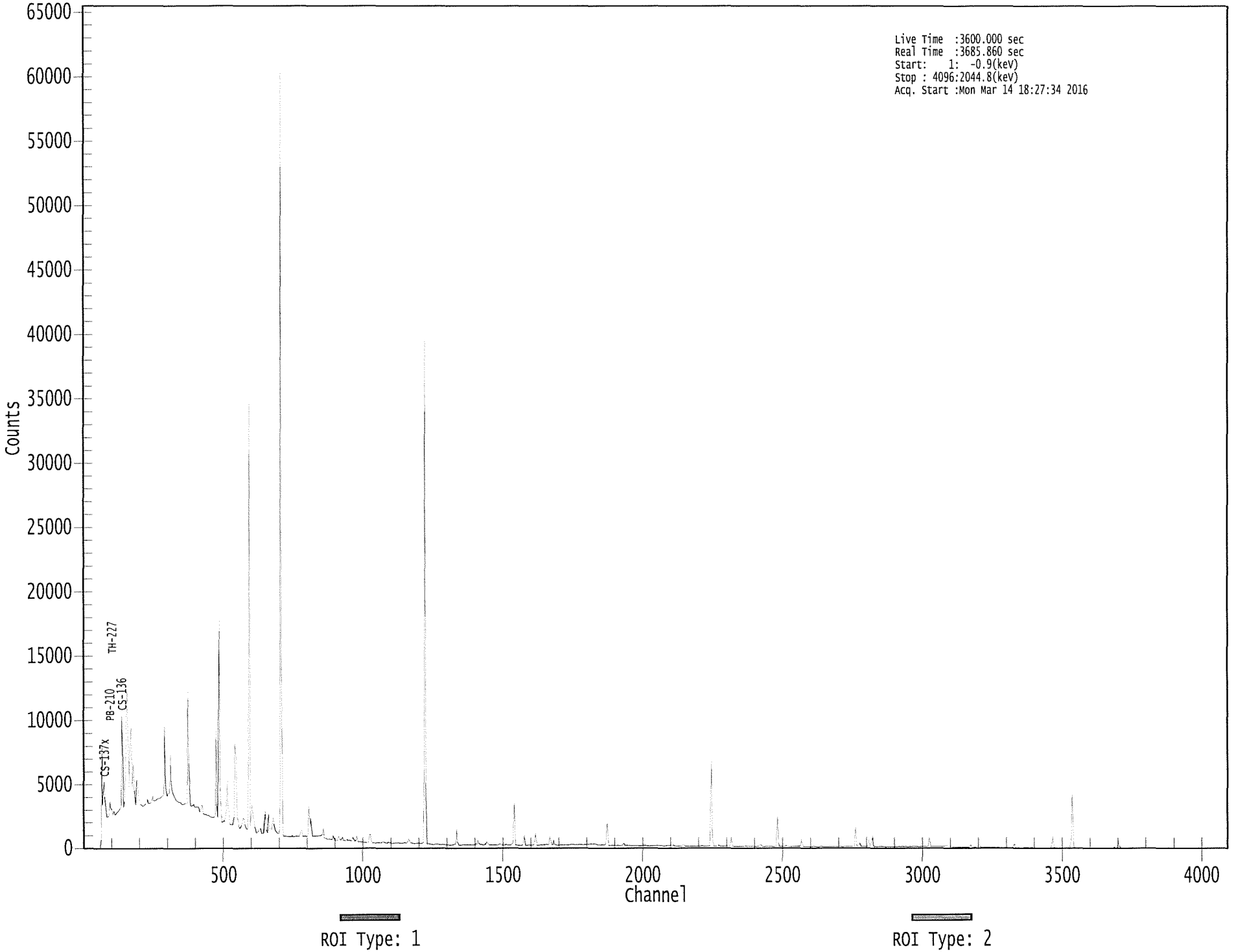
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	K-40	1460.83		10.67	6.32E+00	8.58E+01	8.58E+01
+	BI-214	609.31	*	44.80	3.81E+03	1.64E+01	1.64E+01
		1120.29	*	14.80	3.91E+03		5.34E+01
		1764.49	*	15.36	3.96E+03		3.35E+01
+	PB-214	295.21	*	18.50	3.70E+03	2.45E+01	3.04E+01
		351.92	*	35.80	4.11E+03		2.45E+01
+	RA-226	186.10	*	3.50	4.12E+03	2.01E+02	2.01E+02

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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011397

Apex™

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 590213R2
Sample Description	: Tetra Tech TO# 160115-1
Sample Type	: Soil
Sample Size	: 2.223E+02 grams
Facility	: Default
Sample Taken On	: 1/19/2016 1:50:00PM
Acquisition Started	: 3/14/2016 7:45:44PM
Procedure	: Raised 300g can soil
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3634.8 seconds
Dead Time	: 0.96 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7123

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
BI-214	0.963	1.56E+03	3.68E+01	
PB-214	0.996	1.55E+03	7.29E+01	
RA-226	0.994	1.78E+03	1.05E+02	

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:17:14PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.17	2.11907E+00	1.84		
	2	36.38	4.34194E-01	9.64		
	3	46.61	3.47090E-01	12.26		
	4	50.27	-6.44583E-02	- 46.8		
	5	67.76	2.83539E+00	2.10		
M	6	74.91	9.98752E-01	3.05		
m	7	77.17	1.99451E+00	2.97		
m	8	81.13	5.08997E-01	3.32		
m	9	83.89	1.30704E+00	3.01		
m	10	87.37	6.08880E-01	3.21		
m	11	89.90	1.05320E-01	7.78		
M	12	94.76	-7.25964E-01	- 10.0		
m	13	97.83	-3.59808E-02	- 26.9		
	14	144.10	1.85694E+00	3.59		
	15	154.31	1.16211E+00	4.43		
	17	210.77	3.46528E-02	125.46		
	18	236.15	-1.69279E+00	- 3.6		
	19	242.14	3.11058E+00	1.81		
M	20	254.04	2.72075E-01	6.72		
m	21	256.35	1.04611E+00	2.39		
m	22	259.15	3.02480E-01	6.04		
M	23	269.61	2.00003E+00	1.49		
m	24	271.38	1.64295E+00	1.68		
m	25	274.76	2.25196E-01	7.27		
	26	283.78	-4.08314E+00	- 1.4		
m	28	300.15	6.35071E-01	3.15		
m	29	302.85	3.17104E-01	5.13		
	30	324.01	2.45778E-01	10.21		
M	31	330.05	1.24392E-01	22.25		
m	32	334.35	1.66991E-02	24.91		
m	33	338.44	1.09243E-01	22.26		
M	35	387.10	1.25945E-01	10.38		
m	36	389.09	1.56341E-01	8.87		
M	37	402.05	7.46889E-01	2.63		

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	38	405.23	5.27838E-01	3.31		
	39	427.35	2.36833E-01	11.93		
	40	445.10	7.35556E-02	26.03		
	41	455.08	5.80139E-02	35.98		
	42	462.20	4.65417E-02	42.95		
	43	469.88	3.41668E-03	507.37		
	44	480.64	-1.49445E-02	- 125.2		
	45	487.41	6.40833E-02	38.86		
	46	510.94	3.65507E-01	7.54		
	47	534.06	3.91806E-02	33.92		
	48	580.42	1.07875E-01	11.00		
	50	665.80	4.51389E-01	4.01		
	51	703.38	1.66903E-01	8.84	Sum	
	52	720.06	8.55000E-02	18.61		
	53	768.79	1.35178E+00	1.84		
	54	786.29	2.98889E-01	6.30		
	55	806.60	3.19417E-01	5.43		
	56	821.42	1.95556E-02	58.87		
	57	832.48	1.34583E-01	9.87		
	58	839.45	-2.15278E-02	- 75.7		
	59	934.52	6.91597E-01	2.92		
	60	964.67	7.53889E-02	16.53		
	61	1052.71	5.29167E-02	22.24		
	62	1070.51	6.00278E-02	26.37		
	64	1155.83	3.14333E-01	4.14		
	65	1208.24	8.04861E-02	13.30		
	66	1238.74	1.06189E+00	2.01		
	67	1253.82	6.65556E-02	15.71	S-Esc	
	68	1281.62	2.40139E-01	5.19		
M	69	1378.33	6.78748E-01	2.20		
m	70	1385.97	1.31345E-01	5.92		
M	71	1402.27	2.11263E-01	4.34		
m	72	1408.64	3.99190E-01	2.97		
	73	1509.95	3.34306E-01	4.10		
M	74	1539.31	8.01183E-02	8.95		
m	75	1543.96	4.75638E-02	12.42		
	76	1583.92	1.05889E-01	8.36		
M	77	1595.52	4.26421E-02	12.68		
m	78	1599.95	4.06214E-02	13.08		
	79	1661.81	1.32722E-01	6.07		
	80	1730.35	4.01389E-01	3.03	Sum	
	82	1839.16	-1.57403E-01	- 6.0		
	83	1848.18	2.49278E-01	3.74		

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

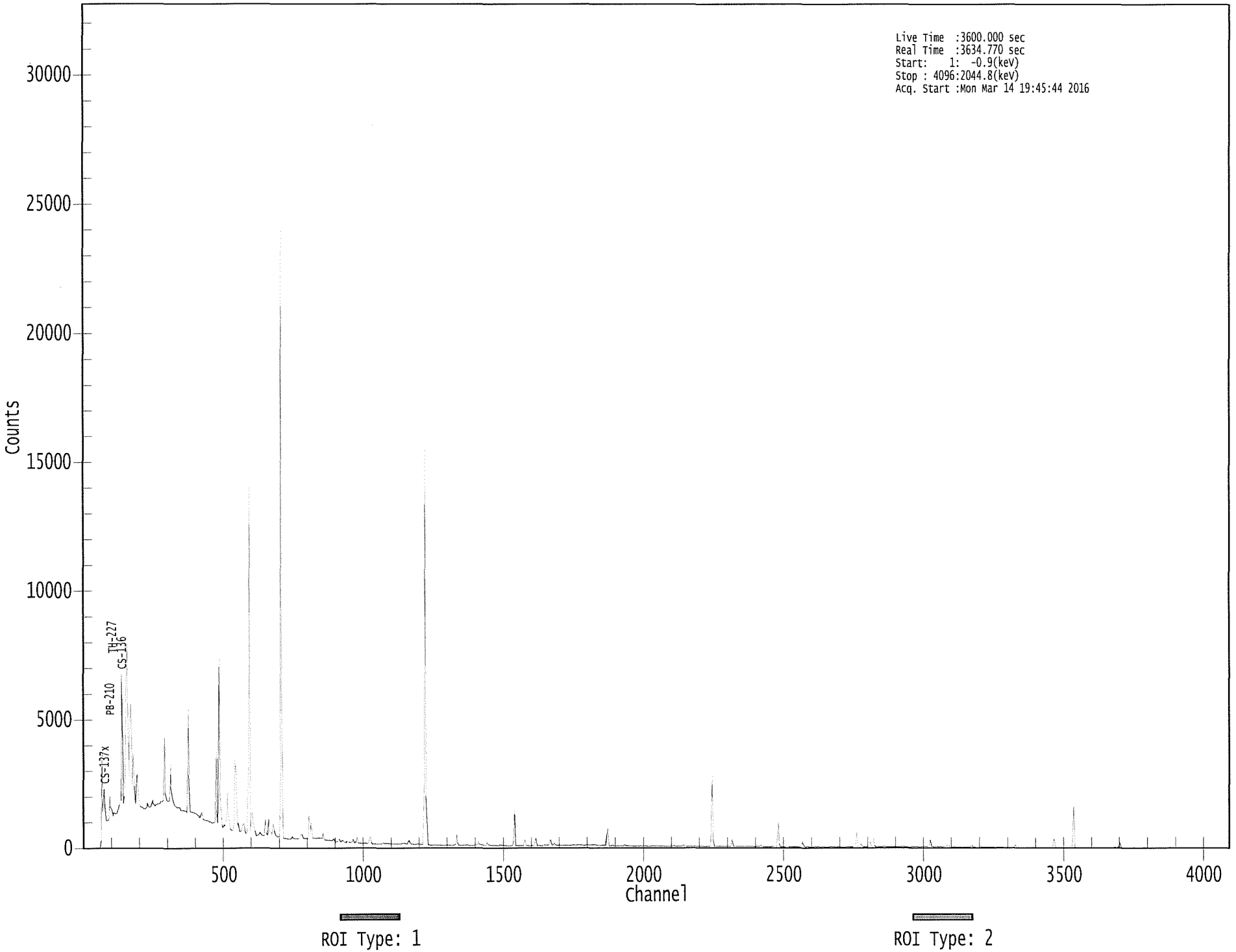
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	K-40	1460.83		10.67	1.06E+01	5.66E+01	5.66E+01
+	BI-214	609.31	*	44.80	1.54E+03	1.03E+01	1.03E+01
		1120.29	*	14.80	1.57E+03		3.25E+01
		1764.49	*	15.36	1.56E+03		2.45E+01
+	PB-214	295.21	*	18.50	1.44E+03	1.58E+01	1.96E+01
		351.92	*	35.80	1.70E+03		1.58E+01
+	RA-226	186.10	*	3.50	1.78E+03	1.27E+02	1.27E+02

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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Apex™

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 590214R2
Sample Description	: Tetra Tech TO# 160115-1
Sample Type	: Soil
Sample Size	: 2.196E+02 grams
Facility	: Default
Sample Taken On	: 1/19/2016 2:00:00PM
Acquisition Started	: 3/14/2016 8:48:43PM
Procedure	: Raised 300g can soil
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3606.3 seconds
Dead Time	: 0.18 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7121

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/grams)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.966	1.51E+02	4.38E+00	
PB-214	0.997	1.68E+02	8.13E+00	
RA-226	0.997	6.93E+02	4.22E+01	

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:16:27PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	46.51	1.35211E-02	158.13		
	2	50.23	1.09042E-01	19.13		
	3	63.33	5.05598E-01	7.28		
	4	67.77	4.37764E-01	7.15		
M	5	74.85	-1.40445E-01	- 11.1		
m	6	77.26	-4.78221E-01	- 8.0		
M	7	81.16	4.49761E-01	4.25		
m	8	83.90	1.14952E+00	2.12		
M	9	92.72	1.41901E+00	1.81		
m	10	94.64	4.33765E-01	3.91		
	11	122.42	7.98889E-02	26.31		
	12	144.11	5.44222E-01	4.41		
	13	154.31	3.13125E-01	8.29		
	15	210.85	9.05555E-03	134.33		
	16	236.14	2.97806E-01	7.14		
	17	242.12	1.98667E-01	8.28		
	18	256.36	3.99611E-01	4.80		
M	19	269.60	5.60910E-01	2.56		
m	20	271.38	4.28959E-01	3.00		
M	21	283.82	-2.37734E-01	- 18.6		
m	22	286.35	-2.28213E-02	- 177.9		
m	24	300.18	1.45596E-01	5.36		
m	25	302.78	9.38429E-02	7.20		
	26	324.10	3.80556E-02	28.76		
M	27	330.05	4.18902E-02	26.03		
m	28	334.44	7.15416E-03	30.31		
m	29	338.49	3.21223E-02	26.12		
M	31	402.00	2.02909E-01	4.35		
m	32	405.10	1.20015E-01	6.01		
	33	427.18	5.97222E-02	15.48		
	35	665.80	4.17778E-02	14.03		
	36	768.72	1.54222E-01	5.11		
	37	786.36	2.68056E-02	17.16		
	38	806.38	2.34167E-02	19.37		

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
39	832.43	4.00833E-02	14.59		
40	934.55	6.37917E-02	8.94		
41	1001.70	6.41944E-02	9.41		
43	1155.73	3.17778E-02	13.27		
44	1238.75	9.88333E-02	6.23		
45	1378.31	6.13194E-02	8.53		
46	1408.95	2.52778E-02	18.43		
47	1510.18	2.79167E-02	15.06		
48	1661.85	1.77639E-02	14.87		
49	1730.45	3.91944E-02	9.89	Sum	

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

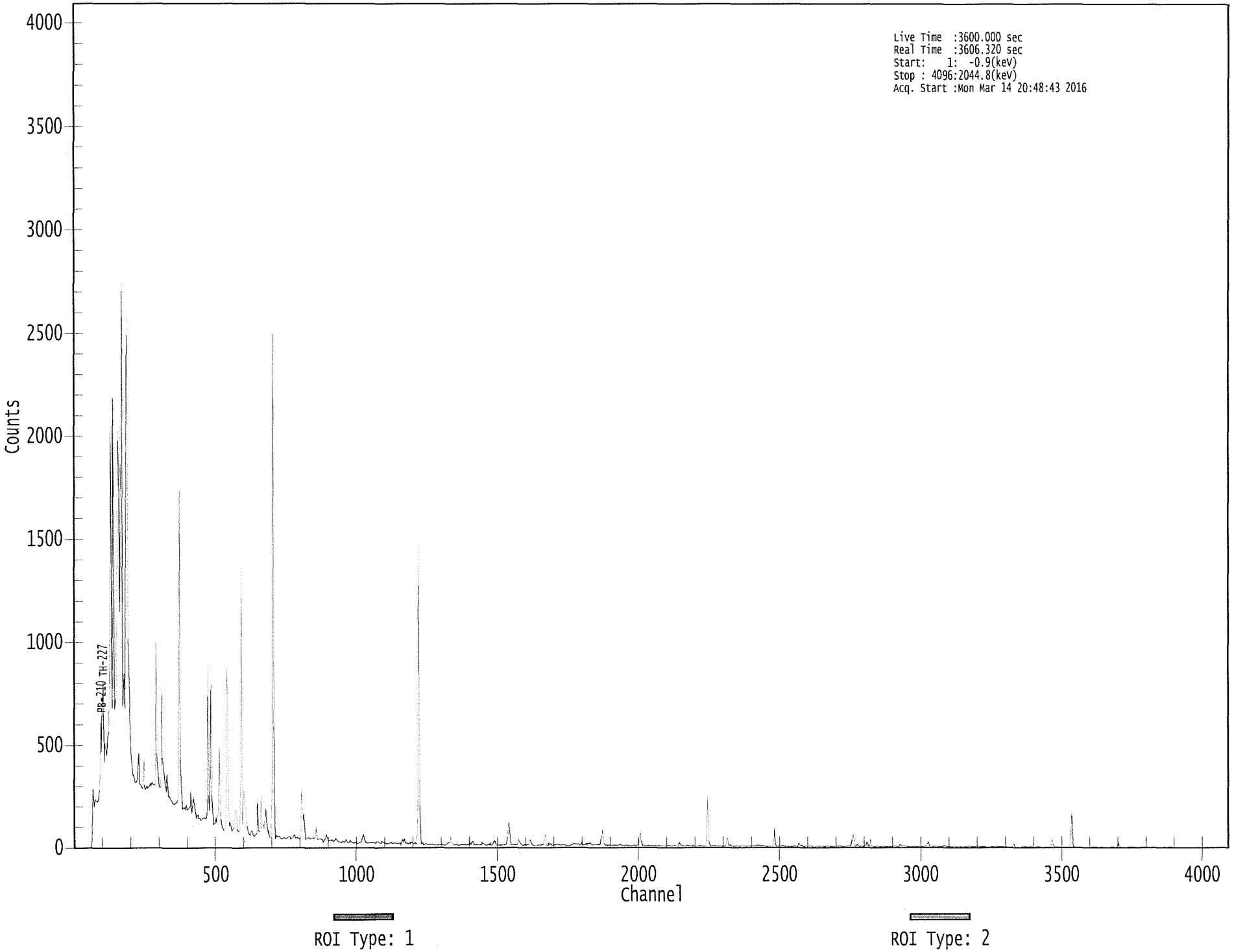
NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	K-40	1460.83		10.67	1.25E+01	2.28E+01	2.28E+01
+	BI-214	609.31	*	44.80	1.48E+02	3.14E+00	3.14E+00
		1120.29	*	14.80	1.49E+02		9.29E+00
		1764.49	*	15.36	1.60E+02		6.19E+00
+	PB-214	295.21	*	18.50	1.54E+02	5.06E+00	7.41E+00
		351.92	*	35.80	1.89E+02		5.06E+00
+	RA-226	186.10	*	3.50	6.93E+02	5.60E+01	5.60E+01

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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011406

Apex™

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 591000R2
Sample Description	: Tetra Tech TO# 160115-1
Sample Type	: Soil
Sample Size	: 2.522E+02 grams
Facility	: Default
Sample Taken On	: 1/19/2016 2:15:00PM
Acquisition Started	: 3/14/2016 10:01:15PM
Procedure	: Raised 300g can soil
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3622.8 seconds
Dead Time	: 0.63 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7117

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	*Nuclide Id Confidence*	*Wt mean Activity (pCi/grams)*	*Wt mean Activity Uncertainty*	*Comments*
BI-214	0.965	8.81E+02	2.11E+01	
PB-214	0.996	8.94E+02	4.21E+01	
RA-226	0.995	1.09E+03	6.66E+01	

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 4/4/2016 1:14:18PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	36.36	2.59472E-01	11.34		
	2	46.64	5.67313E-01	6.08		
	3	50.07	-1.81194E-01	- 14.0		
	4	67.76	2.24067E+00	2.35		
M	5	74.89	7.73601E-01	3.83		
m	6	77.17	1.53396E+00	3.76		
m	7	81.14	2.31535E-01	4.63		
m	8	83.90	7.00564E-01	3.84		
m	9	87.32	4.61672E-01	3.97		
m	10	89.93	9.31498E-02	7.53		
	11	94.73	-3.31875E-01	- 12.6		
	12	144.10	1.02912E+00	4.60		
	13	154.27	6.36889E-01	6.49		
	15	236.12	-7.87500E-01	- 5.1		
	16	242.14	2.18874E+00	1.98		
M	17	256.34	5.37834E-01	3.61		
m	18	259.04	1.97721E-01	7.59		
M	19	269.61	9.56191E-01	2.25		
m	20	271.37	8.02236E-01	2.52		
	21	283.75	-7.08699E+00	- 0.8		
m	23	300.19	2.99569E-01	4.90		
m	24	302.92	1.80646E-01	7.26		
	25	324.02	1.16389E-01	18.07		
	26	330.06	6.45139E-02	34.24		
	27	338.52	1.08819E-01	17.18		
	29	389.22	1.43056E-01	13.85		
M	30	401.99	3.43648E-01	4.11		
m	31	405.15	2.33796E-01	5.42		
	32	427.30	9.79445E-02	19.24		
	33	445.09	4.81111E-02	26.14		
	34	480.61	2.06944E-02	65.76		
	35	487.34	5.97222E-02	29.13		
	36	511.23	2.64007E-01	8.01		
	37	580.67	6.98889E-02	20.21		

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	39	665.81	2.72389E-01	5.15		
	40	703.39	7.86389E-02	15.04	Sum	
	41	720.18	6.05000E-02	16.52		
	42	768.78	8.48333E-01	2.43		
	43	786.26	1.57806E-01	9.81		
	44	806.60	1.88833E-01	6.88		
	45	821.40	1.35556E-02	53.36		
	46	832.42	3.44861E-02	34.64		
	47	839.47	7.12501E-03	161.65		
	48	934.59	4.46806E-01	3.10		
	49	964.64	4.32639E-02	23.13		
	51	1155.83	2.07778E-01	6.47		
	52	1208.29	5.06250E-02	17.10		
	53	1238.71	6.94903E-01	2.34		
	54	1281.66	1.51861E-01	7.12		
M	55	1378.31	4.48199E-01	2.69		
m	56	1385.93	7.88227E-02	7.54		
M	57	1402.11	1.42137E-01	5.32		
m	58	1408.73	2.52664E-01	3.79		
	59	1509.89	2.18403E-01	4.84		
M	60	1539.33	4.33419E-02	12.37		
m	61	1544.02	2.77706E-02	16.60		
	62	1583.70	6.32222E-02	10.73		
	63	1662.03	8.91111E-02	8.62		
	64	1730.29	2.48528E-01	3.78	Sum	
	66	1848.12	1.51167E-01	5.59		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\RA226+D.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	K-40	1460.83		10.67	7.27E+00	4.22E+01	4.22E+01
+	BI-214	609.31	*	44.80	8.61E+02	5.54E+00	5.54E+00
		1120.29	*	14.80	8.93E+02		2.14E+01
		1764.49	*	15.36	8.88E+02		1.38E+01

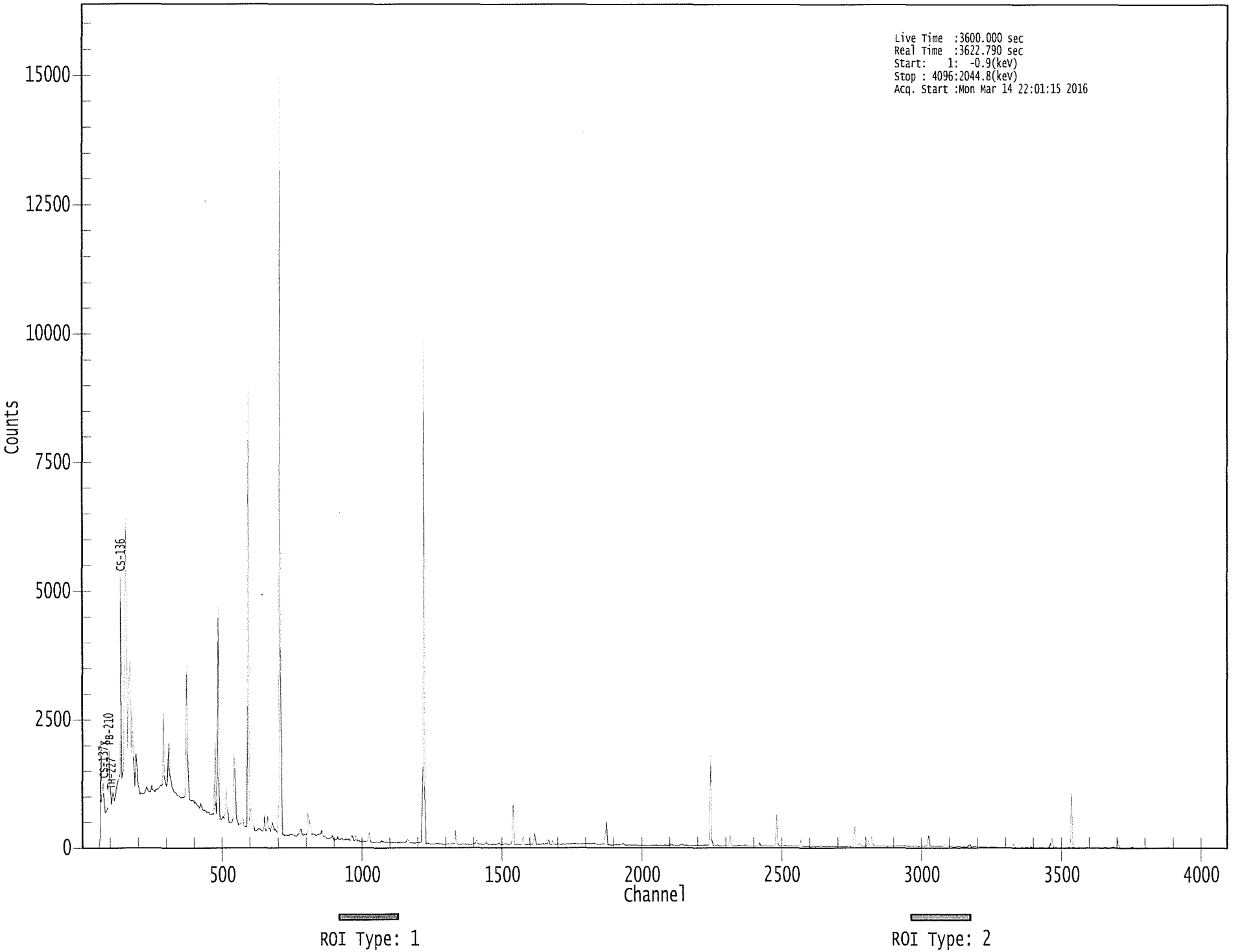
Analysis Report for 591000R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PB-214	295.21	*	18.50	8.74E+02	9.42E+00	1.37E+01
		351.92	*	35.80	9.18E+02		9.42E+00
+	RA-226	186.10	*	3.50	1.09E+03	1.06E+02	1.06E+02

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

0000007117.CNF



0114111

SOUTHWEST RESEARCH INSTITUTE
CLIENT: Tetra Tech
TASK ORDER#: 160115-1
SRR#: 56591, 56639, 56785, 56876
SDG: 588049
VTSR: 11.20.15, 12.01.15, 12.01.15, 01.15.16
PROJECT#: 21431.01.001

BULK SAMPLES Bi214, Pb214 & Ra226 GAMMA RAW DATA

Southwest Research Institute, Division 1, Radiochemistry

Gamma Spectroscopy Summary Sheet (1 sig)

011413

Client: Tetra Tech
Task Order: 160115-1
Prep Page: 03-008
Prep Date: 19-Jan-16

Project #: 21431.01.001
SRR: 56591, 56639, 56785, 56876
TPU sig factor: 1
Units: g

Notes: 4/25/16

Preparation Blank PBWA19JVR2 — Sample # 6728 — Sample Size 300.0 g — Date Analyzed 3/14/2016

Isotope	Aliquot (g)	% Solids	Final Mass (g)	Activity pCi/g	TPU pCi/g	MDA pCi/g	Qual		
^{210}Pb	300	100.0%	300	6.42E-01	2.61E-01	1.54E+00	U	*	<MDA
^{214}Bi	300	100.0%	300	-1.02E-02	2.77E-02	1.38E-01	U	*	<MDA
^{214}Pb	300	100.0%	300	5.65E-03	2.28E-02	1.22E-01	U	*	<MDA
^{234}Pa	300	100.0%	300	-2.38E-02	2.69E-02	1.41E-01	U	*	<MDA
^{234}Th	300	100.0%	300	7.41E-01	1.73E-01	7.11E-01	U	*	
^{211}Bi	300	100.0%	300	-3.13E-02	6.30E-02	3.28E-01	U	*	<MDA
^{211}Pb	300	100.0%	300	-7.71E-02	2.12E-01	1.09E+00	U	*	<MDA
^{219}Rn	300	100.0%	300	-1.16E-02	6.09E-02	3.20E-01	U	*	<MDA
^{223}Ra	300	100.0%	300	-3.52E-02	4.78E-02	2.46E-01	U	*	<MDA
^{227}Th	300	100.0%	300	8.45E-02	5.16E-02	2.91E-01	U	*	<MDA
^{231}Pa	300	100.0%	300	-4.45E-01	2.95E-01	1.47E+00	U	*	<MDA
^{231}Th	300	100.0%	300	2.98E-02	7.73E-02	4.49E-01	U	*	<MDA
^{208}Tl	300	100.0%	300	1.04E-02	1.16E-02	6.31E-02	U	*	<MDA
^{212}Bi	300	100.0%	300	4.94E-02	1.54E-01	8.25E-01	U	*	<MDA
^{212}Pb	300	100.0%	300	4.73E-03	1.49E-02	8.16E-02	U	*	<MDA
^{224}Ra	300	100.0%	300	2.96E-01	1.66E-01	9.44E-01	U	*	<MDA
^{228}Ac	300	100.0%	300	5.69E-02	5.05E-02	2.73E-01	U	*	<MDA

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
MDA calculated from the lowest MDA of all isotopic analytical lines.
U - indicates activity is <2 times TPU, < MDA, and/or was "not identified"

Laboratory Control Sample LCSWA19JVR2 — Sample # 6860 — Sample Size 295.5 g — Date Analyzed 3/14/2016

Isotope	Aliquot (g)	% Solids	Final Mass (g)	Activity pCi/g	TPU pCi/g	MDA pCi/g	Qual		TV pCi/g	%Rec
^{210}Pb	296	100.0%	296	3.27E+00	1.10E+00	5.98E+00	U	<MDA		
^{214}Bi	296	100.0%	296	3.65E+00	1.85E-01	2.48E-01			3.41E+00	106.9%
^{214}Pb	296	100.0%	296	3.42E+00	1.62E-01	3.35E-01			3.64E+00	94.0%
^{234}Pa	296	100.0%	296	8.92E-02	1.05E-01	5.46E-01	U	<MDA		
^{234}Th	296	100.0%	296	5.16E-01	5.03E-01	2.03E+00	U	<MDA	2.41E+00	NA
^{211}Bi	296	100.0%	296	4.89E-01	4.35E-01	9.29E-01	U	<MDA		
^{211}Pb	296	100.0%	296	7.87E-01	8.50E-01	4.24E+00	U	<MDA		
^{219}Rn	296	100.0%	296	3.38E-01	2.29E-01	1.18E+00	U	<MDA		
^{223}Ra	296	100.0%	296	-1.18E-01	1.77E-01	8.89E-01	U	<MDA		
^{227}Th	296	100.0%	296	-1.99E+00	2.14E-01	1.17E+00	U	<MDA		
^{231}Pa	296	100.0%	296	-1.58E+01	1.26E+00	5.22E+00	U	<MDA		
^{231}Th	296	100.0%	296	-1.15E+00	1.33E-01	1.55E+00	U	<MDA		
^{208}Tl	296	100.0%	296	4.21E-01	4.68E-02	1.65E-01				
^{212}Bi	296	100.0%	296	8.66E-01	5.44E-01	2.73E+00	U	<MDA	1.54E+00	NA
^{212}Pb	296	100.0%	296	1.33E+00	6.36E-02	1.99E-01			1.22E+00	108.8%
^{224}Ra	296	100.0%	296	7.55E-01	4.77E-01	2.28E+00	U	<MDA		
^{228}Ac	296	100.0%	296	1.17E+00	1.59E-01	5.56E-01			1.45E+00	80.4%

MDA calculated from the lowest MDA of all isotopic analytical lines.
U - indicates activity is <2 times TPU, < MDA, and/or was "not identified"

LCS Source: 115RadSol2

4/25/16

Southwest Research Institute, Division 1, Radiochemistry

Gamma Spectroscopy Summary Sheet (1 sig)

011414

Client: Tetra Tech
Task Order: 160115-1
Prep Page: 03-008
Prep Date: 19-Jan-16

Project #: 21431.01.001
SRR: 56591, 56639, 56785, 56876
TPU sig factor: 1
Units: g

Notes: _____

Sample ID 588049R2 | Sample # 6933 | Sample Size 305.886 g | Date Analyzed 3/14/2016

Isotope	Aliquot (g)	% Solids	Final Mass (g)	Activity pCi/g	TPU pCi/g	MDA pCi/g	Qual		
^{210}Pb	306	81.06%	306	2.20E+02	3.51E+01	1.23E+02			
^{234}Pa	306	81.06%	306	-5.94E+00	7.21E+00	3.68E+01	U	*	<MDA
^{234}Th	306	81.06%	306	-4.15E+02	4.70E+01	9.09E+01	U	*	<MDA
^{211}Bi	306	81.06%	306	2.69E+03	6.97E+02	5.71E+01			
^{211}Pb	306	81.06%	306	5.97E+02	4.76E+01	1.41E+02			
^{219}Rn	306	81.06%	306	7.50E+02	4.68E+01	4.84E+01			
^{223}Ra	306	81.06%	306	4.82E+02	2.05E+01	3.80E+01			
^{227}Th	306	81.06%	306	2.39E+02	1.90E+01	4.70E+01			
^{231}Pa	306	81.06%	306	6.85E+02	4.87E+01	2.13E+02			
^{231}Th	306	81.06%	306	4.20E+02	3.22E+01	6.65E+01	U	*	
^{208}Tl	306	81.06%	306	-2.12E+00	5.89E-01	8.32E+00	U	*	<MDA
^{212}Bi	306	81.06%	306	-8.26E+01	1.71E+01	9.72E+01	U	*	<MDA
^{212}Pb	306	81.06%	306	6.94E+01	5.82E+00	2.14E+01	U	*	
^{224}Ra	306	81.06%	306	3.91E+03	2.40E+02	1.92E+02	U	*	
^{228}Ac	306	81.06%	306	1.84E+01	7.23E+00	3.25E+01	U	*	<MDA

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
MDA calculated from the lowest MDA of all isotopic analytical lines.
U - indicates activity is <2 times TPU, < MDA, and/or was "not identified"

Sample ID 588556R2 | Sample # 6934 | Sample Size 208.406 g | Date Analyzed 3/14/2016

Isotope	Aliquot (g)	% Solids	Final Mass (g)	Activity pCi/g	TPU pCi/g	MDA pCi/g	Qual		
^{210}Pb	208	78.76%	208	3.14E+02	4.02E+01	1.07E+02			
^{234}Pa	208	78.76%	208	-1.72E+01	7.73E+00	3.83E+01	U	*	<MDA
^{234}Th	208	78.76%	208	-5.66E+02	6.33E+01	1.05E+02	U	*	<MDA
^{211}Bi	208	78.76%	208	2.67E+03	5.25E+02	5.66E+01			
^{211}Pb	208	78.76%	208	5.61E+02	3.46E+01	1.44E+02			
^{219}Rn	208	78.76%	208	6.53E+02	3.24E+01	4.77E+01			
^{223}Ra	208	78.76%	208	6.38E+02	2.93E+01	3.76E+01			
^{227}Th	208	78.76%	208	5.62E+02	3.31E+01	4.15E+01			
^{231}Pa	208	78.76%	208	6.86E+02	4.92E+01	2.13E+02			
^{231}Th	208	78.76%	208	4.99E+02	3.91E+01	8.04E+01	U	*	
^{208}Tl	208	78.76%	208	-1.68E+00	1.15E+00	8.34E+00	U	*	<MDA
^{212}Bi	208	78.76%	208	-3.47E+01	1.70E+01	9.95E+01	U	*	<MDA
^{212}Pb	208	78.76%	208	7.62E+01	6.24E+00	2.26E+01	U	*	
^{224}Ra	208	78.76%	208	2.85E+03	1.79E+02	2.00E+02	U	*	
^{228}Ac	208	78.76%	208	2.00E+01	7.32E+00	3.31E+01	U	*	<MDA

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
MDA calculated from the lowest MDA of all isotopic analytical lines.
U - indicates activity is <2 times TPU, < MDA, and/or was "not identified"

Southwest Research Institute, Division 1, Radiochemistry

011415

Gamma Spectroscopy Summary Sheet (1 sig)

Client: Tetra Tech
Task Order: 160115-1
Prep Page: 03-008
Prep Date: 19-Jan-16

Project #: 21431.01.001
SRR: 56591, 56639, 56785, 56876
TPU sig factor: 1
Units: g

Notes: _____

Sample ID 588556DR2 | Sample # 6935 | Sample Size 208.406 g | Date Analyzed 3/14/2016

Isotope	Aliquot (g)	% Solids	Final Mass (g)	Activity pCi/g	TPU pCi/g	MDA pCi/g	Qual		RPDs	DER	
^{210}Pb	208	78.76%	208	2.28E+02	3.88E+01	1.42E+02			31.6	1.5	Pass
^{234}Pa	208	78.76%	208	3.26E+00	7.51E+00	3.86E+01	U	*	293.4	1.9	Pass
^{234}Th	208	78.76%	208	-7.56E+02	8.45E+01	1.05E+02	U	*	28.8	1.8	Pass
^{211}Bi	208	78.76%	208	1.86E+03	5.31E+02	6.30E+01			36.0	1.1	Pass
^{211}Pb	208	78.76%	208	5.56E+02	3.47E+01	1.44E+02			0.8	0.1	Pass
^{219}Rn	208	78.76%	208	6.59E+02	3.27E+01	4.82E+01			1.0	0.1	Pass
^{223}Ra	208	78.76%	208	4.94E+02	2.28E+01	3.78E+01			25.4	3.9	Fail
^{227}Th	208	78.76%	208	5.72E+02	3.24E+01	5.19E+01			1.7	0.2	Pass
^{231}Pa	208	78.76%	208	5.17E+02	4.28E+01	2.17E+02			28.1	2.6	Pass
^{231}Th	208	78.76%	208	5.31E+02	4.11E+01	8.02E+01	U	*	6.3	0.6	Pass
^{208}Tl	208	78.76%	208	-7.07E-01	4.95E-01	8.54E+00	U	*	81.5	0.8	Pass
^{212}Bi	208	78.76%	208	-7.59E+01	1.74E+01	9.92E+01	U	*	74.5	1.7	Pass
^{212}Pb	208	78.76%	208	-8.51E+01	5.26E+00	2.26E+01	U	*	3637.3	19.8	Fail
^{224}Ra	208	78.76%	208	2.93E+03	1.83E+02	2.00E+02	U	*	2.6	0.3	Pass
^{228}Ac	208	78.76%	208	1.29E+01	7.31E+00	3.32E+01	U	*	43.2	0.7	Pass

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
MDA calculated from the lowest MDA of all isotopic analytical lines.
U - indicates activity is <2 times TPU, < MDA, and/or was "not identified"
Duplicate Evaluation = (Sample-Duplicate) / sqrt ((TPUsample^2) + (TPUdup^2)) # 3

Sample ID 590212R2 | Sample # 6936 | Sample Size 229.439 g | Date Analyzed 3/14/2016

Isotope	Aliquot (g)	% Solids	Final Mass (g)	Activity pCi/g	TPU pCi/g	MDA pCi/g	Qual		
^{210}Pb	229	85.05%	229	2.19E+02	4.07E+01	1.56E+02			
^{234}Pa	229	85.05%	229	1.96E+00	8.92E+00	4.58E+01	U	*	<MDA
^{234}Th	229	85.05%	229	-5.92E+02	6.64E+01	1.15E+02	U	*	<MDA
^{211}Bi	229	85.05%	229	1.20E+04	8.98E+02	7.99E+01			
^{211}Pb	229	85.05%	229	8.52E+02	4.93E+01	1.80E+02			
^{219}Rn	229	85.05%	229	1.13E+03	5.50E+01	5.94E+01			
^{223}Ra	229	85.05%	229	5.58E+02	2.73E+01	4.68E+01			
^{227}Th	229	85.05%	229	6.35E+01	8.47E+00	4.76E+01			
^{231}Pa	229	85.05%	229	9.42E+02	4.19E+01	2.63E+02			
^{231}Th	229	85.05%	229	3.84E+02	2.11E+01	8.51E+01			
^{208}Tl	229	85.05%	229	-7.73E-01	6.22E-01	1.06E+01	U	*	<MDA
^{212}Bi	229	85.05%	229	-3.54E+01	1.75E+01	1.23E+02	U	*	<MDA
^{212}Pb	229	85.05%	229	1.11E+02	8.44E+00	2.74E+01	U	*	
^{224}Ra	229	85.05%	229	4.31E+03	3.35E+02	2.43E+02			
^{228}Ac	229	85.05%	229	2.47E+01	9.20E+00	4.13E+01	U	*	<MDA

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
MDA calculated from the lowest MDA of all isotopic analytical lines.
U - indicates activity is <2 times TPU, < MDA, and/or was "not identified"

Southwest Research Institute, Division 1, Radiochemistry

011416

Gamma Spectroscopy Summary Sheet (1 sig)

Client: Tetra Tech
Task Order: 160115-1
Prep Page: 03-008
Prep Date: 19-Jan-16

Project #: 21431.01.001
SRR: 56591, 56639, 56785, 56876
TPU sig factor: 1
Units: g

Notes: _____

Sample ID 590213R2 | Sample # 6937 | Sample Size 222.265 g | Date Analyzed 3/14/2016

Isotope	Aliquot (g)	% Solids	Final Mass (g)	Activity pCi/g	TPU pCi/g	MDA pCi/g	Qual		
^{210}Pb	222	86.33%	222	2.03E+02	3.24E+01	1.13E+02			
^{234}Pa	222	86.33%	222	-5.57E-01	6.04E+00	3.10E+01	U	*	<MDA
^{234}Th	222	86.33%	222	-4.05E+02	4.58E+01	8.36E+01	U	*	<MDA
^{211}Bi	222	86.33%	222	1.43E+03	3.89E+02	5.08E+01			
^{211}Pb	222	86.33%	222	4.05E+02	2.50E+01	1.15E+02			
^{219}Rn	222	86.33%	222	4.69E+02	2.35E+01	4.01E+01			
^{223}Ra	222	86.33%	222	3.13E+02	1.46E+01	2.99E+01			
^{227}Th	222	86.33%	222	1.31E+02	1.18E+01	4.16E+01			
^{231}Pa	222	86.33%	222	3.94E+02	3.12E+01	1.65E+02			
^{231}Th	222	86.33%	222	2.89E+02	1.59E+01	6.37E+01			
^{208}Tl	222	86.33%	222	8.84E+00	1.44E+00	6.79E+00	U	*	
^{212}Bi	222	86.33%	222	-7.83E+01	1.78E+01	8.03E+01	U	*	<MDA
^{212}Pb	222	86.33%	222	4.76E+01	4.43E+00	1.79E+01	U	*	
^{224}Ra	222	86.33%	222	2.21E+03	1.39E+02	1.58E+02	U	*	
^{228}Ac	222	86.33%	222	1.58E+01	5.89E+00	2.67E+01	U	*	<MDA

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
MDA calculated from the lowest MDA of all isotopic analytical lines.
U - indicates activity is <2 times TPU, < MDA, and/or was "not identified"

Sample ID 590214R2 | Sample # 6938 | Sample Size 219.631 g | Date Analyzed 3/14/2016

Isotope	Aliquot (g)	% Solids	Final Mass (g)	Activity pCi/g	TPU pCi/g	MDA pCi/g	Qual		
^{210}Pb	220	81.35%	220	8.51E+00	1.35E+01	6.29E+01	U		<MDA
^{234}Pa	220	81.35%	220	2.56E-01	2.67E+00	1.38E+01	U	*	<MDA
^{234}Th	220	81.35%	220	3.06E+02	1.63E+01	4.50E+01			
^{211}Bi	220	81.35%	220	3.22E+02	4.71E+01	1.73E+01			
^{211}Pb	220	81.35%	220	1.17E+02	9.30E+00	4.12E+01			
^{219}Rn	220	81.35%	220	1.33E+02	6.92E+00	1.44E+01			
^{223}Ra	220	81.35%	220	8.96E+01	5.36E+00	1.15E+01			
^{227}Th	220	81.35%	220	5.40E+01	4.52E+00	2.11E+01			
^{231}Pa	220	81.35%	220	1.24E+02	1.31E+01	6.48E+01			
^{231}Th	220	81.35%	220	4.06E+02	2.06E+01	4.08E+01			
^{208}Tl	220	81.35%	220	2.27E+00	5.37E-01	2.72E+00	U	*	<MDA
^{212}Bi	220	81.35%	220	-6.60E+00	6.28E+00	2.97E+01	U	*	<MDA
^{212}Pb	220	81.35%	220	2.88E+01	2.24E+00	7.99E+00	U	*	
^{224}Ra	220	81.35%	220	1.51E+02	1.55E+01	5.26E+01	U	*	
^{228}Ac	220	81.35%	220	4.62E+00	2.06E+00	9.90E+00	U	*	<MDA

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
MDA calculated from the lowest MDA of all isotopic analytical lines.
U - indicates activity is <2 times TPU, < MDA, and/or was "not identified"

Southwest Research Institute, Division 1, Radiochemistry

011417

Gamma Spectroscopy Summary Sheet (1 sig)

Client: Tetra Tech
Task Order: 160115-1
Prep Page: 03-008
Prep Date: 19-Jan-16

Project #: 21431.01.001
SRR: 56591, 56639, 56785, 56876
TPU sig factor: 1
Units: g

Notes: _____

Sample ID 591000R2 | Sample # 6939 | Sample Size 252.203 g | Date Analyzed 3/14/2016

Isotope	Aliquot (g)	% Solids	Final Mass (g)	Activity pCi/g	TPU pCi/g	MDA pCi/g	Qual		
^{210}Pb	252	73.37%	252	3.44E+02	4.09E+01	9.11E+01			
^{234}Pa	252	73.37%	252	4.13E+00	5.13E+00	2.63E+01	U	*	<MDA
^{234}Th	252	73.37%	252	-2.91E+02	3.38E+01	7.10E+01	U	*	<MDA
^{211}Bi	252	73.37%	252	8.60E+02	2.52E+02	3.56E+01			
^{211}Pb	252	73.37%	252	1.91E+02	1.69E+01	9.85E+01			
^{219}Rn	252	73.37%	252	2.31E+02	1.23E+01	3.33E+01			
^{223}Ra	252	73.37%	252	1.92E+02	9.60E+00	2.59E+01			
^{227}Th	252	73.37%	252	1.77E+02	1.32E+01	3.75E+01			
^{231}Pa	252	73.37%	252	1.87E+02	2.08E+01	1.45E+02			
^{231}Th	252	73.37%	252	2.13E+02	1.73E+01	5.64E+01	U	*	
^{208}Tl	252	73.37%	252	-8.10E-01	4.60E-01	5.67E+00	U	*	<MDA
^{212}Bi	252	73.37%	252	-6.86E+01	1.48E+01	6.62E+01	U	*	<MDA
^{212}Pb	252	73.37%	252	1.49E+01	2.92E+00	1.44E+01	U	*	
^{224}Ra	252	73.37%	252	1.61E+03	1.02E+02	1.22E+02	U	*	
^{228}Ac	252	73.37%	252	6.83E+00	4.88E+00	2.23E+01	U	*	<MDA

* - Isotope considered "not-identified". Activity and TPU are taken from the isotopic Key-line.
MDA calculated from the lowest MDA of all isotopic analytical lines.
U - indicates activity is <2 times TPU, < MDA, and/or was "not identified"

Apex™

Analysis Report for PBWA19JVR2

Tetra Tech, TO# 160115-1

GAMMA SPECTRUM ANALYSIS

Sample Identification	: PBWA19JVR2
Sample Description	: Tetra Tech, TO# 160115-1
Sample Type	: Soil
Sample Size	: 3.000E+02 grams
Facility	: Default
Sample Taken On	: 1/19/2016 12:00:00PM
Acquisition Started	: 3/14/2016 2:03:37PM
Procedure	: Raised 300g can soil
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3600.6 seconds
Dead Time	: 0.02 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7043

Analysis Report for PBWA19JVR2

Tetra Tech, TO# 160115-1

ENERGY CALIBRATION REPORT

Detector Name : DET01

ENERGY CALIBRATION COEFFICIENTS

Energy Calibrate Performed on : 11/30/2015 7:51:04PM
by : Administrator
Energy Calibrate Type : POLY

Energy (keV) = -1.445 + 0.500*ch + -1.06E-07*ch^2 + 0.00E+00*ch^3

SHAPE CALIBRATION COEFFICIENTS

Shape Calibrate Performed on : 11/30/2015 7:51:04PM
by : Administrator

FWHM = 0.610 + 3.62E-02 *E^1/2

LOW TAIL = 0.00E+00 + 0.00E+00*E

ENERGY CALIBRATION RESULTS TABLE

Centroid Channel	*Centroid error*	*Energy (keV)*
121.97	0.13	59.54
1326.58	0.01	661.66
2669.40	0.03	1332.50

SHAPE CALIBRATION RESULTS TABLE

Energy (keV)	*FWHM channels*	*FWHM error*	*TAIL channels*	*TAIL error*
59.54	2.12	0.24	0.00	0.00
661.66	3.08	0.02	0.00	0.00
1332.50	3.90	0.06	0.00	0.00

EFFICIENCY CALIBRATION REPORT

Detector Name : DET01
Geometry Description : Raised 300gm Can Soil
Efficiency Calibration Performed on : 12/20/2005 11:10:05AM
by : Administrator
Efficiency Type Used : EMPIRICAL

Analysis Report for PBWA19JVR2

Tetra Tech, TO# 160115-1

Efficiency Triplets

Energy	*% Efficiency*	*Error*	*Computed*	*Error*	*% Difference*
59.50	6.77E-01	2.04E-02			
88.00	6.93E-01	2.10E-02			
122.10	7.30E-01	2.28E-02			
165.90	6.33E-01	3.05E-02			
391.70	3.38E-01	1.74E-02			
661.70	2.30E-01	6.91E-03			
898.00	1.91E-01	8.56E-03			
1173.20	1.46E-01	4.40E-03			
1332.50	1.33E-01	3.99E-03			
1836.00	1.03E-01	3.36E-03			

DUAL Efficiency Calibration Equation

Single Equation Terms

Offset : -3.20E+01
Slope : 1.70E+01
Quadratic : -3.77E+00
Cubic : 3.53E-01
4th Order : -1.23E-02
5th Order : 0.00E+00
6th Order : 0.00E+00
7th Order : 0.00E+00
8th Order : 0.00E+00
9th Order : 0.00E+00

EMPIRICAL Efficiency Calibration Equation

Empirical Equation Terms

Scaling : 9.48E+02
Offset : -6.35E+00
Slope : 8.02E-01
Quadratic : 2.35E-02
Cubic : -1.58E-02
4th Order : -1.23E-02
5th Order : 0.00E+00

LINEAR Efficiency Calibration Equation

Analysis Report for PBWA19JVR2

Tetra Tech, TO# 160115-1

Linear Equation Terms

Offset	-1.79E-04
Slope	-2.75E+00
Quadratic	1.74E+02
Cubic	-1.42E+04
4th Order	2.49E+05
5th Order	6.29E+06
6th Order	0.00E+00
7th Order	0.00E+00
8th Order	0.00E+00
9th Order	0.00E+00

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

PEAK LOCATE REPORT

Peak Locate Performed on : 3/30/2016 1:41:27PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 4.30

No peak locate results available for reporting purposes.

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 3/30/2016 1:41:27PM
Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

No peak analysis results available for reporting purposes.

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 3/30/2016 1:41:27PM
Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Analysis Report for PBWA19JVR2

Tetra Tech, TO# 160115-1

No peak analysis results available for reporting purposes.

PEAK WITH NID REPORT

Peak Analysis Performed on : 3/30/2016 1:41:27PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB
Peak Match Tolerance : 1.000 keV

No peak analysis results available for reporting purposes.

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 3/30/2016 1:41:27PM

No peak analysis results available for reporting purposes.

No peak analysis results available to perform background subtract on.

No peak analysis results available for correction.

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

IDENTIFIED NUCLIDES

Nuclide Name	*Id Confidence*	*Energy (keV)*	*Yield(%)*	*Activity (pCi/grams)*	*Activity Uncertainty*
		*		?	
		*		?	

Analysis Report for PBWA19JVR2

Tetra Tech, TO# 160115-1

* = Energy line found in the spectrum.
- = Manually added nuclide.
? = Manually edited nuclide.
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 1.000 sigma

No peak search results available for nuclide analysis.

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty

* = Energy line found in the spectrum.
- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 1.000 sigma

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

No peak search results available for nuclide analysis.

Analysis Report for PBWA19JVR2

Tetra Tech, TO# 160115-1

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BE-7	477.60	10.42	1.21E+00	6.81E+00	6.81E+00
	NA-22	1274.53	99.94	1.18E-01	5.39E-01	5.39E-01
@	NA-24	1368.63	100.00	1.00E+26	1.00E+26	1.00E+26
> @		2754.03	99.94	0.00E+00		0.00E+00
	K-40	1460.83	10.67	1.66E+00	5.40E+00	5.40E+00
@	AR-41	1293.59	99.10	1.00E+26	1.00E+26	1.00E+26
	CR-51	320.08	9.86	1.53E+00	1.23E+01	1.23E+01
	MN-54	834.85	99.98	2.20E-03	4.53E-01	4.53E-01
	CO-56	846.77	99.93	1.36E-01	7.13E-01	7.13E-01
		977.37	1.44	1.26E+01		5.31E+01
		1037.84	13.99	-2.17E+00		4.49E+00
		1175.10	2.28	1.23E+00		3.04E+01
		1238.28	67.56	-4.31E-02		1.19E+00
		1360.21	4.33	-4.71E+00		1.39E+01
		1771.35	15.69	-1.73E+00		4.69E+00
		2015.18	3.08	0.00E+00		4.14E+00
		2034.76	7.89	0.00E+00		1.63E+00
@	MN-56	846.75	98.87	1.00E+26	1.00E+26	1.00E+26
@		1810.72	27.19	1.00E+26		1.00E+26
> @		2113.05	14.34	0.00E+00		0.00E+00
	CO-57	122.06	85.60	-5.49E-02	2.68E-01	2.68E-01
		136.47	10.68	5.20E-02		2.44E+00
		692.41	0.16	7.19E+01		2.88E+02
	CO-58	810.78	99.45	-2.45E-01	6.03E-01	6.03E-01
		863.96	0.68	3.01E+00		1.01E+02
		1674.73	0.52	-1.14E+02		1.32E+02
	FE-59	142.65	1.02	8.29E-01	1.20E+00	5.30E+01
		192.35	3.08	-8.21E+00		1.71E+01
		1099.25	56.50	-9.29E-01		1.20E+00
		1291.60	43.20	4.52E-01		2.59E+00
	CO-60	1173.24	99.90	-4.78E-02	4.32E-01	4.32E-01
		1332.50	99.98	5.76E-02		5.13E-01
@	CU-64	1345.77	0.47	0.00E+00	1.00E+26	1.00E+26
	ZN-65	1115.55	50.60	9.45E-03	1.20E+00	1.20E+00
	SE-75	66.05	1.12	1.74E+00	5.38E-01	2.57E+01
		96.73	3.42	-5.04E+00		6.78E+00
		121.12	17.14	-2.44E-02		1.66E+00
		136.00	58.27	2.01E-02		5.38E-01
		198.61	1.47	4.89E+00		2.39E+01
		264.66	58.50	1.89E-01		6.73E-01
		279.54	24.79	-3.21E-01		1.35E+00
		303.93	1.31	-7.68E-01		2.74E+01
		400.66	11.37	-1.48E-01		3.60E+00
	RB-83	520.39	44.70	-1.69E+00	1.15E+00	1.15E+00
		529.59	29.30	-5.97E-02		1.92E+00
		552.59	15.96	-2.45E-01		3.07E+00
@	BR-84	881.60	42.00	1.00E+26	1.00E+26	1.00E+26

Analysis Report for PBWA19JVR2

Tetra Tech, TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
@ BR-84	1897.60	14.90	1.00E+26	1.00E+26	1.00E+26
KR-85	514.01	0.43	1.27E+02	1.38E+02	1.38E+02
@ KR-85M	151.20	75.00	1.00E+26	1.00E+26	1.00E+26
@	304.87	14.00	1.00E+26		1.00E+26
SR-85	514.01	95.70	1.02E+00	1.11E+00	1.11E+00
@ SR-85m	151.19	12.90	1.00E+26	1.00E+26	1.00E+26
@	231.86	84.40	1.00E+26		1.00E+26
RB-86	1077.00	8.64	6.01E+00	4.42E+01	4.42E+01
@ KR-87	402.59	49.60	1.00E+26	1.00E+26	1.00E+26
@	673.83	1.89	1.00E+26		1.00E+26
@	845.44	7.30	1.00E+26		1.00E+26
@	1175.40	1.11	1.00E+26		1.00E+26
@	1740.52	2.04	1.00E+26		1.00E+26
@ KR-88	165.98	3.10	1.00E+26	1.00E+26	1.00E+26
@	196.30	26.00	1.00E+26		1.00E+26
@	362.23	2.25	1.00E+26		1.00E+26
@	834.83	13.00	1.00E+26		1.00E+26
@	985.78	1.52	1.00E+26		1.00E+26
@	1141.33	1.28	1.00E+26		1.00E+26
@	1179.51	1.00	1.00E+26		1.00E+26
@	1250.67	1.12	1.00E+26		1.00E+26
@	1369.50	1.48	1.00E+26		1.00E+26
@	1518.39	2.15	1.00E+26		1.00E+26
@	1529.77	10.90	1.00E+26		1.00E+26
@ RB-88	898.03	14.04	1.00E+26	1.00E+26	1.00E+26
@	1836.01	21.40	1.00E+26		1.00E+26
Y-88	898.04	93.68	-1.53E-01	6.16E-01	6.49E-01
	1836.06	99.24	-2.30E-01		6.16E-01
NB-94x	702.62	97.90	4.73E-02	3.94E-01	4.14E-01
	871.09	99.90	-9.41E-02		3.94E-01
NB-95	765.81	99.81	1.88E-01	1.22E+00	1.22E+00
NB-95m	204.12	2.33	-6.88E+04	3.95E+04	3.99E+05
	235.69	24.80	-2.04E+03		3.95E+04
ZR-95	724.20	44.17	3.95E-01	1.27E+00	1.94E+00
	756.73	54.46	8.79E-02		1.27E+00
NB-96	460.04	26.62	4.23E+15	4.41E+16	1.34E+17
	568.87	57.97	9.95E+15		7.41E+16
	778.22	96.45	-5.78E+15		4.41E+16
	849.93	20.40	-6.16E+15		2.18E+17
	1200.23	19.96	3.17E+16		2.52E+17
MO-99	140.51	4.52	-2.13E+05	3.19E+06	5.43E+06
	181.06	6.08	5.51E+05		4.41E+06
	366.42	1.20	-3.51E+06		2.53E+07
	739.50	12.13	-3.12E+05		3.19E+06
	777.92	4.28	-1.27E+06		9.65E+06
@ TC-99M	140.51	89.06	1.00E+26	1.00E+26	1.00E+26
RU-103	443.80	3.27	2.97E+00	1.05E+00	2.71E+01
	497.08	90.90	2.11E-02		1.05E+00
	610.33	5.75	9.01E+00		2.23E+01
RHRU-106	621.93	9.93	-2.08E+00	3.25E+00	3.25E+00
	1050.41	1.56	7.64E+00		3.83E+01
AG-108M	433.94	90.50	-8.30E-02	3.36E-01	3.36E-01

Analysis Report for PBWA19JVR2

Tetra Tech, TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
AG-108M	614.28	89.90	1.52E-01	3.36E-01	5.14E-01
	722.94	90.90	1.05E-01		5.11E-01
CD-109	88.03	3.61	-3.99E+00	5.47E+00	5.47E+00
AG-110M	116.48	1.36	0.00E+00	4.39E-01	1.85E+01
	446.81	3.72	1.65E+00		1.08E+01
	620.36	2.79	-6.07E+00		1.35E+01
	657.76	94.00	7.69E-02		4.39E-01
	677.62	10.28	3.79E-01		4.29E+00
	687.02	6.39	-3.74E-01		6.55E+00
	706.68	16.32	1.09E-01		3.01E+00
	744.28	4.70	1.64E+00		8.83E+00
	763.94	22.14	-1.27E-01		2.01E+00
	818.03	7.29	4.59E-01		6.30E+00
	884.68	72.19	9.11E-02		8.02E-01
	937.49	34.13	2.24E-01		1.68E+00
	1384.30	24.12	0.00E+00		1.66E+00
	1475.79	3.97	1.05E+00		1.29E+01
	1505.04	12.95	-1.13E+00		3.80E+00
	1562.30	1.02	1.13E+01		5.53E+01
SN-113	255.06	1.82	6.32E+00	6.10E-01	2.24E+01
	391.69	64.00	-7.70E-03		6.10E-01
IN-114	190.27	15.40	-7.56E-01	3.30E+00	3.30E+00
	558.43	4.40	1.47E+00		1.68E+01
	725.24	4.40	3.59E+00		2.25E+01
SB-122	564.24	69.30	-1.95E+05	6.56E+05	6.56E+05
I-124	602.72	60.50	-2.70E+03	5.70E+03	5.70E+03
	722.78	9.98	6.84E+03		4.33E+04
	1509.49	2.99	-6.13E+04		1.14E+05
	1691.02	10.40	6.48E+03		4.60E+04
SB-124	602.73	97.80	-3.39E-01	7.14E-01	7.14E-01
	645.85	7.38	3.10E-01		9.30E+00
	709.32	1.35	5.56E-01		5.80E+01
	713.78	2.27	-1.52E+00		3.41E+01
	722.79	10.76	1.29E+00		8.14E+00
	968.20	1.89	-1.60E+00		4.15E+01
	1045.13	1.84	3.90E+00		5.39E+01
	1325.51	1.62	6.55E+00		5.83E+01
	1355.18	1.04	2.08E+01		8.58E+01
	1368.16	2.62	1.38E+00		2.64E+01
	1436.56	1.23	9.18E+00		6.61E+01
	1690.98	47.30	2.89E-01		2.05E+00
I-125	30.98	20.10	2.80E-01	2.90E+00	2.90E+00
	35.49	6.68	3.90E+00		9.50E+00
SB-125	176.31	6.82	-2.31E-01	1.21E+00	3.46E+00
	380.45	1.52	-1.54E+00		1.90E+01
	427.88	29.60	2.13E-01		1.21E+00
	463.36	10.49	-8.11E-01		2.76E+00
	600.60	17.86	-6.94E-02		2.36E+00
	606.72	5.03	-7.97E-01		8.90E+00
	635.95	11.31	-5.74E-02		3.49E+00
	671.45	1.80	-2.92E+00		2.08E+01
@ XE-125	188.42	54.00	1.00E+26	1.00E+26	1.00E+26

Analysis Report for PBWA19JVR2

Tetra Tech, TO# 160115-1

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
@	XE-125	243.38	30.10	1.00E+26	1.00E+26	1.00E+26
	I-126	388.63	34.10	3.80E+00	1.63E+01	1.63E+01
	SB-126	414.80	83.30	-1.49E+00	7.63E+00	7.77E+00
		666.30	99.60	1.86E+00		8.65E+00
		695.00	99.60	-1.60E+00		7.63E+00
		697.00	28.90	-7.95E+00		2.57E+01
		720.50	53.80	-1.58E+00		1.68E+01
		856.70	17.60	7.91E+00		5.35E+01
	I-129	39.58	7.45	-1.32E+00	3.49E+00	3.49E+00
@	I-130	418.01	34.15	1.00E+26	1.00E+26	1.00E+26
@		536.09	99.00	1.00E+26		1.00E+26
@		668.54	96.10	1.00E+26		1.00E+26
@		739.48	82.30	1.00E+26		1.00E+26
@		1157.47	11.30	1.00E+26		1.00E+26
	I-131	284.30	6.14	1.33E+02	4.18E+01	5.26E+02
		364.49	81.70	-9.59E-01		4.18E+01
		636.99	7.17	1.72E+02		6.74E+02
		722.91	1.77	6.30E+02		3.07E+03
	XE-131M	163.93	1.91	-4.57E+01	2.78E+02	2.78E+02
	TE-132	111.76	1.74	1.91E+05	4.18E+04	1.69E+06
		116.30	1.96	0.00E+00		1.68E+06
		228.16	88.00	1.34E+03		4.18E+04
	BA-133	53.16	2.20	-9.73E-01	4.77E-01	8.74E+00
		79.62	2.62	-3.20E+00		6.70E+00
		81.00	34.06	-2.13E-01		5.15E-01
		160.61	0.64	-4.94E+00		3.32E+01
		223.23	0.45	4.69E+00		5.70E+01
		276.40	7.16	-8.48E-01		3.44E+00
		302.85	18.33	1.04E-01		1.48E+00
		356.02	62.05	-4.55E-02		4.77E-01
		383.85	8.94	1.97E-01		3.25E+00
	I-133	529.87	87.00	-1.79E+17	5.74E+18	5.74E+18
		875.33	4.51	1.14E+19		1.34E+20
	CS-134	475.35	1.47	-1.04E+00	4.39E-01	2.24E+01
		563.23	8.38	-7.52E-01		4.25E+00
		569.32	15.43	1.59E-01		2.53E+00
		604.70	97.56	-1.26E-01		4.39E-01
		795.84	85.44	-6.46E-02		5.09E-01
		801.93	8.73	-1.59E-01		5.02E+00
		1038.57	1.00	-1.44E+01		4.34E+01
		1167.94	1.80	6.92E+00		2.98E+01
		1365.15	3.04	-9.96E-01		1.27E+01
@	I-134	405.45	7.35	1.00E+26	1.00E+26	1.00E+26
@		540.83	7.60	1.00E+26		1.00E+26
@		595.36	11.20	1.00E+26		1.00E+26
@		621.79	10.60	1.00E+26		1.00E+26
@		677.34	7.80	1.00E+26		1.00E+26
@		847.03	95.40	1.00E+26		1.00E+26
@		884.09	64.90	1.00E+26		1.00E+26
@		1072.55	15.00	1.00E+26		1.00E+26
@		1136.16	9.20	1.00E+26		1.00E+26
	CS-135	787.20	100.00	-3.84E-02	4.01E-01	4.01E-01

Analysis Report for PBWA19JVR2

Tetra Tech, TO# 160115-1

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CS-135	846.10	95.90	3.08E-02	4.01E-01	4.23E-01
@	I-135	417.63	3.55	1.00E+26	1.00E+26	1.00E+26
@		546.56	7.20	1.00E+26		1.00E+26
@		836.80	6.73	1.00E+26		1.00E+26
@		1038.76	8.00	1.00E+26		1.00E+26
@		1124.00	3.64	1.00E+26		1.00E+26
@		1131.51	22.74	1.00E+26		1.00E+26
@		1260.41	28.90	1.00E+26		1.00E+26
@		1457.56	8.73	1.00E+26		1.00E+26
@		1678.03	9.62	1.00E+26		1.00E+26
@		1706.46	4.13	1.00E+26		1.00E+26
@		1791.20	7.77	1.00E+26		1.00E+26
@	XE-135	249.79	90.20	1.00E+26	1.00E+26	1.00E+26
@		608.18	2.90	1.00E+26		1.00E+26
@	XE-135M	526.56	80.50	1.00E+26	1.00E+26	1.00E+26
	CS-136	66.88	4.80	-2.65E+01	7.01E+00	7.16E+01
		86.36	5.20	-3.25E+01		6.58E+01
		153.25	5.77	5.09E+00		7.35E+01
		163.92	3.40	-1.86E+01		1.13E+02
		176.60	10.00	3.44E+00		4.24E+01
		273.65	11.10	-4.46E+00		4.24E+01
		340.55	42.30	-2.26E+00		1.07E+01
		818.51	100.00	2.91E-01		7.01E+00
		1048.07	80.00	4.33E+00		1.30E+01
		1235.36	20.10	-1.21E+00		4.30E+01
	CS-137	661.66	85.10	1.90E-03	4.29E-01	4.29E-01
@	CS-138	138.10	1.49	1.00E+26	1.00E+26	1.00E+26
@		227.76	1.51	1.00E+26		1.00E+26
@		408.98	4.66	1.00E+26		1.00E+26
@		462.80	30.70	1.00E+26		1.00E+26
@		547.00	10.76	1.00E+26		1.00E+26
@		871.80	5.11	1.00E+26		1.00E+26
@		1009.78	29.80	1.00E+26		1.00E+26
@		1147.22	1.24	1.00E+26		1.00E+26
@		1343.59	1.14	1.00E+26		1.00E+26
@		1435.86	76.30	1.00E+26		1.00E+26
	LA-138	788.74	33.60	1.90E-01	6.49E-01	1.27E+00
		1435.80	66.40	9.02E-02		6.49E-01
@	BA-139	165.86	23.60	1.00E+26	1.00E+26	1.00E+26
	CE-139	165.85	79.90	-3.39E-02	3.47E-01	3.47E-01
	BA-140	162.66	6.21	-2.01E+01	2.91E+01	6.48E+01
		304.85	4.30	-2.45E+01		1.16E+02
		423.72	3.10	-1.09E+01		2.06E+02
		437.58	1.93	-3.52E+01		3.26E+02
		537.26	24.39	-2.98E-01		2.91E+01
	LA-140	328.76	20.32	-1.54E+09	3.47E+09	1.04E+10
		432.49	2.90	-1.74E+10		7.93E+10
		487.02	45.50	-1.40E+09		5.05E+09
		751.64	4.33	4.12E+08		6.21E+10
		815.77	23.30	9.41E+08		1.23E+10
		867.85	5.50	-1.64E+10		5.03E+10
		919.55	2.66	-3.38E+10		9.79E+10

Analysis Report for PBWA19JVR2

Tetra Tech, TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
LA-140	925.19	6.90	-1.68E+09	3.47E+09	4.35E+10
	1596.21	95.40	-7.82E+08		3.47E+09
CE-141	145.44	48.20	1.16E-01	1.56E+00	1.56E+00
CE-144	80.12	1.36	-6.29E+00	2.25E+00	1.47E+01
	133.51	11.09	-9.11E-02		2.25E+00
PM-144	476.78	41.98	8.63E-02	3.96E-01	8.78E-01
	618.01	98.59	-1.26E-01		4.33E-01
	694.00	0.55	-4.06E+00		7.48E+01
	696.49	99.49	-1.07E-01		3.96E-01
	778.57	1.51	-4.60E+00		2.79E+01
	814.14	0.55	-2.05E+00		7.53E+01
PM-146	146.20	0.22	5.03E+00	4.78E-01	1.06E+02
	453.88	66.00	-6.99E-02		4.78E-01
	589.80	0.43	-1.06E+01		8.02E+01
	633.25	1.12	-7.98E+00		3.13E+01
	735.93	22.80	-9.95E-02		1.66E+00
	747.24	17.71	-4.13E-01		1.76E+00
ND-147	91.11	27.90	2.45E+01	3.00E+01	3.00E+01
	319.41	1.95	5.04E+01		5.13E+02
	398.15	0.87	1.13E+02		1.07E+03
	439.89	1.20	4.50E+01		9.00E+02
	531.02	13.09	1.66E+01		9.34E+01
EU-152	121.78	28.42	-1.28E-01	7.06E-01	7.06E-01
	244.70	7.49	-2.61E-01		3.48E+00
	295.94	0.44	1.64E+00		6.13E+01
	344.28	26.58	-5.17E-01		8.88E-01
	411.12	2.23	2.51E+00		1.46E+01
	443.98	3.09	1.45E+00		1.11E+01
	688.67	0.83	9.30E+00		4.75E+01
	778.90	12.96	-8.78E-01		2.80E+00
	867.39	4.15	-1.30E-01		1.00E+01
	964.13	14.50	-1.22E+00		2.51E+00
	1005.28	0.65	-1.09E+01		5.04E+01
	1085.87	10.16	1.27E+00		4.91E+00
	1089.70	1.71	-7.10E+00		2.25E+01
	1112.12	13.54	1.03E+00		4.03E+00
	1212.95	1.40	-2.20E+00		3.25E+01
	1299.12	1.63	8.56E-01		2.94E+01
	1408.01	20.87	8.07E-01		2.35E+00
GD-153	69.67	2.54	-2.57E+00	6.66E-01	9.02E+00
	97.43	30.20	-4.18E-01		6.66E-01
	103.18	21.44	-1.80E-02		9.27E-01
EU-154	123.07	40.78	-1.72E-01	4.81E-01	4.81E-01
	247.93	6.95	-1.36E+00		3.52E+00
	444.49	0.56	7.06E+00		6.22E+01
	582.10	0.89	-7.05E+00		3.88E+01
	591.76	4.99	-4.35E+00		6.31E+00
	692.42	1.80	5.52E+00		2.21E+01
	723.30	20.22	4.77E-01		2.33E+00
	756.80	4.57	5.84E-01		8.41E+00
	815.53	0.52	-1.98E+00		7.26E+01
	845.39	0.59	5.06E+00		6.95E+01

Analysis Report for PBWA19JVR2

Tetra Tech, TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
EU-154	873.19	12.27	2.11E-01	4.81E-01	3.43E+00
	892.78	0.52	3.07E+00		9.21E+01
	904.08	0.90	-6.22E-01		4.81E+01
	996.26	10.59	9.29E-02		3.55E+00
	1004.72	18.00	-5.89E-01		1.83E+00
	1246.15	0.87	1.61E+01		5.74E+01
	1274.44	35.19	3.27E-01		1.49E+00
	1494.05	0.70	9.82E+00		7.67E+01
	1596.49	1.80	-7.37E+00		2.49E+01
EU-155	45.30	1.32	9.56E+00	6.25E-01	2.11E+01
	60.01	1.13	-4.18E+00		1.71E+01
	86.54	30.70	-3.09E-01		6.25E-01
	105.31	21.15	-4.11E-02		8.45E-01
W-187	72.00	11.10	-3.08E+15	8.18E+16	1.08E+17
	134.25	8.80	1.76E+16		1.59E+17
	479.55	21.80	-3.13E+15		9.04E+16
	618.26	6.28	-1.08E+17		3.73E+17
	625.52	1.09	-5.02E+17		1.63E+18
	685.73	27.30	-4.44E+15		8.18E+16
	772.89	4.12	3.87E+16		5.84E+17
IR-192	295.96	28.66	4.20E-02	6.43E-01	1.57E+00
	308.46	30.00	-3.14E-01		1.42E+00
	316.51	82.81	2.01E-01		6.43E-01
	468.07	47.83	9.99E-02		1.10E+00
	588.58	4.51	1.09E-01		1.30E+01
	604.41	8.23	-2.37E+00		8.30E+00
	612.47	5.31	1.05E+01		1.59E+01
TL-201	135.34	2.56	9.60E+04	5.94E+05	2.56E+06
	167.43	10.00	-1.48E+05		5.94E+05
HG-203	279.20	81.46	-3.80E-01	6.26E-01	6.26E-01
TL-208	277.36	6.31	-5.86E-01	4.20E-01	3.83E+00
	510.77	22.60	2.43E+00		2.63E+00
	583.19	84.50	4.02E-03		4.20E-01
	763.13	1.81	-3.37E+00		2.01E+01
	860.56	12.42	5.41E-01		3.47E+00
PB-210	46.54	4.25	1.74E+00	5.96E+00	5.96E+00
BI-211	351.06	12.91	5.42E-01	2.32E+00	2.32E+00
PB-211	404.85	3.78	-2.04E+00	7.61E+00	7.61E+00
	427.09	1.76	3.44E+00		1.96E+01
	704.64	0.46	2.93E+01		9.45E+01
	766.51	0.62	8.20E+00		6.47E+01
	832.01	3.52	-1.05E+00		1.05E+01
BI-212	727.33	6.58	1.46E+00	7.09E+00	7.09E+00
	785.37	1.10	5.61E-02		3.64E+01
	1078.62	0.56	9.11E+00		8.57E+01
	1620.50	1.49	2.06E+00		3.93E+01
PB-212	115.18	0.59	9.27E-01	6.32E-01	3.12E+01
	238.63	43.30	2.15E-01		6.32E-01
	300.09	3.28	1.19E+00		8.33E+00
BI-214	609.31	44.80	2.41E-01	1.05E+00	1.05E+00
	665.45	1.29	4.27E+00		3.06E+01
	768.36	4.80	5.43E-01		8.19E+00

Analysis Report for PBWA19JVR2

Tetra Tech, TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
BI-214	806.17	1.22	3.26E+00	1.05E+00	3.43E+01
	934.06	3.03	3.77E+00		1.62E+01
	1120.29	14.80	-6.10E-01		3.34E+00
	1155.19	1.64	-1.54E+00		2.55E+01
	1207.68	0.49	1.42E+01		9.82E+01
	1238.11	5.86	-3.03E-01		8.37E+00
	1280.96	1.44	9.51E-01		3.27E+01
	1377.67	3.92	-6.16E-01		8.73E+00
	1385.31	0.89	0.00E+00		3.86E+01
	1401.50	1.55	5.37E+00		2.73E+01
	1407.98	2.80	5.97E+00		1.74E+01
	1415.80	0.48	1.03E+01		9.79E+01
	1509.23	2.12	-9.30E+00		1.73E+01
	1583.22	0.70	1.15E+01		7.60E+01
	1661.28	1.14	-5.10E+00		4.45E+01
	1729.59	2.88	-3.84E+00		7.66E+00
	1764.49	15.36	9.44E-01		3.93E+00
	1847.42	2.04	4.22E+00		2.10E+01
PB-214	53.23	1.11	-1.91E+00	8.58E-01	1.71E+01
	241.98	7.50	1.21E+00		3.68E+00
	258.79	0.55	-9.55E+00		4.84E+01
	295.21	18.50	0.00E+00		1.46E+00
	351.92	35.80	2.32E-01		8.58E-01
	785.91	0.85	-4.43E+00		4.60E+01
	839.03	0.63	8.89E+00		6.55E+01
RN-219	130.59	0.12	2.27E+01	2.50E+00	1.85E+02
	271.23	10.80	7.50E-02		2.50E+00
	401.81	6.37	-2.89E-01		4.68E+00
RN-220	549.73	0.11	-4.71E+01	2.79E+02	2.79E+02
RA-223	122.32	1.19	-3.43E+00	2.13E+00	1.67E+01
	144.23	3.22	-5.12E-01		6.96E+00
	154.21	5.62	2.84E-01		4.10E+00
	158.63	0.69	4.69E+00		3.27E+01
	179.54	0.15	-6.15E+00		1.60E+02
	269.46	13.70	5.98E-01		2.13E+00
	288.18	0.16	-1.76E+01		1.62E+02
	323.87	3.93	7.80E-02		7.50E+00
	328.40	0.21	-7.37E+00		1.37E+02
	338.28	2.79	1.13E+00		1.02E+01
	342.90	0.22	-6.61E+01		1.00E+02
	346.80	0.18	-4.75E+01		1.35E+02
	371.68	0.48	3.19E+00		6.01E+01
RA-224	240.99	3.97	2.73E+00	6.98E+00	6.98E+00
RA-226	186.10	3.50	-3.05E-02	6.98E+00	6.98E+00
TH-227	50.13	8.00	-7.20E-01	1.95E+00	2.47E+00
	79.72	1.89	-4.39E+00		9.20E+00
	93.93	1.37	2.38E+01		2.03E+01
	210.65	1.10	-5.21E-01		2.14E+01
	235.97	12.70	-1.01E-01		1.95E+00
	256.25	7.01	9.59E-01		4.09E+00
	286.12	1.54	4.00E+00		1.80E+01
	300.00	2.67	2.77E+00		1.05E+01

Analysis Report for PBWA19JVR2

Tetra Tech, TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
TH-227	304.51	1.23	-2.86E+00	1.95E+00	2.02E+01
	329.85	2.69	1.15E-01		1.11E+01
	334.38	1.05	6.72E+00		2.90E+01
AC-228	99.50	1.28	-1.07E+01	1.58E+00	1.29E+01
	129.07	2.45	4.68E-01		8.85E+00
	153.98	0.74	-2.13E+00		3.09E+01
	209.25	3.88	-3.00E-01		6.04E+00
	270.24	3.43	8.63E-01		8.13E+00
	327.90	3.06	-5.56E-01		9.32E+00
	332.37	0.40	2.73E+00		7.43E+01
	338.32	11.25	2.81E-01		2.54E+00
	409.46	1.94	2.79E+00		1.64E+01
	463.01	4.44	-1.84E+00		6.27E+00
	508.96	0.47	1.25E+02		1.28E+02
	562.50	0.87	-6.88E+00		3.89E+01
	755.32	1.00	-3.47E+00		3.51E+01
	772.29	1.50	8.12E-02		2.57E+01
	782.14	0.50	-2.34E+00		7.80E+01
	794.95	4.34	-2.70E+00		9.31E+00
	830.49	0.55	7.75E+00		7.26E+01
	835.71	1.68	-2.24E+00		2.27E+01
	840.38	0.94	-1.18E+00		4.18E+01
	904.20	0.78	-7.10E-01		5.48E+01
	911.21	26.60	4.71E-02		1.58E+00
	964.77	5.11	-1.83E+00		7.35E+00
	968.97	16.20	2.89E-01		2.72E+00
	1247.08	0.50	1.97E+01		9.55E+01
	1459.14	0.80	2.21E+01		7.19E+01
	1495.91	0.89	1.90E+01		6.39E+01
	1580.54	0.61	2.70E+01		9.09E+01
	1588.21	3.27	2.47E+00		1.64E+01
	1630.63	1.60	-5.57E+00		3.13E+01
TH-228	84.37	1.23	7.07E+00	1.70E+01	1.70E+01
	215.99	0.26	-3.36E+00		9.08E+01
TH-229	75.09	0.61	1.13E+01	4.81E+00	3.46E+01
	86.35	3.90	-2.38E+00		4.81E+00
	124.60	1.43	-3.05E+00		1.38E+01
	136.99	1.18	-9.60E-01		1.86E+01
	148.15	0.88	7.18E-01		2.67E+01
	154.34	0.77	2.07E+00		3.00E+01
	156.41	1.19	3.61E+00		1.96E+01
	193.51	4.41	-1.95E+00		5.21E+00
	204.69	0.60	-5.30E+00		3.92E+01
	210.85	2.77	-2.07E-01		8.50E+00
PA-231	283.69	1.70	1.88E+00	1.11E+01	1.58E+01
	300.07	2.46	1.59E+00		1.11E+01
	302.65	2.20	8.62E-01		1.22E+01
	330.06	1.40	-4.22E+00		2.05E+01
TH-231	81.23	0.89	-4.89E+00	3.17E+00	2.05E+01
	84.21	6.60	1.32E+00		3.17E+00
	89.95	0.94	-1.62E+01		1.89E+01
TH-232	63.81	0.27	4.00E+01	8.59E+01	8.59E+01

Analysis Report for PBWA19JVR2

Tetra Tech, TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
U-232	57.78	0.20	-5.33E+01	8.51E+01	8.51E+01
	129.08	0.07	1.67E+01		3.15E+02
PA-233	75.35	1.39	4.97E+00	7.43E-01	1.52E+01
	86.81	1.97	-5.51E+00		9.45E+00
	103.97	0.87	-2.07E+00		1.91E+01
	271.48	0.33	2.47E+00		8.23E+01
	300.34	6.62	5.91E-01		4.13E+00
	312.17	38.60	4.25E-02		7.43E-01
	340.81	4.47	-1.17E+00		5.56E+00
	375.45	0.68	-3.28E+00		4.05E+01
	398.62	1.39	3.87E-01		2.01E+01
	415.76	1.75	-1.02E+00		1.78E+01
U-233	42.44	0.09	2.06E+01	3.10E+02	3.10E+02
	54.70	0.02	-3.49E+01		1.05E+03
	97.13	0.02	-5.39E+02		8.58E+02
PA-234	62.70	1.55	1.17E+01	1.25E+00	1.60E+01
	99.86	3.19	-3.56E+00		5.24E+00
	125.46	0.78	-4.98E+00		2.57E+01
	131.30	18.00	1.79E-01		1.25E+00
	140.50	0.81	-1.09E+00		2.78E+01
	152.71	5.97	5.69E-01		3.94E+00
	159.48	0.65	-2.04E+00		3.31E+01
	170.85	0.50	3.68E+00		4.51E+01
	186.15	1.76	-6.07E-02		1.39E+01
	193.73	0.49	-1.11E+01		4.84E+01
	200.97	0.90	-1.39E+00		2.61E+01
	203.12	1.23	-6.05E+00		1.82E+01
	227.00	9.99	6.32E-01		2.55E+00
	245.37	0.75	-1.01E+01		3.27E+01
	249.22	2.47	-4.53E+00		9.72E+00
	272.28	1.08	-2.51E+00		2.39E+01
	293.79	2.99	2.86E-01		9.00E+00
	330.40	0.77	-7.67E+00		3.72E+01
	369.50	2.47	-7.53E-01		1.13E+01
	372.00	1.21	1.40E+00		2.42E+01
	458.68	1.13	4.11E+00		2.89E+01
	506.75	1.29	-5.58E+00		3.68E+01
	513.40	1.10	5.08E+01		5.42E+01
	521.40	0.74	-5.53E+01		4.45E+01
	565.20	1.03	-1.30E+01		3.11E+01
	569.32	11.80	1.98E-01		3.15E+00
	602.60	0.54	-3.26E+01		6.86E+01
	663.90	0.54	9.98E+00		7.03E+01
	666.50	1.16	7.46E+00		3.46E+01
	669.70	0.99	-6.14E+00		3.63E+01
	692.60	1.24	7.92E+00		3.17E+01
	699.03	3.61	-2.05E+00		1.01E+01
	705.90	2.27	1.62E+00		1.86E+01
	730.90	0.63	-4.72E+00		6.64E+01
	733.39	6.90	-9.48E-01		5.61E+00
	738.00	1.15	-2.04E+00		3.08E+01
	742.81	2.06	-1.15E-01		1.63E+01

Analysis Report for PBWA19JVR2

Tetra Tech, TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
PA-234	755.00	1.22	-3.87E+00	1.25E+00	2.87E+01
	780.40	0.90	-2.66E+00		4.22E+01
	786.27	1.19	-3.17E+00		3.29E+01
	794.90	1.34	-8.75E+00		3.02E+01
	796.10	2.58	-2.03E+00		1.60E+01
	805.52	3.14	2.09E+00		1.36E+01
	819.20	1.88	2.24E+00		2.10E+01
	824.65	3.12	-7.62E-01		1.21E+01
	831.50	4.12	7.22E-01		9.45E+00
	876.00	2.52	2.09E+00		1.73E+01
	880.50	10.40	4.49E-01		4.50E+00
	883.24	9.58	-3.26E-01		4.90E+00
	898.67	3.24	-4.02E+00		1.28E+01
	926.00	16.80	-1.05E-01		2.46E+00
	946.18	15.00	3.44E-01		3.24E+00
	980.48	5.15	-1.88E+00		7.66E+00
	984.20	1.62	-7.82E+00		2.27E+01
	1028.70	0.57	9.42E-01		7.19E+01
	1083.20	0.50	3.60E+01		1.04E+02
	1352.90	1.15	7.87E+00		4.11E+01
	1393.90	2.06	-5.68E+00		1.53E+01
	1668.40	0.76	3.11E+01		7.60E+01
	1693.80	0.69	-2.65E+01		5.82E+01
PA-234M	766.36	0.29	1.73E+01	4.08E+01	1.36E+02
	811.00	0.51	-2.78E+01		6.86E+01
	1001.03	0.84	-1.07E+01		4.08E+01
TH-234	63.29	4.84	2.78E+00	4.75E+00	4.91E+00
	83.30	0.08	7.17E+01		2.61E+02
	92.59	5.58	4.57E+00		4.75E+00
	112.81	0.28	6.40E+00		6.77E+01
U-234	53.20	0.12	-1.72E+01	1.55E+02	1.55E+02
	120.90	0.03	-9.88E+01		5.93E+02
U-235	109.16	1.54	1.24E+00	4.41E-01	1.21E+01
	143.76	10.96	1.45E-01		2.10E+00
	163.36	5.08	-4.76E-01		4.14E+00
	185.71	57.20	4.03E-02		4.41E-01
	194.94	0.63	6.57E+00		3.92E+01
	202.11	1.08	-7.56E+00		2.05E+01
	205.31	5.01	-4.28E-01		4.74E+00
NP-237	57.10	0.39	-2.89E+01	1.51E+00	4.33E+01
	86.48	12.40	-7.49E-01		1.51E+00
	94.64	0.60	3.56E+01		4.27E+01
	143.25	0.43	9.49E+00		5.46E+01
NP-239	106.12	27.20	1.41E+04	7.32E+06	7.32E+06
	209.75	3.42	-3.70E+05		7.66E+07
	228.18	10.76	7.92E+05		2.47E+07
	277.60	14.38	-3.17E+06		1.86E+07
	334.31	2.07	3.77E+07		1.63E+08
AM-241	59.54	35.90	-1.55E-01	5.18E-01	5.18E-01
CM-241	132.41	3.90	2.35E+00	1.50E+00	1.84E+01
	165.01	3.40	-2.04E+00		1.99E+01
	205.88	2.67	8.14E-02		2.88E+01

Analysis Report for PBWA19JVR2

Tetra Tech, TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
CM-241	430.63	4.06	-7.51E-01	1.50E+00	2.59E+01
	463.27	1.23	-2.13E+01		7.26E+01
	471.80	71.30	2.45E-01		1.50E+00
	636.88	1.53	2.22E+01		8.77E+01
AM-243	74.66	68.20	1.14E-01	3.16E-01	3.16E-01

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.60	10.42	6.81E+00	6.81E+00	1.21E+00	3.16E+00
NA-22	1274.53	99.94	5.39E-01	5.39E-01	1.18E-01	2.41E-01
@ NA-24	1368.63	100.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
>@	2754.03	99.94	0.00E+00		0.00E+00	0.00E+00
K-40	1460.83	10.67	5.40E+00	5.40E+00	1.66E+00	2.41E+00
@ AR-41	1293.59	99.10	1.00E+26	1.00E+26	1.00E+26	1.00E+20
CR-51	320.08	9.86	1.23E+01	1.23E+01	1.53E+00	5.80E+00
MN-54	834.85	99.98	4.53E-01	4.53E-01	2.20E-03	2.05E-01
CO-56	846.77	99.93	7.13E-01	7.13E-01	1.36E-01	3.24E-01
	977.37	1.44	5.31E+01		1.26E+01	2.41E+01
	1037.84	13.99	4.49E+00		-2.17E+00	1.97E+00
	1175.10	2.28	3.04E+01		1.23E+00	1.34E+01
	1238.28	67.56	1.19E+00		-4.31E-02	5.31E-01
	1360.21	4.33	1.39E+01		-4.71E+00	5.84E+00
	1771.35	15.69	4.69E+00		-1.73E+00	1.97E+00
	2015.18	3.08	4.14E+00		0.00E+00	0.00E+00
	2034.76	7.89	1.63E+00		0.00E+00	0.00E+00
@ MN-56	846.75	98.87	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1810.72	27.19	1.00E+26		1.00E+26	1.00E+20
>@	2113.05	14.34	0.00E+00		0.00E+00	0.00E+00
CO-57	122.06	85.60	2.68E-01	2.68E-01	-5.49E-02	1.27E-01
	136.47	10.68	2.44E+00		5.20E-02	1.16E+00
	692.41	0.16	2.88E+02		7.19E+01	1.32E+02
CO-58	810.78	99.45	6.03E-01	6.03E-01	-2.45E-01	2.69E-01
	863.96	0.68	1.01E+02		3.01E+00	4.54E+01
	1674.73	0.52	1.32E+02		-1.14E+02	5.47E+01
FE-59	142.65	1.02	5.30E+01	1.20E+00	8.29E-01	2.52E+01
	192.35	3.08	1.71E+01		-8.21E+00	8.05E+00
	1099.25	56.50	1.20E+00		-9.29E-01	4.97E-01
	1291.60	43.20	2.59E+00		4.52E-01	1.14E+00

Analysis Report for PBWA19JVR2

Tetra Tech, TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CO-60	1173.24	99.90	4.32E-01	4.32E-01	-4.78E-02	1.90E-01
	1332.50	99.98	5.13E-01		5.76E-02	2.28E-01
@ CU-64	1345.77	0.47	1.00E+26	1.00E+26	0.00E+00	1.00E+20
ZN-65	1115.55	50.60	1.20E+00	1.20E+00	9.45E-03	5.42E-01
SE-75	66.05	1.12	2.57E+01	5.38E-01	1.74E+00	1.22E+01
	96.73	3.42	6.78E+00		-5.04E+00	3.18E+00
	121.12	17.14	1.66E+00		-2.44E-02	7.89E-01
	136.00	58.27	5.38E-01		2.01E-02	2.56E-01
	198.61	1.47	2.39E+01		4.89E+00	1.13E+01
	264.66	58.50	6.73E-01		1.89E-01	3.18E-01
	279.54	24.79	1.35E+00		-3.21E-01	6.28E-01
	303.93	1.31	2.74E+01		-7.68E-01	1.28E+01
	400.66	11.37	3.60E+00		-1.48E-01	1.67E+00
RB-83	520.39	44.70	1.15E+00	1.15E+00	-1.69E+00	5.27E-01
	529.59	29.30	1.92E+00		-5.97E-02	8.88E-01
	552.59	15.96	3.07E+00		-2.45E-01	1.40E+00
@ BR-84	881.60	42.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1897.60	14.90	1.00E+26		1.00E+26	1.00E+20
KR-85	514.01	0.43	1.38E+02	1.38E+02	1.27E+02	6.60E+01
@ KR-85M	151.20	75.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	304.87	14.00	1.00E+26		1.00E+26	1.00E+20
SR-85	514.01	95.70	1.11E+00	1.11E+00	1.02E+00	5.29E-01
@ SR-85m	151.19	12.90	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	231.86	84.40	1.00E+26		1.00E+26	1.00E+20
RB-86	1077.00	8.64	4.42E+01	4.42E+01	6.01E+00	2.00E+01
@ KR-87	402.59	49.60	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	673.83	1.89	1.00E+26		1.00E+26	1.00E+20
@	845.44	7.30	1.00E+26		1.00E+26	1.00E+20
@	1175.40	1.11	1.00E+26		1.00E+26	1.00E+20
@	1740.52	2.04	1.00E+26		1.00E+26	1.00E+20
@ KR-88	165.98	3.10	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	196.30	26.00	1.00E+26		1.00E+26	1.00E+20
@	362.23	2.25	1.00E+26		1.00E+26	1.00E+20
@	834.83	13.00	1.00E+26		1.00E+26	1.00E+20
@	985.78	1.52	1.00E+26		1.00E+26	1.00E+20
@	1141.33	1.28	1.00E+26		1.00E+26	1.00E+20
@	1179.51	1.00	1.00E+26		1.00E+26	1.00E+20
@	1250.67	1.12	1.00E+26		1.00E+26	1.00E+20
@	1369.50	1.48	1.00E+26		1.00E+26	1.00E+20
@	1518.39	2.15	1.00E+26		1.00E+26	1.00E+20
@	1529.77	10.90	1.00E+26		1.00E+26	1.00E+20
@ RB-88	898.03	14.04	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1836.01	21.40	1.00E+26		1.00E+26	1.00E+20
Y-88	898.04	93.68	6.49E-01	6.16E-01	-1.53E-01	2.93E-01
	1836.06	99.24	6.16E-01		-2.30E-01	2.56E-01
NB-94x	702.62	97.90	4.14E-01	3.94E-01	4.73E-02	1.90E-01
	871.09	99.90	3.94E-01		-9.41E-02	1.77E-01
NB-95	765.81	99.81	1.22E+00	1.22E+00	1.88E-01	5.57E-01
NB-95m	204.12	2.33	3.99E+05	3.95E+04	-6.88E+04	1.88E+05
	235.69	24.80	3.95E+04		-2.04E+03	1.86E+04
ZR-95	724.20	44.17	1.94E+00	1.27E+00	3.95E-01	8.98E-01
	756.73	54.46	1.27E+00		8.79E-02	5.73E-01
NB-96	460.04	26.62	1.34E+17	4.41E+16	4.23E+15	6.20E+16

Analysis Report for PBWA19JVR2

Tetra Tech, TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
NB-96	568.87	57.97	7.41E+16	4.41E+16	9.95E+15	3.43E+16
	778.22	96.45	4.41E+16		-5.78E+15	1.99E+16
	849.93	20.40	2.18E+17		-6.16E+15	9.83E+16
	1200.23	19.96	2.52E+17		3.17E+16	1.11E+17
MO-99	140.51	4.52	5.43E+06	3.19E+06	-2.13E+05	2.58E+06
	181.06	6.08	4.41E+06		5.51E+05	2.09E+06
	366.42	1.20	2.53E+07		-3.51E+06	1.17E+07
	739.50	12.13	3.19E+06		-3.12E+05	1.43E+06
	777.92	4.28	9.65E+06		-1.27E+06	4.36E+06
@ TC-99M	140.51	89.06	1.00E+26	1.00E+26	1.00E+26	1.00E+20
RU-103	443.80	3.27	2.71E+01	1.05E+00	2.97E+00	1.26E+01
	497.08	90.90	1.05E+00		2.11E-02	4.90E-01
	610.33	5.75	2.23E+01		9.01E+00	1.04E+01
RHRU-106	621.93	9.93	3.25E+00	3.25E+00	-2.08E+00	1.45E+00
	1050.41	1.56	3.83E+01		7.64E+00	1.75E+01
AG-108M	433.94	90.50	3.36E-01	3.36E-01	-8.30E-02	1.55E-01
	614.28	89.90	5.14E-01		1.52E-01	2.40E-01
	722.94	90.90	5.11E-01		1.05E-01	2.36E-01
CD-109	88.03	3.61	5.47E+00	5.47E+00	-3.99E+00	2.58E+00
AG-110M	116.48	1.36	1.85E+01	4.39E-01	0.00E+00	8.81E+00
	446.81	3.72	1.08E+01		1.65E+00	5.04E+00
	620.36	2.79	1.35E+01		-6.07E+00	6.11E+00
	657.76	94.00	4.39E-01		7.69E-02	2.00E-01
	677.62	10.28	4.29E+00		3.79E-01	1.96E+00
	687.02	6.39	6.55E+00		-3.74E-01	2.97E+00
	706.68	16.32	3.01E+00		1.09E-01	1.38E+00
	744.28	4.70	8.83E+00		1.64E+00	3.97E+00
	763.94	22.14	2.01E+00		-1.27E-01	9.11E-01
	818.03	7.29	6.30E+00		4.59E-01	2.85E+00
	884.68	72.19	8.02E-01		9.11E-02	3.68E-01
	937.49	34.13	1.68E+00		2.24E-01	7.67E-01
	1384.30	24.12	1.66E+00		0.00E+00	6.89E-01
	1475.79	3.97	1.29E+01		1.05E+00	5.56E+00
	1505.04	12.95	3.80E+00		-1.13E+00	1.62E+00
	1562.30	1.02	5.53E+01		1.13E+01	2.40E+01
SN-113	255.06	1.82	2.24E+01	6.10E-01	6.32E+00	1.06E+01
	391.69	64.00	6.10E-01		-7.70E-03	2.82E-01
IN-114	190.27	15.40	3.30E+00	3.30E+00	-7.56E-01	1.56E+00
	558.43	4.40	1.68E+01		1.47E+00	7.72E+00
	725.24	4.40	2.25E+01		3.59E+00	1.04E+01
SB-122	564.24	69.30	6.56E+05	6.56E+05	-1.95E+05	3.00E+05
I-124	602.72	60.50	5.70E+03	5.70E+03	-2.70E+03	2.62E+03
	722.78	9.98	4.33E+04		6.84E+03	2.00E+04
	1509.49	2.99	1.14E+05		-6.13E+04	4.75E+04
	1691.02	10.40	4.60E+04		6.48E+03	2.00E+04
SB-124	602.73	97.80	7.14E-01	7.14E-01	-3.39E-01	3.28E-01
	645.85	7.38	9.30E+00		3.10E-01	4.25E+00
	709.32	1.35	5.80E+01		5.56E-01	2.66E+01
	713.78	2.27	3.41E+01		-1.52E+00	1.56E+01
	722.79	10.76	8.14E+00		1.29E+00	3.76E+00
	968.20	1.89	4.15E+01		-1.60E+00	1.86E+01
	1045.13	1.84	5.39E+01		3.90E+00	2.46E+01
	1325.51	1.62	5.83E+01		6.55E+00	2.59E+01

Analysis Report for PBWA19JVR2

Tetra Tech, TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
SB-124	1355.18	1.04	8.58E+01	7.14E-01	2.08E+01	3.77E+01
	1368.16	2.62	2.64E+01		1.38E+00	1.11E+01
	1436.56	1.23	6.61E+01		9.18E+00	2.85E+01
	1690.98	47.30	2.05E+00		2.89E-01	8.91E-01
I-125	30.98	20.10	2.90E+00	2.90E+00	2.80E-01	1.35E+00
	35.49	6.68	9.50E+00		3.90E+00	4.50E+00
SB-125	176.31	6.82	3.46E+00	1.21E+00	-2.31E-01	1.64E+00
	380.45	1.52	1.90E+01		-1.54E+00	8.79E+00
	427.88	29.60	1.21E+00		2.13E-01	5.67E-01
	463.36	10.49	2.76E+00		-8.11E-01	1.26E+00
	600.60	17.86	2.36E+00		-6.94E-02	1.09E+00
	606.72	5.03	8.90E+00		-7.97E-01	4.14E+00
	635.95	11.31	3.49E+00		-5.74E-02	1.60E+00
	671.45	1.80	2.08E+01		-2.92E+00	9.46E+00
@ XE-125	188.42	54.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	243.38	30.10	1.00E+26		1.00E+26	1.00E+20
I-126	388.63	34.10	1.63E+01	1.63E+01	3.80E+00	7.60E+00
SB-126	414.80	83.30	7.77E+00	7.63E+00	-1.49E+00	3.60E+00
	666.30	99.60	8.65E+00		1.86E+00	3.98E+00
	695.00	99.60	7.63E+00		-1.60E+00	3.45E+00
	697.00	28.90	2.57E+01		-7.95E+00	1.16E+01
	720.50	53.80	1.68E+01		-1.58E+00	7.70E+00
	856.70	17.60	5.35E+01		7.91E+00	2.43E+01
I-129	39.58	7.45	3.49E+00	3.49E+00	-1.32E+00	1.64E+00
@ I-130	418.01	34.15	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	536.09	99.00	1.00E+26		1.00E+26	1.00E+20
@	668.54	96.10	1.00E+26		1.00E+26	1.00E+20
@	739.48	82.30	1.00E+26		1.00E+26	1.00E+20
@	1157.47	11.30	1.00E+26		1.00E+26	1.00E+20
I-131	284.30	6.14	5.26E+02	4.18E+01	1.33E+02	2.47E+02
	364.49	81.70	4.18E+01		-9.59E-01	1.94E+01
	636.99	7.17	6.74E+02		1.72E+02	3.12E+02
	722.91	1.77	3.07E+03		6.30E+02	1.42E+03
XE-131M	163.93	1.91	2.78E+02	2.78E+02	-4.57E+01	1.31E+02
TE-132	111.76	1.74	1.69E+06	4.18E+04	1.91E+05	7.97E+05
	116.30	1.96	1.68E+06		0.00E+00	8.01E+05
	228.16	88.00	4.18E+04		1.34E+03	1.96E+04
BA-133	53.16	2.20	8.74E+00	4.77E-01	-9.73E-01	4.09E+00
	79.62	2.62	6.70E+00		-3.20E+00	3.15E+00
	81.00	34.06	5.15E-01		-2.13E-01	2.42E-01
	160.61	0.64	3.32E+01		-4.94E+00	1.57E+01
	223.23	0.45	5.70E+01		4.69E+00	2.69E+01
	276.40	7.16	3.44E+00		-8.48E-01	1.60E+00
	302.85	18.33	1.48E+00		1.04E-01	6.93E-01
	356.02	62.05	4.77E-01		-4.55E-02	2.23E-01
	383.85	8.94	3.25E+00		1.97E-01	1.51E+00
I-133	529.87	87.00	5.74E+18	5.74E+18	-1.79E+17	2.66E+18
	875.33	4.51	1.34E+20		1.14E+19	6.08E+19
CS-134	475.35	1.47	2.24E+01	4.39E-01	-1.04E+00	1.03E+01
	563.23	8.38	4.25E+00		-7.52E-01	1.95E+00
	569.32	15.43	2.53E+00		1.59E-01	1.17E+00
	604.70	97.56	4.39E-01		-1.26E-01	2.04E-01
	795.84	85.44	5.09E-01		-6.46E-02	2.32E-01

Analysis Report for PBWA19JVR2

Tetra Tech, TO# 160115-1

	Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	CS-134	801.93	8.73	5.02E+00	4.39E-01	-1.59E-01	2.28E+00
		1038.57	1.00	4.34E+01		-1.44E+01	1.93E+01
		1167.94	1.80	2.98E+01		6.92E+00	1.34E+01
		1365.15	3.04	1.27E+01		-9.96E-01	5.35E+00
@	I-134	405.45	7.35	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		540.83	7.60	1.00E+26		1.00E+26	1.00E+20
@		595.36	11.20	1.00E+26		1.00E+26	1.00E+20
@		621.79	10.60	1.00E+26		1.00E+26	1.00E+20
@		677.34	7.80	1.00E+26		1.00E+26	1.00E+20
@		847.03	95.40	1.00E+26		1.00E+26	1.00E+20
@		884.09	64.90	1.00E+26		1.00E+26	1.00E+20
@		1072.55	15.00	1.00E+26		1.00E+26	1.00E+20
@		1136.16	9.20	1.00E+26		1.00E+26	1.00E+20
	CS-135	787.20	100.00	4.01E-01	4.01E-01	-3.84E-02	1.82E-01
		846.10	95.90	4.23E-01		3.08E-02	1.91E-01
@	I-135	417.63	3.55	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		546.56	7.20	1.00E+26		1.00E+26	1.00E+20
@		836.80	6.73	1.00E+26		1.00E+26	1.00E+20
@		1038.76	8.00	1.00E+26		1.00E+26	1.00E+20
@		1124.00	3.64	1.00E+26		1.00E+26	1.00E+20
@		1131.51	22.74	1.00E+26		1.00E+26	1.00E+20
@		1260.41	28.90	1.00E+26		1.00E+26	1.00E+20
@		1457.56	8.73	1.00E+26		1.00E+26	1.00E+20
@		1678.03	9.62	1.00E+26		1.00E+26	1.00E+20
@		1706.46	4.13	1.00E+26		1.00E+26	1.00E+20
@		1791.20	7.77	1.00E+26		1.00E+26	1.00E+20
@	XE-135	249.79	90.20	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		608.18	2.90	1.00E+26		1.00E+26	1.00E+20
@	XE-135M	526.56	80.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	CS-136	66.88	4.80	7.16E+01	7.01E+00	-2.65E+01	3.38E+01
		86.36	5.20	6.58E+01		-3.25E+01	3.11E+01
		153.25	5.77	7.35E+01		5.09E+00	3.49E+01
		163.92	3.40	1.13E+02		-1.86E+01	5.33E+01
		176.60	10.00	4.24E+01		3.44E+00	2.01E+01
		273.65	11.10	4.24E+01		-4.46E+00	1.99E+01
		340.55	42.30	1.07E+01		-2.26E+00	4.93E+00
		818.51	100.00	7.01E+00		2.91E-01	3.15E+00
		1048.07	80.00	1.30E+01		4.33E+00	5.95E+00
		1235.36	20.10	4.30E+01		-1.21E+00	1.91E+01
	CS-137	661.66	85.10	4.29E-01	4.29E-01	1.90E-03	1.95E-01
@	CS-138	138.10	1.49	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		227.76	1.51	1.00E+26		1.00E+26	1.00E+20
@		408.98	4.66	1.00E+26		1.00E+26	1.00E+20
@		462.80	30.70	1.00E+26		1.00E+26	1.00E+20
@		547.00	10.76	1.00E+26		1.00E+26	1.00E+20
@		871.80	5.11	1.00E+26		1.00E+26	1.00E+20
@		1009.78	29.80	1.00E+26		1.00E+26	1.00E+20
@		1147.22	1.24	1.00E+26		1.00E+26	1.00E+20
@		1343.59	1.14	1.00E+26		1.00E+26	1.00E+20
@		1435.86	76.30	1.00E+26		1.00E+26	1.00E+20
	LA-138	788.74	33.60	1.27E+00	6.49E-01	1.90E-01	5.82E-01
		1435.80	66.40	6.49E-01		9.02E-02	2.80E-01
@	BA-139	165.86	23.60	1.00E+26	1.00E+26	1.00E+26	1.00E+20

Analysis Report for PBWA19JVR2

Tetra Tech, TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CE-139	165.85	79.90	3.47E-01	3.47E-01	-3.39E-02	1.64E-01
BA-140	162.66	6.21	6.48E+01	2.91E+01	-2.01E+01	3.05E+01
	304.85	4.30	1.16E+02		-2.45E+01	5.38E+01
	423.72	3.10	2.06E+02		-1.09E+01	9.57E+01
	437.58	1.93	3.26E+02		-3.52E+01	1.51E+02
	537.26	24.39	2.91E+01		-2.98E-01	1.34E+01
LA-140	328.76	20.32	1.04E+10	3.47E+09	-1.54E+09	4.86E+09
	432.49	2.90	7.93E+10		-1.74E+10	3.67E+10
	487.02	45.50	5.05E+09		-1.40E+09	2.32E+09
	751.64	4.33	6.21E+10		4.12E+08	2.79E+10
	815.77	23.30	1.23E+10		9.41E+08	5.55E+09
	867.85	5.50	5.03E+10		-1.64E+10	2.24E+10
	919.55	2.66	9.79E+10		-3.38E+10	4.30E+10
	925.19	6.90	4.35E+10		-1.68E+09	1.95E+10
	1596.21	95.40	3.47E+09		-7.82E+08	1.48E+09
CE-141	145.44	48.20	1.56E+00	1.56E+00	1.16E-01	7.42E-01
CE-144	80.12	1.36	1.47E+01	2.25E+00	-6.29E+00	6.93E+00
	133.51	11.09	2.25E+00		-9.11E-02	1.07E+00
PM-144	476.78	41.98	8.78E-01	3.96E-01	8.63E-02	4.06E-01
	618.01	98.59	4.33E-01		-1.26E-01	1.99E-01
	694.00	0.55	7.48E+01		-4.06E+00	3.40E+01
	696.49	99.49	3.96E-01		-1.07E-01	1.79E-01
	778.57	1.51	2.79E+01		-4.60E+00	1.26E+01
	814.14	0.55	7.53E+01		-2.05E+00	3.38E+01
PM-146	146.20	0.22	1.06E+02	4.78E-01	5.03E+00	5.02E+01
	453.88	66.00	4.78E-01		-6.99E-02	2.21E-01
	589.80	0.43	8.02E+01		-1.06E+01	3.66E+01
	633.25	1.12	3.13E+01		-7.98E+00	1.42E+01
	735.93	22.80	1.66E+00		-9.95E-02	7.51E-01
	747.24	17.71	1.76E+00		-4.13E-01	7.78E-01
ND-147	91.11	27.90	3.00E+01	3.00E+01	2.45E+01	1.44E+01
	319.41	1.95	5.13E+02		5.04E+01	2.41E+02
	398.15	0.87	1.07E+03		1.13E+02	4.97E+02
	439.89	1.20	9.00E+02		4.50E+01	4.19E+02
	531.02	13.09	9.34E+01		1.66E+01	4.34E+01
EU-152	121.78	28.42	7.06E-01	7.06E-01	-1.28E-01	3.34E-01
	244.70	7.49	3.48E+00		-2.61E-01	1.64E+00
	295.94	0.44	6.13E+01		1.64E+00	2.87E+01
	344.28	26.58	8.88E-01		-5.17E-01	4.08E-01
	411.12	2.23	1.46E+01		2.51E+00	6.82E+00
	443.98	3.09	1.11E+01		1.45E+00	5.16E+00
	688.67	0.83	4.75E+01		9.30E+00	2.17E+01
	778.90	12.96	2.80E+00		-8.78E-01	1.25E+00
	867.39	4.15	1.00E+01		-1.30E-01	4.53E+00
	964.13	14.50	2.51E+00		-1.22E+00	1.10E+00
	1005.28	0.65	5.04E+01		-1.09E+01	2.17E+01
	1085.87	10.16	4.91E+00		1.27E+00	2.22E+00
	1089.70	1.71	2.25E+01		-7.10E+00	9.84E+00
	1112.12	13.54	4.03E+00		1.03E+00	1.83E+00
	1212.95	1.40	3.25E+01		-2.20E+00	1.43E+01
	1299.12	1.63	2.94E+01		8.56E-01	1.30E+01
	1408.01	20.87	2.35E+00		8.07E-01	1.03E+00
GD-153	69.67	2.54	9.02E+00	6.66E-01	-2.57E+00	4.27E+00

Analysis Report for PBWA19JVR2

Tetra Tech, TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
GD-153	97.43	30.20	6.66E-01	6.66E-01	-4.18E-01	3.13E-01
	103.18	21.44	9.27E-01		-1.80E-02	4.35E-01
EU-154	123.07	40.78	4.81E-01	4.81E-01	-1.72E-01	2.27E-01
	247.93	6.95	3.52E+00		-1.36E+00	1.65E+00
	444.49	0.56	6.22E+01		7.06E+00	2.90E+01
	582.10	0.89	3.88E+01		-7.05E+00	1.78E+01
	591.76	4.99	6.31E+00		-4.35E+00	2.86E+00
	692.42	1.80	2.21E+01		5.52E+00	1.01E+01
	723.30	20.22	2.33E+00		4.77E-01	1.08E+00
	756.80	4.57	8.41E+00		5.84E-01	3.81E+00
	815.53	0.52	7.26E+01		-1.98E+00	3.26E+01
	845.39	0.59	6.95E+01		5.06E+00	3.14E+01
	873.19	12.27	3.43E+00		2.11E-01	1.55E+00
	892.78	0.52	9.21E+01		3.07E+00	4.20E+01
	904.08	0.90	4.81E+01		-6.22E-01	2.17E+01
	996.26	10.59	3.55E+00		9.29E-02	1.56E+00
	1004.72	18.00	1.83E+00		-5.89E-01	7.88E-01
	1246.15	0.87	5.74E+01		1.61E+01	2.56E+01
	1274.44	35.19	1.49E+00		3.27E-01	6.66E-01
	1494.05	0.70	7.67E+01		9.82E+00	3.39E+01
	1596.49	1.80	2.49E+01		-7.37E+00	1.06E+01
EU-155	45.30	1.32	2.11E+01	6.25E-01	9.56E+00	1.00E+01
	60.01	1.13	1.71E+01		-4.18E+00	8.02E+00
	86.54	30.70	6.25E-01		-3.09E-01	2.95E-01
	105.31	21.15	8.45E-01		-4.11E-02	3.98E-01
W-187	72.00	11.10	1.08E+17	8.18E+16	-3.08E+15	5.10E+16
	134.25	8.80	1.59E+17		1.76E+16	7.55E+16
	479.55	21.80	9.04E+16		-3.13E+15	4.17E+16
	618.26	6.28	3.73E+17		-1.08E+17	1.72E+17
	625.52	1.09	1.63E+18		-5.02E+17	7.31E+17
	685.73	27.30	8.18E+16		-4.44E+15	3.72E+16
	772.89	4.12	5.84E+17		3.87E+16	2.65E+17
IR-192	295.96	28.66	1.57E+00	6.43E-01	4.20E-02	7.33E-01
	308.46	30.00	1.42E+00		-3.14E-01	6.61E-01
	316.51	82.81	6.43E-01		2.01E-01	3.03E-01
	468.07	47.83	1.10E+00		9.99E-02	5.05E-01
	588.58	4.51	1.30E+01		1.09E-01	5.98E+00
	604.41	8.23	8.30E+00		-2.37E+00	3.85E+00
	612.47	5.31	1.59E+01		1.05E+01	7.49E+00
TL-201	135.34	2.56	2.56E+06	5.94E+05	9.60E+04	1.22E+06
	167.43	10.00	5.94E+05		-1.48E+05	2.80E+05
HG-203	279.20	81.46	6.26E-01	6.26E-01	-3.80E-01	2.90E-01
TL-208	277.36	6.31	3.83E+00	4.20E-01	-5.86E-01	1.78E+00
	510.77	22.60	2.63E+00		2.43E+00	1.26E+00
	583.19	84.50	4.20E-01		4.02E-03	1.93E-01
	763.13	1.81	2.01E+01		-3.37E+00	9.04E+00
	860.56	12.42	3.47E+00		5.41E-01	1.57E+00
PB-210	46.54	4.25	5.96E+00	5.96E+00	1.74E+00	2.82E+00
BI-211	351.06	12.91	2.32E+00	2.32E+00	5.42E-01	1.09E+00
PB-211	404.85	3.78	7.61E+00	7.61E+00	-2.04E+00	3.52E+00
	427.09	1.76	1.96E+01		3.44E+00	9.16E+00
	704.64	0.46	9.45E+01		2.93E+01	4.35E+01
	766.51	0.62	6.47E+01		8.20E+00	2.94E+01

Analysis Report for PBWA19JVR2

Tetra Tech, TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PB-211	832.01	3.52	1.05E+01	7.61E+00	-1.05E+00	4.68E+00
BI-212	727.33	6.58	7.09E+00	7.09E+00	1.46E+00	3.28E+00
	785.37	1.10	3.64E+01		5.61E-02	1.65E+01
	1078.62	0.56	8.57E+01		9.11E+00	3.86E+01
	1620.50	1.49	3.93E+01		2.06E+00	1.74E+01
PB-212	115.18	0.59	3.12E+01	6.32E-01	9.27E-01	1.47E+01
	238.63	43.30	6.32E-01		2.15E-01	2.99E-01
	300.09	3.28	8.33E+00		1.19E+00	3.90E+00
BI-214	609.31	44.80	1.05E+00	1.05E+00	2.41E-01	4.90E-01
	665.45	1.29	3.06E+01		4.27E+00	1.40E+01
	768.36	4.80	8.19E+00		5.43E-01	3.72E+00
	806.17	1.22	3.43E+01		3.26E+00	1.56E+01
	934.06	3.03	1.62E+01		3.77E+00	7.39E+00
	1120.29	14.80	3.34E+00		-6.10E-01	1.50E+00
	1155.19	1.64	2.55E+01		-1.54E+00	1.12E+01
	1207.68	0.49	9.82E+01		1.42E+01	4.38E+01
	1238.11	5.86	8.37E+00		-3.03E-01	3.73E+00
	1280.96	1.44	3.27E+01		9.51E-01	1.44E+01
	1377.67	3.92	8.73E+00		-6.16E-01	3.62E+00
	1385.31	0.89	3.86E+01		0.00E+00	1.60E+01
	1401.50	1.55	2.73E+01		5.37E+00	1.18E+01
	1407.98	2.80	1.74E+01		5.97E+00	7.65E+00
	1415.80	0.48	9.79E+01		1.03E+01	4.28E+01
	1509.23	2.12	1.73E+01		-9.30E+00	7.19E+00
	1583.22	0.70	7.60E+01		1.15E+01	3.34E+01
	1661.28	1.14	4.45E+01		-5.10E+00	1.93E+01
	1729.59	2.88	7.66E+00		-3.84E+00	2.63E+00
	1764.49	15.36	3.93E+00		9.44E-01	1.74E+00
	1847.42	2.04	2.10E+01		4.22E+00	8.73E+00
PB-214	53.23	1.11	1.71E+01	8.58E-01	-1.91E+00	8.02E+00
	241.98	7.50	3.68E+00		1.21E+00	1.74E+00
	258.79	0.55	4.84E+01		-9.55E+00	2.28E+01
	295.21	18.50	1.46E+00		0.00E+00	6.83E-01
	351.92	35.80	8.58E-01		2.32E-01	4.02E-01
	785.91	0.85	4.60E+01		-4.43E+00	2.08E+01
	839.03	0.63	6.55E+01		8.89E+00	2.96E+01
RN-219	130.59	0.12	1.85E+02	2.50E+00	2.27E+01	8.79E+01
	271.23	10.80	2.50E+00		7.50E-02	1.17E+00
	401.81	6.37	4.68E+00		-2.89E-01	2.17E+00
RN-220	549.73	0.11	2.79E+02	2.79E+02	-4.71E+01	1.27E+02
RA-223	122.32	1.19	1.67E+01	2.13E+00	-3.43E+00	7.92E+00
	144.23	3.22	6.96E+00		-5.12E-01	3.31E+00
	154.21	5.62	4.10E+00		2.84E-01	1.95E+00
	158.63	0.69	3.27E+01		4.69E+00	1.55E+01
	179.54	0.15	1.60E+02		-6.15E+00	7.57E+01
	269.46	13.70	2.13E+00		5.98E-01	1.01E+00
	288.18	0.16	1.62E+02		-1.76E+01	7.59E+01
	323.87	3.93	7.50E+00		7.80E-02	3.51E+00
	328.40	0.21	1.37E+02		-7.37E+00	6.43E+01
	338.28	2.79	1.02E+01		1.13E+00	4.78E+00
	342.90	0.22	1.00E+02		-6.61E+01	4.58E+01
	346.80	0.18	1.35E+02		-4.75E+01	6.23E+01
	371.68	0.48	6.01E+01		3.19E+00	2.79E+01

Analysis Report for PBWA19JVR2

Tetra Tech, TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
RA-224	240.99	3.97	6.98E+00	6.98E+00	2.73E+00	3.30E+00
RA-226	186.10	3.50	6.98E+00	6.98E+00	-3.05E-02	3.31E+00
TH-227	50.13	8.00	2.47E+00	1.95E+00	-7.20E-01	1.16E+00
	79.72	1.89	9.20E+00		-4.39E+00	4.33E+00
	93.93	1.37	2.03E+01		2.38E+01	9.77E+00
	210.65	1.10	2.14E+01		-5.21E-01	1.01E+01
	235.97	12.70	1.95E+00		-1.01E-01	9.18E-01
	256.25	7.01	4.09E+00		9.59E-01	1.93E+00
	286.12	1.54	1.80E+01		4.00E+00	8.46E+00
	300.00	2.67	1.05E+01		2.77E+00	4.94E+00
	304.51	1.23	2.02E+01		-2.86E+00	9.40E+00
	329.85	2.69	1.11E+01		1.15E-01	5.20E+00
	334.38	1.05	2.90E+01		6.72E+00	1.36E+01
AC-228	99.50	1.28	1.29E+01	1.58E+00	-1.07E+01	6.07E+00
	129.07	2.45	8.85E+00		4.68E-01	4.20E+00
	153.98	0.74	3.09E+01		-2.13E+00	1.47E+01
	209.25	3.88	6.04E+00		-3.00E-01	2.84E+00
	270.24	3.43	8.13E+00		8.63E-01	3.83E+00
	327.90	3.06	9.32E+00		-5.56E-01	4.36E+00
	332.37	0.40	7.43E+01		2.73E+00	3.48E+01
	338.32	11.25	2.54E+00		2.81E-01	1.18E+00
	409.46	1.94	1.64E+01		2.79E+00	7.65E+00
	463.01	4.44	6.27E+00		-1.84E+00	2.86E+00
	508.96	0.47	1.28E+02		1.25E+02	6.15E+01
	562.50	0.87	3.89E+01		-6.88E+00	1.78E+01
	755.32	1.00	3.51E+01		-3.47E+00	1.57E+01
	772.29	1.50	2.57E+01		8.12E-02	1.16E+01
	782.14	0.50	7.80E+01		-2.34E+00	3.53E+01
	794.95	4.34	9.31E+00		-2.70E+00	4.23E+00
	830.49	0.55	7.26E+01		7.75E+00	3.28E+01
	835.71	1.68	2.27E+01		-2.24E+00	1.02E+01
	840.38	0.94	4.18E+01		-1.18E+00	1.88E+01
	904.20	0.78	5.48E+01		-7.10E-01	2.47E+01
	911.21	26.60	1.58E+00		4.71E-02	7.10E-01
	964.77	5.11	7.35E+00		-1.83E+00	3.25E+00
	968.97	16.20	2.72E+00		2.89E-01	1.22E+00
	1247.08	0.50	9.55E+01		1.97E+01	4.24E+01
	1459.14	0.80	7.19E+01		2.21E+01	3.22E+01
	1495.91	0.89	6.39E+01		1.90E+01	2.85E+01
	1580.54	0.61	9.09E+01		2.70E+01	4.01E+01
	1588.21	3.27	1.64E+01		2.47E+00	7.20E+00
	1630.63	1.60	3.13E+01		-5.57E+00	1.36E+01
TH-228	84.37	1.23	1.70E+01	1.70E+01	7.07E+00	8.10E+00
	215.99	0.26	9.08E+01		-3.36E+00	4.28E+01
TH-229	75.09	0.61	3.46E+01	4.81E+00	1.13E+01	1.65E+01
	86.35	3.90	4.81E+00		-2.38E+00	2.27E+00
	124.60	1.43	1.38E+01		-3.05E+00	6.52E+00
	136.99	1.18	1.86E+01		-9.60E-01	8.85E+00
	148.15	0.88	2.67E+01		7.18E-01	1.27E+01
	154.34	0.77	3.00E+01		2.07E+00	1.42E+01
	156.41	1.19	1.96E+01		3.61E+00	9.32E+00
	193.51	4.41	5.21E+00		-1.95E+00	2.46E+00
	204.69	0.60	3.92E+01		-5.30E+00	1.85E+01

Analysis Report for PBWA19JVR2

Tetra Tech, TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
TH-229	210.85	2.77	8.50E+00	4.81E+00	-2.07E-01	4.00E+00
PA-231	283.69	1.70	1.58E+01	1.11E+01	1.88E+00	7.39E+00
	300.07	2.46	1.11E+01		1.59E+00	5.20E+00
	302.65	2.20	1.22E+01		8.62E-01	5.72E+00
	330.06	1.40	2.05E+01		-4.22E+00	9.57E+00
TH-231	81.23	0.89	2.05E+01	3.17E+00	-4.89E+00	9.68E+00
	84.21	6.60	3.17E+00		1.32E+00	1.51E+00
	89.95	0.94	1.89E+01		-1.62E+01	8.88E+00
TH-232	63.81	0.27	8.59E+01	8.59E+01	4.00E+01	4.09E+01
U-232	57.78	0.20	8.51E+01	8.51E+01	-5.33E+01	3.97E+01
	129.08	0.07	3.15E+02		1.67E+01	1.50E+02
PA-233	75.35	1.39	1.52E+01	7.43E-01	4.97E+00	7.22E+00
	86.81	1.97	9.45E+00		-5.51E+00	4.47E+00
	103.97	0.87	1.91E+01		-2.07E+00	8.97E+00
	271.48	0.33	8.23E+01		2.47E+00	3.87E+01
	300.34	6.62	4.13E+00		5.91E-01	1.93E+00
	312.17	38.60	7.43E-01		4.25E-02	3.48E-01
	340.81	4.47	5.56E+00		-1.17E+00	2.56E+00
	375.45	0.68	4.05E+01		-3.28E+00	1.88E+01
	398.62	1.39	2.01E+01		3.87E-01	9.29E+00
	415.76	1.75	1.78E+01		-1.02E+00	8.26E+00
U-233	42.44	0.09	3.10E+02	3.10E+02	2.06E+01	1.46E+02
	54.70	0.02	1.05E+03		-3.49E+01	4.92E+02
	97.13	0.02	8.58E+02		-5.39E+02	4.03E+02
PA-234	62.70	1.55	1.60E+01	1.25E+00	1.17E+01	7.66E+00
	99.86	3.19	5.24E+00		-3.56E+00	2.46E+00
	125.46	0.78	2.57E+01		-4.98E+00	1.22E+01
	131.30	18.00	1.25E+00		1.79E-01	5.95E-01
	140.50	0.81	2.78E+01		-1.09E+00	1.32E+01
	152.71	5.97	3.94E+00		5.69E-01	1.87E+00
	159.48	0.65	3.31E+01		-2.04E+00	1.56E+01
	170.85	0.50	4.51E+01		3.68E+00	2.13E+01
	186.15	1.76	1.39E+01		-6.07E-02	6.58E+00
	193.73	0.49	4.84E+01		-1.11E+01	2.29E+01
	200.97	0.90	2.61E+01		-1.39E+00	1.23E+01
	203.12	1.23	1.82E+01		-6.05E+00	8.56E+00
	227.00	9.99	2.55E+00		6.32E-01	1.20E+00
	245.37	0.75	3.27E+01		-1.01E+01	1.53E+01
	249.22	2.47	9.72E+00		-4.53E+00	4.55E+00
	272.28	1.08	2.39E+01		-2.51E+00	1.12E+01
	293.79	2.99	9.00E+00		2.86E-01	4.21E+00
	330.40	0.77	3.72E+01		-7.67E+00	1.74E+01
	369.50	2.47	1.13E+01		-7.53E-01	5.25E+00
	372.00	1.21	2.42E+01		1.40E+00	1.12E+01
	458.68	1.13	2.89E+01		4.11E+00	1.34E+01
	506.75	1.29	3.68E+01		-5.58E+00	1.74E+01
	513.40	1.10	5.42E+01		5.08E+01	2.59E+01
	521.40	0.74	4.45E+01		-5.53E+01	2.05E+01
	565.20	1.03	3.11E+01		-1.30E+01	1.42E+01
	569.32	11.80	3.15E+00		1.98E-01	1.45E+00
	602.60	0.54	6.86E+01		-3.26E+01	3.15E+01
	663.90	0.54	7.03E+01		9.98E+00	3.22E+01
	666.50	1.16	3.46E+01		7.46E+00	1.59E+01

Analysis Report for PBWA19JVR2

Tetra Tech, TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PA-234	669.70	0.99	3.63E+01	1.25E+00	-6.14E+00	1.65E+01
	692.60	1.24	3.17E+01		7.92E+00	1.45E+01
	699.03	3.61	1.01E+01		-2.05E+00	4.58E+00
	705.90	2.27	1.86E+01		1.62E+00	8.53E+00
	730.90	0.63	6.64E+01		-4.72E+00	3.04E+01
	733.39	6.90	5.61E+00		-9.48E-01	2.55E+00
	738.00	1.15	3.08E+01		-2.04E+00	1.38E+01
	742.81	2.06	1.63E+01		-1.15E-01	7.30E+00
	755.00	1.22	2.87E+01		-3.87E+00	1.29E+01
	780.40	0.90	4.22E+01		-2.66E+00	1.90E+01
	786.27	1.19	3.29E+01		-3.17E+00	1.49E+01
	794.90	1.34	3.02E+01		-8.75E+00	1.37E+01
	796.10	2.58	1.60E+01		-2.03E+00	7.29E+00
	805.52	3.14	1.36E+01		2.09E+00	6.19E+00
	819.20	1.88	2.10E+01		2.24E+00	9.48E+00
	824.65	3.12	1.21E+01		-7.62E-01	5.42E+00
	831.50	4.12	9.45E+00		7.22E-01	4.26E+00
	876.00	2.52	1.73E+01		2.09E+00	7.87E+00
	880.50	10.40	4.50E+00		4.49E-01	2.05E+00
	883.24	9.58	4.90E+00		-3.26E-01	2.24E+00
	898.67	3.24	1.28E+01		-4.02E+00	5.76E+00
	926.00	16.80	2.46E+00		-1.05E-01	1.10E+00
	946.18	15.00	3.24E+00		3.44E-01	1.48E+00
	980.48	5.15	7.66E+00		-1.88E+00	3.40E+00
	984.20	1.62	2.27E+01		-7.82E+00	9.97E+00
	1028.70	0.57	7.19E+01		9.42E-01	3.19E+01
	1083.20	0.50	1.04E+02		3.60E+01	4.70E+01
	1352.90	1.15	4.11E+01		7.87E+00	1.81E+01
	1393.90	2.06	1.53E+01		-5.68E+00	6.23E+00
	1668.40	0.76	7.60E+01		3.11E+01	3.36E+01
	1693.80	0.69	5.82E+01		-2.65E+01	2.42E+01
PA-234M	766.36	0.29	1.36E+02	4.08E+01	1.73E+01	6.21E+01
	811.00	0.51	6.86E+01		-2.78E+01	3.06E+01
	1001.03	0.84	4.08E+01		-1.07E+01	1.77E+01
TH-234	63.29	4.84	4.91E+00	4.75E+00	2.78E+00	2.34E+00
	83.30	0.08	2.61E+02		7.17E+01	1.24E+02
	92.59	5.58	4.75E+00		4.57E+00	2.28E+00
	112.81	0.28	6.77E+01		6.40E+00	3.20E+01
U-234	53.20	0.12	1.55E+02	1.55E+02	-1.72E+01	7.24E+01
	120.90	0.03	5.93E+02		-9.88E+01	2.81E+02
U-235	109.16	1.54	1.21E+01	4.41E-01	1.24E+00	5.72E+00
	143.76	10.96	2.10E+00		1.45E-01	9.96E-01
	163.36	5.08	4.14E+00		-4.76E-01	1.95E+00
	185.71	57.20	4.41E-01		4.03E-02	2.10E-01
	194.94	0.63	3.92E+01		6.57E+00	1.86E+01
	202.11	1.08	2.05E+01		-7.56E+00	9.63E+00
	205.31	5.01	4.74E+00		-4.28E-01	2.24E+00
NP-237	57.10	0.39	4.33E+01	1.51E+00	-2.89E+01	2.02E+01
	86.48	12.40	1.51E+00		-7.49E-01	7.15E-01
	94.64	0.60	4.27E+01		3.56E+01	2.05E+01
	143.25	0.43	5.46E+01		9.49E+00	2.60E+01
NP-239	106.12	27.20	7.32E+06	7.32E+06	1.41E+04	3.45E+06
	209.75	3.42	7.66E+07		-3.70E+05	3.61E+07

Analysis Report for PBWA19JVR2

Tetra Tech, TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
NP-239	228.18	10.76	2.47E+07	7.32E+06	7.92E+05	1.16E+07
	277.60	14.38	1.86E+07		-3.17E+06	8.67E+06
	334.31	2.07	1.63E+08		3.77E+07	7.64E+07
AM-241	59.54	35.90	5.18E-01	5.18E-01	-1.55E-01	2.43E-01
CM-241	132.41	3.90	1.84E+01	1.50E+00	2.35E+00	8.76E+00
	165.01	3.40	1.99E+01		-2.04E+00	9.40E+00
	205.88	2.67	2.88E+01		8.14E-02	1.36E+01
	430.63	4.06	2.59E+01		-7.51E-01	1.20E+01
	463.27	1.23	7.26E+01		-2.13E+01	3.32E+01
	471.80	71.30	1.50E+00		2.45E-01	6.95E-01
	636.88	1.53	8.77E+01		2.22E+01	4.06E+01
AM-243	74.66	68.20	3.16E-01	3.16E-01	1.14E-01	1.50E-01

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

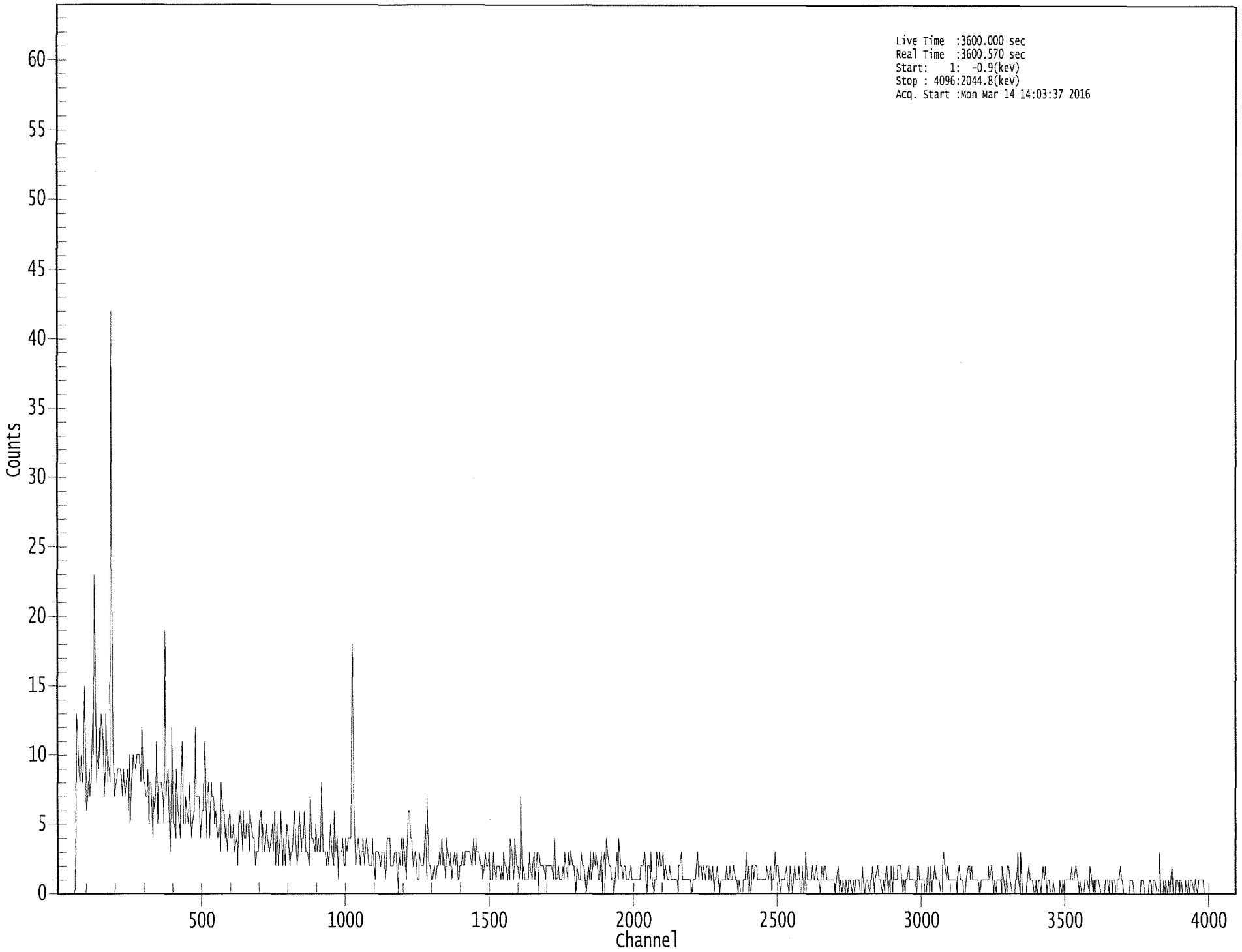
No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

0000007043.CNF



011447

Apex™

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

GAMMA SPECTRUM ANALYSIS

Sample Identification	: LCSWA19JVR2
Sample Description	: Tetra Tech TO# 160115-1
Sample Type	: Soil
Sample Size	: 2.955E+02 grams
Facility	: Default
Sample Taken On	: 9/17/2007 12:00:00PM
Acquisition Started	: 3/14/2016 12:44:34PM
Procedure	: 300g can on top 1hr
Operator	: Administrator
Detector Name	: DET01
Geometry	: 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3602.3 seconds
Dead Time	: 0.06 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 3/13/2010
Efficiency Calibration Description	:
Sample Number	: 7045

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

ENERGY CALIBRATION REPORT

Detector Name : DET01

ENERGY CALIBRATION COEFFICIENTS

Energy Calibrate Performed on : 11/30/2015 7:51:04PM
by : Administrator
Energy Calibrate Type : POLY

Energy (keV) = -1.445 + 0.500*ch + -1.06E-07*ch^2 + 0.00E+00*ch^3

SHAPE CALIBRATION COEFFICIENTS

Shape Calibrate Performed on : 11/30/2015 7:51:04PM
by : Administrator

FWHM = 0.610 + 3.62E-02 *E^1/2

LOW TAIL = 0.00E+00 + 0.00E+00*E

ENERGY CALIBRATION RESULTS TABLE

Centroid Channel	*Centroid error*	*Energy (keV)*
121.97	0.13	59.54
1326.58	0.01	661.66
2669.40	0.03	1332.50

SHAPE CALIBRATION RESULTS TABLE

Energy (keV)	*FWHM channels*	*FWHM error*	*TAIL channels*	*TAIL error*
59.54	2.12	0.24	0.00	0.00
661.66	3.08	0.02	0.00	0.00
1332.50	3.90	0.06	0.00	0.00

EFFICIENCY CALIBRATION REPORT

Detector Name : DET01
Geometry Description : 300gm Can Soil
Efficiency Calibration Performed on : 3/13/2010 7:01:11PM
by : Administrator
Efficiency Type Used : EMPIRICAL

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

Efficiency Triplets

Energy	*% Efficiency*	*Error*	*Computed*	*Error*	*% Difference*
59.50	3.52E+00	6.36E-02			
88.00	5.19E+00	1.82E-01			
122.10	5.24E+00	1.48E-01			
165.90	4.80E+00	1.13E-01			
391.70	2.50E+00	6.28E-02			
661.70	1.60E+00	4.52E-02			
898.00	1.18E+00	3.30E-02			
1173.20	9.30E-01	2.43E-02			
1332.50	8.40E-01	2.20E-02			
1836.00	6.62E-01	1.78E-02			

DUAL Efficiency Calibration Equation

Single Equation Terms

Offset :	-6.47E+01
Slope :	3.88E+01
Quadratic :	-8.85E+00
Cubic :	8.68E-01
4th Order :	-3.17E-02
5th Order :	0.00E+00
6th Order :	0.00E+00
7th Order :	0.00E+00
8th Order :	0.00E+00
9th Order :	0.00E+00

EMPIRICAL Efficiency Calibration Equation

Empirical Equation Terms

Scaling :	9.48E+02
Offset :	-4.49E+00
Slope :	8.63E-01
Quadratic :	8.03E-02
Cubic :	-1.91E-04
4th Order :	-3.17E-02
5th Order :	0.00E+00

LINEAR Efficiency Calibration Equation

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

Linear Equation Terms

Offset	-1.17E-04
Slope	-2.14E+00
Quadratic	3.33E+02
Cubic	-4.80E+04
4th Order	3.10E+06
5th Order	-7.58E+07
6th Order	0.00E+00
7th Order	0.00E+00
8th Order	0.00E+00
9th Order	0.00E+00

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

PEAK LOCATE REPORT

Peak Locate Performed on : 3/30/2016 1:45:16PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 4.30

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	59.60	122.10	0.3294	6.56
2	63.24	129.37	0.3765	4.45
3	74.89	152.57	0.2712	7.78
4	77.13	157.32	0.2462	11.22
5	87.26	177.41	0.3183	5.78
6	186.19	375.31	0.2707	6.52
7	238.79	480.47	0.2073	12.34
8	242.06	487.21	0.2554	8.14
9	295.34	593.66	0.1943	13.77
10	338.59	680.16	0.3264	4.32
11	352.07	707.15	0.1519	20.66
12	583.55	1170.27	0.2482	7.41
13	605.06	1213.38	0.2645	5.87
14	609.62	1222.44	0.1536	17.36
15	661.97	1327.20	0.1162	31.21
16	796.29	1596.02	0.2428	7.17
17	911.66	1826.92	0.2342	7.52
18	969.44	1942.58	0.2724	4.72
19	1120.87	2245.70	0.2243	6.97
20	1173.80	2351.66	0.1479	15.88
21	1333.18	2670.76	0.1491	14.79
22	1461.49	2927.69	0.1787	9.32
23	1765.07	3535.68	0.2171	6.43

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

? = Adjacent peak noted
Errors quoted at 1.000 sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 3/30/2016 1:45:16PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	59.60	114 -	125	122.10	3.75E+02	46.91	1.14E+03	1.07
	2	63.24	127 -	132	129.37	3.01E+01	31.04	7.18E+02	0.86
M	3	74.89	145 -	164	152.67	6.96E+02	33.37	6.76E+02	1.09
m	4	77.13	145 -	164	157.16	1.12E+03	39.72	7.47E+02	1.09
	5	87.26	175 -	184	177.41	2.76E+02	42.32	1.01E+03	1.08
	6	186.19	368 -	378	375.31	3.96E+02	37.53	6.53E+02	1.45
M	7	238.79	476 -	492	480.52	7.89E+02	32.73	4.11E+02	1.20
m	8	242.06	476 -	492	487.06	4.03E+02	25.03	3.45E+02	1.20
	9	295.34	587 -	599	593.66	7.91E+02	40.05	4.93E+02	1.23
	10	338.59	671 -	685	680.16	1.49E+02	30.60	4.50E+02	1.45
	11	352.07	702 -	712	707.15	1.40E+03	43.47	3.16E+02	1.38
	12	583.55	1164 -	1177	1170.27	2.05E+02	22.97	1.90E+02	1.51
M	13	605.06	1204 -	1230	1213.33	1.93E+02	15.83	1.08E+02	1.44
m	14	609.62	1204 -	1230	1222.44	1.01E+03	33.63	1.05E+02	1.44
	15	661.97	1321 -	1339	1327.20	2.98E+03	57.75	1.81E+02	1.52
	16	796.29	1589 -	1600	1596.02	1.25E+02	17.22	1.07E+02	1.54
	17	911.66	1823 -	1831	1826.92	1.15E+02	15.81	9.32E+01	0.95
	18	969.44	1939 -	1949	1942.58	8.55E+01	15.73	1.05E+02	1.91
	19	1120.87	2238 -	2250	2245.70	2.03E+02	18.53	8.52E+01	1.79
	20	1173.80	2345 -	2358	2351.66	7.99E+02	30.38	7.28E+01	1.81
	21	1333.18	2661 -	2678	2670.76	7.55E+02	28.83	4.05E+01	1.99
	22	1461.49	2918 -	2934	2927.69	3.76E+02	20.73	2.89E+01	2.25
	23	1765.07	3529 -	3543	3535.68	1.64E+02	13.29	7.50E+00	1.84

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 3/30/2016 1:45:16PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	59.60	114 -	125	3.75E+02	46.91	1.14E+03	7.03E+01
	2	63.24	127 -	132	3.01E+01	31.04	7.18E+02	5.03E+01
M	3	74.89	145 -	164	6.96E+02	33.37	6.76E+02	6.05E+01
m	4	77.13	145 -	164	1.12E+03	39.72	7.47E+02	6.36E+01
	5	87.26	175 -	184	2.76E+02	42.32	1.01E+03	6.40E+01
	6	186.19	368 -	378	3.96E+02	37.53	6.53E+02	5.24E+01
M	7	238.79	476 -	492	7.89E+02	32.73	4.11E+02	4.71E+01
m	8	242.06	476 -	492	4.03E+02	25.03	3.45E+02	4.32E+01
	9	295.34	587 -	599	7.91E+02	40.05	4.93E+02	4.69E+01
	10	338.59	671 -	685	1.49E+02	30.60	4.50E+02	4.62E+01
	11	352.07	702 -	712	1.40E+03	43.47	3.16E+02	3.64E+01
	12	583.55	1164 -	1177	2.05E+02	22.97	1.90E+02	2.95E+01
M	13	605.06	1204 -	1230	1.93E+02	15.83	1.08E+02	2.42E+01
m	14	609.62	1204 -	1230	1.01E+03	33.63	1.05E+02	2.38E+01
	15	661.97	1321 -	1339	2.98E+03	57.75	1.81E+02	3.09E+01
	16	796.29	1589 -	1600	1.25E+02	17.22	1.07E+02	2.16E+01
	17	911.66	1823 -	1831	1.15E+02	15.81	9.32E+01	1.91E+01
	18	969.44	1939 -	1949	8.55E+01	15.73	1.05E+02	2.09E+01
	19	1120.87	2238 -	2250	2.03E+02	18.53	8.52E+01	1.95E+01
	20	1173.80	2345 -	2358	7.99E+02	30.38	7.28E+01	1.83E+01
	21	1333.18	2661 -	2678	7.55E+02	28.83	4.05E+01	1.44E+01
	22	1461.49	2918 -	2934	3.76E+02	20.73	2.89E+01	1.20E+01
	23	1765.07	3529 -	3543	1.64E+02	13.29	7.50E+00	5.96E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 3/30/2016 1:45:16PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB
Peak Match Tolerance : 1.000 keV

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	59.60	114 -	125	122.10	3.75E+02	46.91	1.14E+03	AM-241 EU-155
	2	63.24	127 -	132	129.37	3.01E+01	31.04	7.18E+02	TH-234 PA-234 TH-232
M	3	74.89	145 -	164	152.67	6.96E+02	33.37	6.76E+02	TH-229 AM-243

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
									PA-233
m	4	77.13	145 -	164	157.16	1.12E+03	39.72	7.47E+02	.....
	5	87.26	175 -	184	177.41	2.76E+02	42.32	1.01E+03	PA-233
									EU-155
									CD-109
									NP-237
									CS-136
									TH-229
	6	186.19	368 -	378	375.31	3.96E+02	37.53	6.53E+02	PA-234
									RA-226
									U-235
M	7	238.79	476 -	492	480.52	7.89E+02	32.73	4.11E+02	PB-212
m	8	242.06	476 -	492	487.06	4.03E+02	25.03	3.45E+02	PB-214
	9	295.34	587 -	599	593.66	7.91E+02	40.05	4.93E+02	PB-214
									EU-152
									IR-192
	10	338.59	671 -	685	680.16	1.49E+02	30.60	4.50E+02	AC-228
									RA-223
	11	352.07	702 -	712	707.15	1.40E+03	43.47	3.16E+02	PB-214
	12	583.55	1164 -	1177	1170.27	2.05E+02	22.97	1.90E+02	TL-208
M	13	605.06	1204 -	1230	1213.33	1.93E+02	15.83	1.08E+02	CS-134
									IR-192
m	14	609.62	1204 -	1230	1222.44	1.01E+03	33.63	1.05E+02	BI-214
									RU-103
	15	661.97	1321 -	1339	1327.20	2.98E+03	57.75	1.81E+02	CS-137
	16	796.29	1589 -	1600	1596.02	1.25E+02	17.22	1.07E+02	PA-234
									CS-134
	17	911.66	1823 -	1831	1826.92	1.15E+02	15.81	9.32E+01	AC-228
	18	969.44	1939 -	1949	1942.58	8.55E+01	15.73	1.05E+02	AC-228
	19	1120.87	2238 -	2250	2245.70	2.03E+02	18.53	8.52E+01	BI-214
	20	1173.80	2345 -	2358	2351.66	7.99E+02	30.38	7.28E+01	CO-60
	21	1333.18	2661 -	2678	2670.76	7.55E+02	28.83	4.05E+01	CO-60
	22	1461.49	2918 -	2934	2927.69	3.76E+02	20.73	2.89E+01	K-40
	23	1765.07	3529 -	3543	3535.68	1.64E+02	13.29	7.50E+00	BI-214

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 3/30/2016 1:45:16PM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	59.60	3.75E+02	46.91	3.54E-02	6.54E-04

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	2	63.24	3.01E+01	31.04	3.82E-02	8.96E-04
M	3	74.89	6.96E+02	33.37	4.53E-02	1.67E-03
m	4	77.13	1.12E+03	39.72	4.63E-02	1.82E-03
	5	87.26	2.76E+02	42.32	4.99E-02	2.49E-03
	6	186.19	3.96E+02	37.53	4.54E-02	1.12E-03
M	7	238.79	7.89E+02	32.73	3.85E-02	1.00E-03
m	8	242.06	4.03E+02	25.03	3.81E-02	9.95E-04
	9	295.34	7.91E+02	40.05	3.24E-02	8.80E-04
	10	338.59	1.49E+02	30.60	2.88E-02	7.86E-04
	11	352.07	1.40E+03	43.47	2.78E-02	7.56E-04
	12	583.55	2.05E+02	22.97	1.74E-02	6.85E-04
M	13	605.06	1.93E+02	15.83	1.69E-02	6.87E-04
m	14	609.62	1.01E+03	33.63	1.67E-02	6.87E-04
	15	661.97	2.98E+03	57.75	1.55E-02	6.91E-04
	16	796.29	1.25E+02	17.22	1.31E-02	4.88E-04
	17	911.66	1.15E+02	15.81	1.17E-02	3.30E-04
	18	969.44	8.55E+01	15.73	1.11E-02	3.17E-04
	19	1120.87	2.03E+02	18.53	9.78E-03	2.82E-04
	20	1173.80	7.99E+02	30.38	9.41E-03	2.69E-04
	21	1333.18	7.55E+02	28.83	8.48E-03	2.32E-04
	22	1461.49	3.76E+02	20.73	7.87E-03	2.21E-04
	23	1765.07	1.64E+02	13.29	6.77E-03	1.94E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 3/30/2016 1:45:16PM

Env. Background File : \\NHHJ-6\ApexRoot\Default\Data\0000006791.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	59.60	3.75E+02	46.91			3.75E+02	4.69E+01
	2	63.24	3.01E+01	31.04	4.82E+01	3.05E+00	-1.81E+01	3.12E+01
M	3	74.89	6.96E+02	33.37			6.96E+02	3.34E+01
m	4	77.13	1.12E+03	39.72			1.12E+03	3.97E+01
	5	87.26	2.76E+02	42.32			2.76E+02	4.23E+01
	6	186.19	3.96E+02	37.53	2.96E+01	3.21E+00	3.66E+02	3.77E+01
M	7	238.79	7.89E+02	32.73	2.21E+01	3.62E+00	7.67E+02	3.29E+01
m	8	242.06	4.03E+02	25.03			4.03E+02	2.50E+01
	9	295.34	7.91E+02	40.05			7.91E+02	4.01E+01
	10	338.59	1.49E+02	30.60			1.49E+02	3.06E+01
	11	352.07	1.40E+03	43.47			1.40E+03	4.35E+01
	12	583.55	2.05E+02	22.97			2.05E+02	2.30E+01
M	13	605.06	1.93E+02	15.83			1.93E+02	1.58E+01

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
m	14	609.62	1.01E+03	33.63			1.01E+03	3.36E+01
	15	661.97	2.98E+03	57.75			2.98E+03	5.78E+01
	16	796.29	1.25E+02	17.22			1.25E+02	1.72E+01
	17	911.66	1.15E+02	15.81			1.15E+02	1.58E+01
	18	969.44	8.55E+01	15.73			8.55E+01	1.57E+01
	19	1120.87	2.03E+02	18.53			2.03E+02	1.85E+01
	20	1173.80	7.99E+02	30.38			7.99E+02	3.04E+01
	21	1333.18	7.55E+02	28.83			7.55E+02	2.88E+01
	22	1461.49	3.76E+02	20.73			3.76E+02	2.07E+01
	23	1765.07	1.64E+02	13.29			1.64E+02	1.33E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 3/30/2016 1:45:16PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\NHHJ-6\ApexRoot\Default\Data\0000006791.CNF

Corrected Area is: Original * Peak Ratio - Background

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	59.60	3.75E+02	46.91			3.75E+02	4.69E+01
	2	63.24	3.01E+01	31.04	4.82E+01	3.05E+00	-1.81E+01	3.12E+01
M	3	74.89	6.96E+02	33.37			6.96E+02	3.34E+01
m	4	77.13	1.12E+03	39.72			1.12E+03	3.97E+01
	5	87.26	2.76E+02	42.32			2.76E+02	4.23E+01
	6	186.19	3.96E+02	37.53	2.96E+01	3.21E+00	3.66E+02	3.77E+01
M	7	238.79	7.89E+02	32.73	2.21E+01	3.62E+00	7.67E+02	3.29E+01
m	8	242.06	4.03E+02	25.03			4.03E+02	2.50E+01
	9	295.34	7.91E+02	40.05			7.91E+02	4.01E+01
	10	338.59	1.49E+02	30.60			1.49E+02	3.06E+01
	11	352.07	1.40E+03	43.47			1.40E+03	4.35E+01
	12	583.55	2.05E+02	22.97			2.05E+02	2.30E+01
M	13	605.06	1.93E+02	15.83			1.93E+02	1.58E+01
m	14	609.62	1.01E+03	33.63			1.01E+03	3.36E+01
	15	661.97	2.98E+03	57.75			2.98E+03	5.78E+01
	16	796.29	1.25E+02	17.22			1.25E+02	1.72E+01
	17	911.66	1.15E+02	15.81			1.15E+02	1.58E+01
	18	969.44	8.55E+01	15.73			8.55E+01	1.57E+01
	19	1120.87	2.03E+02	18.53			2.03E+02	1.85E+01
	20	1173.80	7.99E+02	30.38			7.99E+02	3.04E+01

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
21	1333.18	7.55E+02	28.83			7.55E+02	2.88E+01
22	1461.49	3.76E+02	20.73			3.76E+02	2.07E+01
23	1765.07	1.64E+02	13.29			1.64E+02	1.33E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.932	1460.83	*	10.67	1.14E+01	7.17E-01
CO-60	0.928	1173.24	*	99.90	6.60E+00	3.14E-01
		1332.50	*	99.98	6.91E+00	3.25E-01
CD-109	0.725	88.03	*	3.61	4.05E+02	6.69E+01
CS-134	0.899	475.35		1.47		
		563.23		8.38		
		569.32		15.43		
		604.70	*	97.56	5.20E+00	4.77E-01
		795.84	*	85.44	4.91E+00	7.04E-01
		801.93		8.73		
		1038.57		1.00		
		1167.94		1.80		
		1365.15		3.04		
CS-137	0.985	661.66	*	85.10	6.98E+00	3.39E-01
TL-208	0.987	277.36		6.31		
		510.77		22.60		
		583.19	*	84.50	3.54E-01	4.21E-02
		763.13		1.81		
		860.56		12.42		
PB-212	0.996	115.18		0.59		
		238.63	*	43.30	1.17E+00	5.95E-02
		300.09		3.28		
BI-214	0.834	609.31	*	44.80	3.43E+00	1.85E-01
		665.45		1.29		
		768.36		4.80		
		806.17		1.22		
		934.06		3.03		
		1120.29	*	14.80	3.56E+00	3.44E-01
		1155.19		1.64		
		1207.68		0.49		

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.834	1238.11		5.86		
		1280.96		1.44		
		1377.67		3.92		
		1385.31		0.89		
		1401.50		1.55		
		1407.98		2.80		
		1415.80		0.48		
		1509.23		2.12		
		1583.22		0.70		
		1661.28		1.14		
		1729.59		2.88		
		1764.49	*	15.36	3.99E+00	3.48E-01
		1847.42		2.04		
PB-214	0.997	53.23		1.11		
		241.98	*	7.50	3.59E+00	2.46E-01
		258.79		0.55		
		295.21	*	18.50	3.35E+00	2.00E-01
		351.92	*	35.80	3.57E+00	1.56E-01
		785.91		0.85		
		839.03		0.63		
RA-226	0.999	186.10	*	3.50	5.85E+00	6.24E-01
AC-228	0.984	99.50		1.28		
		129.07		2.45		
		153.98		0.74		
		209.25		3.88		
		270.24		3.43		
		327.90		3.06		
		332.37		0.40		
		338.32	*	11.25	1.17E+00	2.44E-01
		409.46		1.94		
		463.01		4.44		
		508.96		0.47		
		562.50		0.87		
		755.32		1.00		
		772.29		1.50		
		782.14		0.50		
		794.95		4.34		
		830.49		0.55		
		835.71		1.68		
		840.38		0.94		
		904.20		0.78		
		911.21	*	26.60	9.41E-01	1.34E-01
		964.77		5.11		
		968.97	*	16.20	1.21E+00	2.27E-01
		1247.08		0.50		
		1459.14		0.80		
		1495.91		0.89		
		1580.54		0.61		
		1588.21		3.27		
		1630.63		1.60		
TH-232	0.949	63.81	*	0.27	-4.46E+00	7.69E+00
TH-234	1.000	63.29	*	4.84	-2.49E-01	4.30E-01
		83.30		0.08		

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
TH-234	1.000	92.59		5.58		
		112.81		0.28		
U-235	0.975	109.16		1.54		
		143.76		10.96		
		163.36		5.08		
		185.71	*	57.20	3.58E-01	3.80E-02
		194.94		0.63		
		202.11		1.08		
		205.31		5.01		
NP-237	0.916	57.10		0.39		
		86.48	*	12.40	1.13E+00	1.86E-01
		94.64		0.60		
		143.25		0.43		
AM-241	0.999	59.54	*	35.90	7.62E-01	9.65E-02
AM-243	0.992	74.66	*	68.20	5.73E-01	3.66E-02

* = Energy line found in the spectrum.
- = Manually added nuclide.
? = Manually edited nuclide.
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 3/30/2016 1:45:16PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m 4	77.13	3.10864E-01	3.55		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

IDENTIFIED NUCLIDES

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.93	1460.83	*	10.67	1.14E+01	7.17E-01
CO-60	0.92	1173.24	*	99.90	6.60E+00	3.14E-01
		1332.50	*	99.98	6.91E+00	3.25E-01
CD-109	0.72	88.03	*	3.61	4.05E+02	6.69E+01
CS-134	0.89	475.35	@	1.47		
		563.23	@	8.38		
		569.32	@	15.43		
		604.70	*	97.56	5.20E+00	4.77E-01
		795.84	*	85.44	4.91E+00	7.04E-01
		801.93	@	8.73		
		1038.57	@	1.00		
		1167.94	@	1.80		
		1365.15	@	3.04		
CS-137	0.98	661.66	*	85.10	6.98E+00	3.39E-01
TL-208	0.98	277.36		6.31		
		510.77		22.60		
		583.19	*	84.50	3.54E-01	4.21E-02
		763.13		1.81		
		860.56		12.42		
PB-212	0.99	115.18		0.59		
		238.63	*	43.30	1.17E+00	5.95E-02
		300.09		3.28		
BI-214	0.83	609.31	*	44.80	3.43E+00	1.85E-01
		665.45		1.29		
		768.36		4.80		
		806.17		1.22		
		934.06		3.03		
		1120.29	*	14.80	3.56E+00	3.44E-01
		1155.19		1.64		
		1207.68		0.49		
		1238.11		5.86		
		1280.96		1.44		
		1377.67		3.92		
		1385.31		0.89		
		1401.50		1.55		
		1407.98		2.80		
		1415.80		0.48		
		1509.23		2.12		
		1583.22		0.70		
		1661.28		1.14		
		1729.59		2.88		
		1764.49	*	15.36	3.99E+00	3.48E-01
		1847.42		2.04		
PB-214	0.99	53.23		1.11		
		241.98	*	7.50	3.59E+00	2.46E-01
		258.79		0.55		
		295.21	*	18.50	3.35E+00	2.00E-01
		351.92	*	35.80	3.57E+00	1.56E-01
		785.91		0.85		
		839.03		0.63		
RA-226	0.99	186.10	*	3.50	5.85E+00	6.24E-01
AC-228	0.98	99.50		1.28		
		129.07		2.45		

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
AC-228	0.98	153.98		0.74		
		209.25		3.88		
		270.24		3.43		
		327.90		3.06		
		332.37		0.40		
		338.32	*	11.25	1.17E+00	2.44E-01
		409.46		1.94		
		463.01		4.44		
		508.96		0.47		
		562.50		0.87		
		755.32		1.00		
		772.29		1.50		
		782.14		0.50		
		794.95		4.34		
		830.49		0.55		
		835.71		1.68		
		840.38		0.94		
		904.20		0.78		
		911.21	*	26.60	9.41E-01	1.34E-01
		964.77		5.11		
		968.97	*	16.20	1.21E+00	2.27E-01
		1247.08		0.50		
		1459.14		0.80		
		1495.91		0.89		
		1580.54		0.61		
		1588.21		3.27		
		1630.63		1.60		
TH-232	0.94	63.81	*	0.27	-4.46E+00	7.69E+00
TH-234	1.00	63.29	*	4.84	-2.49E-01	4.30E-01
		83.30		0.08		
		92.59		5.58		
		112.81		0.28		
U-235	0.97	109.16		1.54		
		143.76		10.96		
		163.36		5.08		
		185.71	*	57.20	3.58E-01	3.80E-02
		194.94		0.63		
		202.11		1.08		
		205.31		5.01		
NP-237	0.91	57.10		0.39		
		86.48	*	12.40	1.13E+00	1.86E-01
		94.64		0.60		
		143.25		0.43		
AM-241	0.99	59.54	*	35.90	7.62E-01	9.65E-02
AM-243	0.99	74.66	*	68.20	5.73E-01	3.66E-02

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 1.000 sigma

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

	Nuclide Name		Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40		0.932	1.14E+01	7.17E-01	
	CO-60		0.928	6.75E+00	2.26E-01	
?	CD-109		0.725	4.05E+02	6.69E+01	
	CS-134	@	0.899	5.11E+00	3.96E-01	
	CS-137		0.985	6.98E+00	3.39E-01	
	TL-208		0.987	3.54E-01	4.21E-02	
	PB-212		0.996	1.17E+00	5.95E-02	
	BI-214		0.834	3.55E+00	1.48E-01	
	PB-214		0.997	3.51E+00	1.10E-01	
?	RA-226		0.999	5.85E+00	6.24E-01	
	AC-228		0.984	1.04E+00	1.05E-01	
?	TH-232		0.949	-4.46E+00	7.69E+00	
X	PA-234		1.000			
?	TH-234		1.000	-2.49E-01	4.30E-01	
?	U-235		0.975	3.58E-01	3.80E-02	
?	NP-237		0.916	1.13E+00	1.86E-01	
	AM-241		0.999	7.62E-01	9.65E-02	
	AM-243		0.992	5.73E-01	3.66E-02	

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 3/30/2016 1:45:16PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	4	77.13	3.10864E-01	3.55		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BE-7	477.60		10.42	3.44E+15	5.36E+17	5.36E+17
	NA-22	1274.53		99.94	-2.43E-01	1.67E+00	1.67E+00
@	NA-24	1368.63		100.00	1.00E+26	1.00E+26	1.00E+26
> @		2754.03		99.94	0.00E+00		0.00E+00
+	K-40	1460.83	*	10.67	1.14E+01	1.12E+00	1.12E+00
@	AR-41	1293.59		99.10	1.00E+26	1.00E+26	1.00E+26
@	CR-51	320.08		9.86	1.00E+26	1.00E+26	1.00E+26
	MN-54	834.85		99.98	-2.84E+01	1.81E+02	1.81E+02
	CO-56	846.77		99.93	3.36E+10	1.93E+11	2.30E+11
		977.37		1.44	-2.27E+13		1.66E+13
		1037.84		13.99	1.49E+11		1.76E+12
		1175.10		2.28	1.13E+14		2.89E+13
		1238.28		67.56	3.03E+11		4.33E+11
		1360.21		4.33	1.25E+12		4.43E+12
		1771.35		15.69	-3.94E+12		2.48E+12
		2015.18		3.08	0.00E+00		4.90E+11
		2034.76		7.89	0.00E+00		1.93E+11
@	MN-56	846.75		98.87	1.00E+26	1.00E+26	1.00E+26
@		1810.72		27.19	1.00E+26		1.00E+26
> @		2113.05		14.34	0.00E+00		0.00E+00
	CO-57	122.06		85.60	-8.19E+01	2.92E+02	2.92E+02
		136.47		10.68	-9.94E+02		2.43E+03
		692.41		0.16	-3.25E+04		2.55E+05
	CO-58	810.78		99.45	-1.09E+12	2.59E+12	2.59E+12
		863.96		0.68	9.61E+13		4.34E+14
		1674.73		0.52	-1.42E+14		3.18E+14
@	FE-59	142.65		1.02	1.00E+26	1.00E+26	1.00E+26
@		192.35		3.08	1.00E+26		1.00E+26
@		1099.25		56.50	1.00E+26		1.00E+26
@		1291.60		43.20	1.00E+26		1.00E+26
+	CO-60	1173.24	*	99.90	6.60E+00	4.01E-01	4.52E-01
		1332.50	*	99.98	6.91E+00		4.01E-01
@	CU-64	1345.77		0.47	1.00E+26	1.00E+26	1.00E+26
	ZN-65	1115.55		50.60	-3.97E+03	4.32E+03	4.32E+03

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
SE-75	66.05	1.12	-3.85E+07	1.02E+07	7.47E+08
	96.73	3.42	-1.67E+08		1.58E+08
	121.12	17.14	-1.33E+07		3.30E+07
	136.00	58.27	-2.42E+06		1.02E+07
	198.61	1.47	2.26E+07		4.45E+08
	264.66	58.50	-5.91E+06		1.12E+07
	279.54	24.79	1.03E+06		3.00E+07
	303.93	1.31	-2.00E+09		5.87E+08
	400.66	11.37	-6.91E+06		8.11E+07
RB-83	520.39	44.70	-2.80E+10	2.34E+10	2.34E+10
	529.59	29.30	3.04E+09		3.55E+10
	552.59	15.96	1.26E+09		6.52E+10
@ BR-84	881.60	42.00	1.00E+26	1.00E+26	1.00E+26
@	1897.60	14.90	1.00E+26		1.00E+26
KR-85	514.01	0.43	7.25E+01	7.72E+01	7.72E+01
@ KR-85M	151.20	75.00	1.00E+26	1.00E+26	1.00E+26
@	304.87	14.00	1.00E+26		1.00E+26
SR-85	514.01	95.70	4.71E+13	5.01E+13	5.01E+13
@ SR-85m	151.19	12.90	1.00E+26	1.00E+26	1.00E+26
@	231.86	84.40	1.00E+26		1.00E+26
@ RB-86	1077.00	8.64	1.00E+26	1.00E+26	1.00E+26
@ KR-87	402.59	49.60	1.00E+26	1.00E+26	1.00E+26
@	673.83	1.89	1.00E+26		1.00E+26
@	845.44	7.30	1.00E+26		1.00E+26
@	1175.40	1.11	1.00E+26		1.00E+26
@	1740.52	2.04	1.00E+26		1.00E+26
@ KR-88	165.98	3.10	1.00E+26	1.00E+26	1.00E+26
@	196.30	26.00	1.00E+26		1.00E+26
@	362.23	2.25	1.00E+26		1.00E+26
@	834.83	13.00	1.00E+26		1.00E+26
@	985.78	1.52	1.00E+26		1.00E+26
@	1141.33	1.28	1.00E+26		1.00E+26
@	1179.51	1.00	1.00E+26		1.00E+26
@	1250.67	1.12	1.00E+26		1.00E+26
@	1369.50	1.48	1.00E+26		1.00E+26
@	1518.39	2.15	1.00E+26		1.00E+26
@	1529.77	10.90	1.00E+26		1.00E+26
@ RB-88	898.03	14.04	1.00E+26	1.00E+26	1.00E+26
@	1836.01	21.40	1.00E+26		1.00E+26
Y-88	898.04	93.68	-3.65E+07	8.75E+07	1.23E+08
	1836.06	99.24	-5.00E+07		8.75E+07
NB-94x	702.62	97.90	-3.27E-03	1.58E-01	1.58E-01
	871.09	99.90	-3.93E-02		1.98E-01
@ NB-95	765.81	99.81	1.00E+26	1.00E+26	1.00E+26
@ NB-95m	204.12	2.33	1.00E+26	1.00E+26	1.00E+26
@	235.69	24.80	1.00E+26		1.00E+26
ZR-95	724.20	44.17	8.97E+13	1.21E+14	1.60E+14
	756.73	54.46	3.12E+13		1.21E+14
@ NB-96	460.04	26.62	1.00E+26	1.00E+26	1.00E+26
@	568.87	57.97	1.00E+26		1.00E+26
@	778.22	96.45	1.00E+26		1.00E+26
@	849.93	20.40	1.00E+26		1.00E+26

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
@	NB-96	1200.23		19.96	1.00E+26	1.00E+26	1.00E+26
@	MO-99	140.51		4.52	1.00E+26	1.00E+26	1.00E+26
@		181.06		6.08	1.00E+26		1.00E+26
@		366.42		1.20	1.00E+26		1.00E+26
@		739.50		12.13	1.00E+26		1.00E+26
@		777.92		4.28	1.00E+26		1.00E+26
@	TC-99M	140.51		89.06	1.00E+26	1.00E+26	1.00E+26
@	RU-103	443.80		3.27	1.00E+26	1.00E+26	1.00E+26
@		497.08		90.90	1.00E+26		1.00E+26
@		610.33		5.75	1.00E+26		1.00E+26
	RHRU-106	621.93		9.93	1.46E+02	5.06E+02	5.06E+02
		1050.41		1.56	2.01E+03		4.47E+03
	AG-108M	433.94		90.50	-2.36E-02	1.71E-01	1.71E-01
		614.28		89.90	-8.34E-01		3.69E-01
		722.94		90.90	7.32E-03		1.93E-01
+	CD-109	88.03	*	3.61	4.05E+02	2.71E+02	2.71E+02
	AG-110M	116.48		1.36	-4.57E+03	1.57E+03	3.67E+04
		446.81		3.72	-1.03E+03		2.34E+04
		620.36		2.79	-5.43E+04		3.02E+04
		657.76		94.00	-1.67E+04		2.74E+03
		677.62		10.28	-2.95E+03		7.49E+03
		687.02		6.39	1.82E+03		1.30E+04
		706.68		16.32	2.98E+03		5.44E+03
		744.28		4.70	-1.50E+03		1.83E+04
		763.94		22.14	-1.84E+01		4.60E+03
		818.03		7.29	-3.18E+03		1.26E+04
		884.68		72.19	7.38E+01		1.57E+03
		937.49		34.13	1.72E+03		3.90E+03
		1384.30		24.12	1.87E+03		4.76E+03
		1475.79		3.97	4.03E+03		2.19E+04
		1505.04		12.95	1.55E+03		8.19E+03
		1562.30		1.02	4.38E+03		8.41E+04
	SN-113	255.06		1.82	-2.54E+08	2.89E+07	7.38E+08
		391.69		64.00	4.22E+06		2.89E+07
	IN-114	190.27		15.40	-6.23E+18	5.03E+18	5.03E+18
		558.43		4.40	-6.11E+18		2.49E+19
		725.24		4.40	1.70E+19		3.05E+19
@	SB-122	564.24		69.30	1.00E+26	1.00E+26	1.00E+26
@	I-124	602.72		60.50	1.00E+26	1.00E+26	1.00E+26
@		722.78		9.98	1.00E+26		1.00E+26
@		1509.49		2.99	1.00E+26		1.00E+26
@		1691.02		10.40	1.00E+26		1.00E+26
	SB-124	602.73		97.80	-1.79E+14	7.03E+14	7.03E+14
		645.85		7.38	-2.53E+15		6.11E+15
		709.32		1.35	-1.22E+15		3.67E+16
		713.78		2.27	-5.25E+15		2.18E+16
		722.79		10.76	-9.40E+14		5.03E+15
		968.20		1.89	6.38E+16		4.76E+16
		1045.13		1.84	5.58E+15		3.75E+16
		1325.51		1.62	-1.78E+17		3.70E+16
		1355.18		1.04	-1.31E+16		4.47E+16
		1368.16		2.62	-1.94E+16		1.89E+16

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-124	1436.56		1.23	-9.56E+15	7.03E+14	3.29E+16
		1690.98		47.30	8.50E+13		9.76E+14
	I-125	30.98		20.10	1.12E+15	9.81E+15	9.81E+15
		35.49		6.68	2.22E+16		2.52E+16
	SB-125	176.31		6.82	4.34E+00	4.33E+00	1.25E+01
		380.45		1.52	-8.16E+00		7.41E+01
		427.88		29.60	-9.65E-01		4.33E+00
		463.36		10.49	4.00E+00		1.39E+01
		600.60		17.86	-3.25E+00		9.12E+00
		606.72		5.03	3.09E+02		6.43E+01
		635.95		11.31	3.31E+00		1.18E+01
		671.45		1.80	-7.07E+01		6.68E+01
	@ XE-125	188.42		54.00	1.00E+26	1.00E+26	1.00E+26
	@	243.38		30.10	1.00E+26		1.00E+26
	@ I-126	388.63		34.10	1.00E+26	1.00E+26	1.00E+26
	@ SB-126	414.80		83.30	1.00E+26	1.00E+26	1.00E+26
	@	666.30		99.60	1.00E+26		1.00E+26
	@	695.00		99.60	1.00E+26		1.00E+26
	@	697.00		28.90	1.00E+26		1.00E+26
	@	720.50		53.80	1.00E+26		1.00E+26
	@	856.70		17.60	1.00E+26		1.00E+26
	I-129	39.58		7.45	-1.70E+00	3.17E+00	3.17E+00
	@ I-130	418.01		34.15	1.00E+26	1.00E+26	1.00E+26
	@	536.09		99.00	1.00E+26		1.00E+26
	@	668.54		96.10	1.00E+26		1.00E+26
	@	739.48		82.30	1.00E+26		1.00E+26
	@	1157.47		11.30	1.00E+26		1.00E+26
	@ I-131	284.30		6.14	1.00E+26	1.00E+26	1.00E+26
	@	364.49		81.70	1.00E+26		1.00E+26
	@	636.99		7.17	1.00E+26		1.00E+26
	@	722.91		1.77	1.00E+26		1.00E+26
	@ XE-131M	163.93		1.91	1.00E+26	1.00E+26	1.00E+26
	@ TE-132	111.76		1.74	1.00E+26	1.00E+26	1.00E+26
	@	116.30		1.96	1.00E+26		1.00E+26
	@	228.16		88.00	1.00E+26		1.00E+26
	BA-133	53.16		2.20	-1.69E+01	5.17E-01	1.19E+01
		79.62		2.62	-4.37E+00		8.36E+00
		81.00		34.06	-8.68E-01		5.17E-01
		160.61		0.64	-5.47E+00		2.61E+01
		223.23		0.45	1.35E+01		4.31E+01
		276.40		7.16	-1.03E+00		2.85E+00
		302.85		18.33	-4.32E+00		1.20E+00
		356.02		62.05	-1.87E+00		5.30E-01
		383.85		8.94	-1.43E+00		2.59E+00
	@ I-133	529.87		87.00	1.00E+26	1.00E+26	1.00E+26
	@	875.33		4.51	1.00E+26		1.00E+26
+	CS-134	475.35		1.47	-1.24E+01	1.92E+00	1.90E+02
		563.23		8.38	3.63E+00		3.35E+01
		569.32		15.43	-3.05E-01		1.83E+01
		604.70	*	97.56	5.20E+00		1.92E+00
		795.84	*	85.44	4.91E+00		2.52E+00
		801.93		8.73	-3.37E+01		3.99E+01

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CS-134	1038.57		1.00	5.73E+00	1.92E+00	3.57E+02
		1167.94		1.80	-1.77E+03		3.89E+02
		1365.15		3.04	1.18E+01		8.90E+01
@	I-134	405.45		7.35	1.00E+26	1.00E+26	1.00E+26
@		540.83		7.60	1.00E+26		1.00E+26
@		595.36		11.20	1.00E+26		1.00E+26
@		621.79		10.60	1.00E+26		1.00E+26
@		677.34		7.80	1.00E+26		1.00E+26
@		847.03		95.40	1.00E+26		1.00E+26
@		884.09		64.90	1.00E+26		1.00E+26
@		1072.55		15.00	1.00E+26		1.00E+26
@		1136.16		9.20	1.00E+26		1.00E+26
	CS-135	787.20		100.00	-1.71E-01	1.91E-01	1.91E-01
		846.10		95.90	2.22E-02		1.99E-01
@	I-135	417.63		3.55	1.00E+26	1.00E+26	1.00E+26
@		546.56		7.20	1.00E+26		1.00E+26
@		836.80		6.73	1.00E+26		1.00E+26
@		1038.76		8.00	1.00E+26		1.00E+26
@		1124.00		3.64	1.00E+26		1.00E+26
@		1131.51		22.74	1.00E+26		1.00E+26
@		1260.41		28.90	1.00E+26		1.00E+26
@		1457.56		8.73	1.00E+26		1.00E+26
@		1678.03		9.62	1.00E+26		1.00E+26
@		1706.46		4.13	1.00E+26		1.00E+26
@		1791.20		7.77	1.00E+26		1.00E+26
@	XE-135	249.79		90.20	1.00E+26	1.00E+26	1.00E+26
@		608.18		2.90	1.00E+26		1.00E+26
@	XE-135M	526.56		80.50	1.00E+26	1.00E+26	1.00E+26
@	CS-136	66.88		4.80	1.00E+26	1.00E+26	1.00E+26
@		86.36		5.20	1.00E+26		1.00E+26
@		153.25		5.77	1.00E+26		1.00E+26
@		163.92		3.40	1.00E+26		1.00E+26
@		176.60		10.00	1.00E+26		1.00E+26
@		273.65		11.10	1.00E+26		1.00E+26
@		340.55		42.30	1.00E+26		1.00E+26
@		818.51		100.00	1.00E+26		1.00E+26
@		1048.07		80.00	1.00E+26		1.00E+26
@		1235.36		20.10	1.00E+26		1.00E+26
+	CS-137	661.66	*	85.10	6.98E+00	2.11E-01	2.11E-01
@	CS-138	138.10		1.49	1.00E+26	1.00E+26	1.00E+26
@		227.76		1.51	1.00E+26		1.00E+26
@		408.98		4.66	1.00E+26		1.00E+26
@		462.80		30.70	1.00E+26		1.00E+26
@		547.00		10.76	1.00E+26		1.00E+26
@		871.80		5.11	1.00E+26		1.00E+26
@		1009.78		29.80	1.00E+26		1.00E+26
@		1147.22		1.24	1.00E+26		1.00E+26
@		1343.59		1.14	1.00E+26		1.00E+26
@		1435.86		76.30	1.00E+26		1.00E+26
	LA-138	788.74		33.60	-5.63E-01	1.90E-01	5.65E-01
		1435.80		66.40	-6.71E-02		1.90E-01
@	BA-139	165.86		23.60	1.00E+26	1.00E+26	1.00E+26

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CE-139	165.85	79.90	5.54E+04	7.37E+05	7.37E+05
@	BA-140	162.66	6.21	1.00E+26	1.00E+26	1.00E+26
@		304.85	4.30	1.00E+26		1.00E+26
@		423.72	3.10	1.00E+26		1.00E+26
@		437.58	1.93	1.00E+26		1.00E+26
@		537.26	24.39	1.00E+26		1.00E+26
@	LA-140	328.76	20.32	1.00E+26	1.00E+26	1.00E+26
@		432.49	2.90	1.00E+26		1.00E+26
@		487.02	45.50	1.00E+26		1.00E+26
@		751.64	4.33	1.00E+26		1.00E+26
@		815.77	23.30	1.00E+26		1.00E+26
@		867.85	5.50	1.00E+26		1.00E+26
@		919.55	2.66	1.00E+26		1.00E+26
@		925.19	6.90	1.00E+26		1.00E+26
@		1596.21	95.40	1.00E+26		1.00E+26
@	CE-141	145.44	48.20	1.00E+26	1.00E+26	1.00E+26
	CE-144	80.12	1.36	-1.58E+04	1.64E+03	1.48E+04
		133.51	11.09	-3.30E+02		1.64E+03
	PM-144	476.78	41.98	1.26E+01	5.52E+01	1.45E+02
		618.01	98.59	-4.99E+02		5.88E+01
		694.00	0.55	-2.82E+03		9.96E+03
		696.49	99.49	-5.27E+00		5.52E+01
		778.57	1.51	-3.56E+03		4.23E+03
		814.14	0.55	-2.45E+03		1.14E+04
	PM-146	146.20	0.22	1.89E+01	7.31E-01	1.30E+02
		453.88	66.00	1.44E-02		7.31E-01
		589.80	0.43	-1.74E+02		9.84E+01
		633.25	1.12	-1.48E+00		4.02E+01
		735.93	22.80	-9.43E-01		2.11E+00
		747.24	17.71	-3.29E-01		2.58E+00
@	ND-147	91.11	27.90	1.00E+26	1.00E+26	1.00E+26
@		319.41	1.95	1.00E+26		1.00E+26
@		398.15	0.87	1.00E+26		1.00E+26
@		439.89	1.20	1.00E+26		1.00E+26
@		531.02	13.09	1.00E+26		1.00E+26
	EU-152	121.78	28.42	-2.40E-01	4.93E-01	4.93E-01
		244.70	7.49	-1.98E+00		2.80E+00
		295.94	0.44	-2.36E+01		6.75E+01
		344.28	26.58	-4.77E+00		7.31E-01
		411.12	2.23	1.82E-02		1.04E+01
		443.98	3.09	8.08E-01		7.97E+00
		688.67	0.83	5.79E+00		2.86E+01
		778.90	12.96	-2.04E+00		1.99E+00
		867.39	4.15	-2.69E+00		7.18E+00
		964.13	14.50	-1.38E+00		2.73E+00
		1005.28	0.65	2.82E+00		4.94E+01
		1085.87	10.16	-3.94E-01		3.17E+00
		1089.70	1.71	2.12E+00		1.93E+01
		1112.12	13.54	-5.62E+00		2.61E+00
		1212.95	1.40	-4.97E+00		2.10E+01
		1299.12	1.63	-4.24E+00		1.45E+01
		1408.01	20.87	8.17E-01		1.47E+00

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	GD-153	69.67		2.54	-5.55E+04	2.09E+03	3.48E+04
		97.43		30.20	-2.06E+03		2.09E+03
		103.18		21.44	-1.36E+03		2.68E+03
	EU-154	123.07		40.78	-4.22E-02	4.52E-01	4.52E-01
		247.93		6.95	-5.13E+00		2.99E+00
		444.49		0.56	5.21E+00		5.64E+01
		582.10		0.89	-1.37E+01		4.81E+01
		591.76		4.99	-1.16E+01		5.82E+00
		692.42		1.80	-2.07E+00		1.62E+01
		723.30		20.22	6.44E-02		1.70E+00
		756.80		4.57	1.93E+00		7.51E+00
		815.53		0.52	-1.30E+01		6.42E+01
		845.39		0.59	1.92E+01		6.54E+01
		873.19		12.27	2.04E-02		3.28E+00
		892.78		0.52	-2.53E+01		7.66E+01
		904.08		0.90	-4.92E+01		4.88E+01
		996.26		10.59	7.82E-01		3.94E+00
		1004.72		18.00	1.44E-02		2.28E+00
		1246.15		0.87	-5.66E+01		4.12E+01
		1274.44		35.19	-1.43E-01		9.77E-01
		1494.05		0.70	-5.50E+00		4.82E+01
		1596.49		1.80	-3.02E+00		1.94E+01
	EU-155	45.30		1.32	3.88E+01	1.28E+00	5.21E+01
		60.01		1.13	8.99E+01		5.19E+01
		86.54		30.70	-4.44E-01		1.28E+00
		105.31		21.15	-6.58E-02		1.31E+00
	@ W-187	72.00		11.10	1.00E+26	1.00E+26	1.00E+26
	@	134.25		8.80	1.00E+26		1.00E+26
	@	479.55		21.80	1.00E+26		1.00E+26
	@	618.26		6.28	1.00E+26		1.00E+26
	@	625.52		1.09	1.00E+26		1.00E+26
	@	685.73		27.30	1.00E+26		1.00E+26
	@	772.89		4.12	1.00E+26		1.00E+26
	IR-192	295.96		28.66	-1.04E+12	6.55E+11	2.96E+12
		308.46		30.00	-6.24E+11		1.75E+12
		316.51		82.81	1.77E+10		6.55E+11
		468.07		47.83	-1.18E+11		1.51E+12
		588.58		4.51	-2.10E+13		1.70E+13
		604.41		8.23	-2.74E+13		1.38E+13
		612.47		5.31	-4.36E+13		2.97E+13
	@ TL-201	135.34		2.56	1.00E+26	1.00E+26	1.00E+26
	@	167.43		10.00	1.00E+26		1.00E+26
	@ HG-203	279.20		81.46	1.00E+26	1.00E+26	1.00E+26
+	TL-208	277.36		6.31	-7.66E-01	1.49E-01	1.84E+00
		510.77		22.60	1.16E+00		8.75E-01
		583.19	*	84.50	3.54E-01		1.49E-01
		763.13		1.81	-5.41E+00		9.63E+00
		860.56		12.42	1.79E-01		1.56E+00
	PB-210	46.54		4.25	3.98E+00	5.83E+00	5.83E+00
	BI-211	351.06		12.91	-1.86E+00	2.02E+00	2.02E+00
	PB-211	404.85		3.78	-8.17E-01	3.88E+00	3.88E+00
		427.09		1.76	-2.46E+00		8.60E+00

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PB-211	704.64		0.46	9.14E+00	3.88E+00	3.45E+01
		766.51		0.62	4.63E+00		3.02E+01
		832.01		3.52	-9.28E-01		5.18E+00
	BI-212	727.33		6.58	1.35E+00	2.84E+00	2.84E+00
		785.37		1.10	3.11E+00		1.70E+01
		1078.62		0.56	4.49E+00		3.73E+01
		1620.50		1.49	-6.94E-01		1.07E+01
+	PB-212	115.18		0.59	3.06E+00	2.12E-01	1.33E+01
		238.63	*	43.30	1.17E+00		2.12E-01
		300.09		3.28	-9.59E+00		3.95E+00
+	BI-214	609.31	*	44.80	3.43E+00	2.38E-01	2.38E-01
		665.45		1.29	-2.98E+00		4.72E+01
		768.36		4.80	2.93E+00		4.10E+00
		806.17		1.22	-1.55E+01		1.50E+01
		934.06		3.03	5.04E+00		8.17E+00
		1120.29	*	14.80	3.56E+00		1.02E+00
		1155.19		1.64	-3.57E+00		1.26E+01
		1207.68		0.49	7.33E+00		4.28E+01
		1238.11		5.86	2.90E+00		4.14E+00
		1280.96		1.44	-7.56E-01		1.21E+01
		1377.67		3.92	4.06E+00		5.60E+00
		1385.31		0.89	-1.14E+01		2.03E+01
		1401.50		1.55	-5.39E+00		1.10E+01
		1407.98		2.80	3.94E+00		7.08E+00
		1415.80		0.48	-2.26E+01		3.02E+01
		1509.23		2.12	2.85E+00		9.00E+00
		1583.22		0.70	2.01E+00		2.74E+01
		1661.28		1.14	7.51E+00		1.35E+01
		1729.59		2.88	6.73E+00		7.29E+00
		1764.49	*	15.36	3.99E+00		4.85E-01
		1847.42		2.04	5.81E+00		1.01E+01
+	PB-214	53.23		1.11	-1.92E+01	2.70E-01	1.34E+01
		241.98	*	7.50	3.59E+00		1.11E+00
		258.79		0.55	5.10E+00		2.00E+01
		295.21	*	18.50	3.35E+00		5.74E-01
		351.92	*	35.80	3.57E+00		2.70E-01
		785.91		0.85	-4.03E+00		2.22E+01
		839.03		0.63	7.28E+00		3.07E+01
	RN-219	130.59		0.12	3.69E+01	1.11E+00	8.31E+01
		271.23		10.80	3.36E-01		1.11E+00
		401.81		6.37	-5.61E-01		2.30E+00
	RN-220	549.73		0.11	6.27E-01	1.41E+02	1.41E+02
	RA-223	122.32		1.19	-2.16E+00	8.71E-01	7.73E+00
		144.23		3.22	2.58E-01		3.03E+00
		154.21		5.62	3.13E-01		1.77E+00
		158.63		0.69	-5.54E+00		1.37E+01
		179.54		0.15	-9.81E+01		6.73E+01
		269.46		13.70	1.66E-01		8.71E-01
		288.18		0.16	-2.99E+02		7.52E+01
		323.87		3.93	-9.12E-01		3.23E+00
		328.40		0.21	3.90E+01		6.46E+01
		338.28		2.79	5.06E+00		5.18E+00

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	RA-223	342.90		0.22	-5.27E+01	8.71E-01	5.93E+01
		346.80		0.18	-4.93E+02		7.15E+01
		371.68		0.48	-8.10E+00		2.63E+01
	RA-224	240.99		3.97	2.03E+01	4.69E+00	4.69E+00
+	RA-226	186.10	*	3.50	5.85E+00	2.46E+00	2.46E+00
	TH-227	50.13		8.00	-8.70E-01	1.07E+00	1.95E+00
		79.72		1.89	-3.46E+00		6.62E+00
		93.93		1.37	4.51E+00		7.85E+00
		210.65		1.10	6.50E+00		1.02E+01
		235.97		12.70	-1.76E+00		1.07E+00
		256.25		7.01	-2.80E-01		1.51E+00
		286.12		1.54	-3.79E+00		7.88E+00
		300.00		2.67	-1.03E+01		5.37E+00
		304.51		1.23	-2.39E+01		9.84E+00
		329.85		2.69	1.61E+00		5.08E+00
		334.38		1.05	-4.96E+00		1.23E+01
+	AC-228	99.50		1.28	-4.45E+00	4.67E-01	6.73E+00
		129.07		2.45	2.00E+00		4.06E+00
		153.98		0.74	2.42E+00		1.34E+01
		209.25		3.88	1.43E+00		2.87E+00
		270.24		3.43	3.50E-01		3.46E+00
		327.90		3.06	2.25E+00		4.40E+00
		332.37		0.40	-1.12E+01		3.23E+01
		338.32	*	11.25	1.17E+00		1.05E+00
		409.46		1.94	-1.62E-01		7.75E+00
		463.01		4.44	1.12E+00		3.89E+00
		508.96		0.47	5.04E+01		4.18E+01
		562.50		0.87	1.05E-01		1.83E+01
		755.32		1.00	5.75E+00		1.75E+01
		772.29		1.50	8.66E+00		1.31E+01
		782.14		0.50	6.49E+00		3.70E+01
		794.95		4.34	3.52E+00		5.27E+00
		830.49		0.55	-8.93E+00		3.28E+01
		835.71		1.68	6.31E-01		1.12E+01
		840.38		0.94	1.76E+00		2.04E+01
		904.20		0.78	-2.86E+01		2.84E+01
		911.21	*	26.60	9.41E-01		4.67E-01
		964.77		5.11	-1.64E+00		5.45E+00
		968.97	*	16.20	1.21E+00		8.82E-01
		1247.08		0.50	-5.32E+01		3.51E+01
		1459.14		0.80	-2.73E+01		5.55E+01
		1495.91		0.89	1.12E+01		2.12E+01
		1580.54		0.61	-3.32E+00		2.92E+01
		1588.21		3.27	2.45E+00		6.29E+00
		1630.63		1.60	-1.32E-01		9.82E+00
	TH-228	84.37		1.23	-2.23E+01	7.78E+00	7.78E+00
		215.99		0.26	-2.55E+01		4.01E+01
	TH-229	75.09		0.61	1.18E+02	2.41E+00	2.94E+01
		86.35		3.90	-1.02E+00		2.92E+00
		124.60		1.43	-4.01E-01		6.56E+00
		136.99		1.18	-2.88E+00		8.12E+00
		148.15		0.88	-9.03E-01		1.11E+01

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	TH-229	154.34		0.77	2.29E+00	2.41E+00	1.29E+01
		156.41		1.19	1.01E-01		8.26E+00
		193.51		4.41	-3.30E+00		2.41E+00
		204.69		0.60	-1.03E+01		1.71E+01
		210.85		2.77	2.58E+00		4.08E+00
	PA-231	283.69		1.70	2.27E+00	5.27E+00	7.20E+00
		300.07		2.46	-1.28E+01		5.27E+00
		302.65		2.20	-2.06E+01		5.71E+00
		330.06		1.40	-1.31E+00		9.57E+00
	TH-231	81.23		0.89	-2.45E+01	1.45E+00	1.13E+01
		84.21		6.60	-4.16E+00		1.45E+00
		89.95		0.94	-4.07E+00		1.15E+01
+	TH-232	63.81	*	0.27	-4.46E+00	3.68E+01	3.68E+01
	U-232	57.78		0.20	9.44E+01	9.14E+01	9.14E+01
		129.08		0.07	7.72E+01		1.57E+02
	PA-233	75.35		1.39	5.15E+01	3.14E-01	1.28E+01
		86.81		1.97	-2.08E+00		5.66E+00
		103.97		0.87	-2.67E+00		9.16E+00
		271.48		0.33	1.11E+01		3.67E+01
		300.34		6.62	-4.75E+00		1.96E+00
		312.17		38.60	2.77E-02		3.14E-01
		340.81		4.47	-1.28E+00		3.21E+00
		375.45		0.68	1.93E+00		1.93E+01
		398.62		1.39	1.66E+00		1.02E+01
		415.76		1.75	-5.18E-02		8.77E+00
	U-233	42.44		0.09	-1.28E+02	2.33E+02	2.33E+02
		54.70		0.02	-5.92E+02		8.09E+02
		97.13		0.02	-4.27E+02		4.31E+02
	PA-234	62.70	*	1.55	-7.77E-01	5.55E-01	6.41E+00
		99.86		3.19	-1.18E+00		2.71E+00
		125.46		0.78	-4.67E-01		1.21E+01
		131.30		18.00	2.75E-01		5.55E-01
		140.50		0.81	-8.44E-01		1.19E+01
		152.71		5.97	3.89E-01		1.66E+00
		159.48		0.65	-6.06E+00		1.47E+01
		170.85		0.50	-8.21E+00		1.91E+01
		186.15	*	1.76	1.16E+01		4.89E+00
		193.73		0.49	-2.85E+01		2.16E+01
		200.97		0.90	3.09E-01		1.17E+01
		203.12		1.23	-3.98E+00		8.46E+00
		227.00		9.99	-6.05E-03		1.10E+00
		245.37		0.75	-1.42E+01		1.73E+01
		249.22		2.47	-6.73E+00		4.32E+00
		272.28		1.08	3.12E+00		1.11E+01
		293.79		2.99	-4.39E+00		6.39E+00
		330.40		0.77	-2.38E+00		1.74E+01
		369.50		2.47	-6.38E-01		5.12E+00
		372.00		1.21	-3.08E+00		1.05E+01
		458.68		1.13	4.34E+00		1.53E+01
		506.75		1.29	8.75E+00		1.45E+01
		513.40		1.10	1.97E+01		1.77E+01
		521.40		0.74	-1.16E+01		2.09E+01

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PA-234	565.20		1.03	1.05E+01	5.55E-01	1.64E+01
		569.32		11.80	-2.29E-02		1.38E+00
		602.60		0.54	-1.01E+01		3.96E+01
		663.90		0.54	9.07E+02		1.13E+02
		666.50		1.16	-4.66E+00		4.57E+01
		669.70		0.99	-9.79E+00		1.58E+01
		692.60		1.24	-1.51E+00		1.19E+01
		699.03		3.61	3.17E-01		4.24E+00
		705.90		2.27	2.53E+00		7.09E+00
		730.90		0.63	1.47E+01		2.96E+01
		733.39		6.90	-5.65E-01		2.46E+00
		738.00		1.15	-3.29E+00		1.39E+01
		742.81		2.06	-5.43E-01		7.65E+00
		755.00		1.22	2.07E+00		1.41E+01
		780.40		0.90	-7.86E+00		1.92E+01
		786.27		1.19	-2.88E+00		1.58E+01
		794.90		1.34	1.14E+01		1.71E+01
		796.10	*	2.58	9.34E+00		4.79E+00
		805.52		3.14	-6.86E+00		5.80E+00
		819.20		1.88	-1.07E+00		9.09E+00
		824.65		3.12	1.76E-01		5.77E+00
		831.50		4.12	-1.19E+00		4.35E+00
		876.00		2.52	1.13E+00		8.19E+00
		880.50		10.40	7.16E-01		2.07E+00
		883.24		9.58	-9.96E-03		2.17E+00
		898.67		3.24	-1.51E+00		6.34E+00
		926.00		16.80	-1.31E+00		1.25E+00
		946.18		15.00	-5.32E-02		1.44E+00
		980.48		5.15	-4.81E+00		3.69E+00
		984.20		1.62	2.95E-01		1.22E+01
		1028.70		0.57	-8.27E-01		3.55E+01
		1083.20		0.50	3.28E+00		4.27E+01
		1352.90		1.15	0.00E+00		1.31E+01
		1393.90		2.06	-4.34E+00		7.11E+00
		1668.40		0.76	-2.60E-01		1.76E+01
		1693.80		0.69	1.58E+00		2.12E+01
	PA-234M	766.36		0.29	9.76E+00	2.55E+01	6.36E+01
		811.00		0.51	-1.40E+01		3.32E+01
		1001.03		0.84	6.79E+00		2.55E+01
+	TH-234	63.29	*	4.84	-2.49E-01	1.99E+00	2.05E+00
		83.30		0.08	-4.55E+02		1.25E+02
		92.59		5.58	1.76E+00		1.99E+00
		112.81		0.28	8.09E+00		2.87E+01
	U-234	53.20		0.12	-1.73E+02	1.21E+02	1.21E+02
		120.90		0.03	-1.37E+02		2.64E+02
+	U-235	109.16		1.54	-3.88E-01	1.50E-01	5.11E+00
		143.76		10.96	8.62E-03		8.87E-01
		163.36		5.08	3.32E-01		1.93E+00
		185.71	*	57.20	3.58E-01		1.50E-01
		194.94		0.63	-9.02E+00		1.70E+01
		202.11		1.08	-4.78E+00		9.62E+00
		205.31		5.01	-8.18E-01		2.08E+00

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	NP-237	57.10		0.39	-1.44E+01	7.56E-01	3.94E+01
		86.48	*	12.40	1.13E+00		7.56E-01
		94.64		0.60	1.03E+01		1.74E+01
		143.25		0.43	-3.75E-01		2.26E+01
	@ NP-239	106.12		27.20	1.00E+26	1.00E+26	1.00E+26
	@	209.75		3.42	1.00E+26		1.00E+26
	@	228.18		10.76	1.00E+26		1.00E+26
	@	277.60		14.38	1.00E+26		1.00E+26
	@	334.31		2.07	1.00E+26		1.00E+26
+	AM-241	59.54	*	35.90	7.62E-01	4.09E-01	4.09E-01
	@ CM-241	132.41		3.90	1.00E+26	1.00E+26	1.00E+26
	@	165.01		3.40	1.00E+26		1.00E+26
	@	205.88		2.67	1.00E+26		1.00E+26
	@	430.63		4.06	1.00E+26		1.00E+26
	@	463.27		1.23	1.00E+26		1.00E+26
	@	471.80		71.30	1.00E+26		1.00E+26
	@	636.88		1.53	1.00E+26		1.00E+26
+	AM-243	74.66	*	68.20	5.73E-01	1.43E-01	1.43E-01

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.60		10.42	5.36E+17	5.36E+17	3.44E+15	2.62E+17
	NA-22	1274.53		99.94	1.67E+00	1.67E+00	-2.43E-01	7.92E-01
	@ NA-24	1368.63		100.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	>@	2754.03		99.94	0.00E+00		0.00E+00	0.00E+00
+	K-40	1460.83	*	10.67	1.12E+00	1.12E+00	1.14E+01	5.14E-01
	@ AR-41	1293.59		99.10	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@ CR-51	320.08		9.86	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	MN-54	834.85		99.98	1.81E+02	1.81E+02	-2.84E+01	8.78E+01
	CO-56	846.77		99.93	2.30E+11	1.93E+11	3.36E+10	1.11E+11
		977.37		1.44	1.66E+13		-2.27E+13	8.01E+12
		1037.84		13.99	1.76E+12		1.49E+11	8.51E+11
		1175.10		2.28	2.89E+13		1.13E+14	1.43E+13
		1238.28		67.56	4.33E+11		3.03E+11	2.09E+11
		1360.21		4.33	4.43E+12		1.25E+12	2.09E+12
		1771.35		15.69	2.48E+12		-3.94E+12	1.19E+12
		2015.18		3.08	4.90E+11		0.00E+00	0.00E+00
		2034.76		7.89	1.93E+11		0.00E+00	0.00E+00

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
@	MN-56	846.75		98.87	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		1810.72		27.19	1.00E+26		1.00E+26	1.00E+20
>@		2113.05		14.34	0.00E+00		0.00E+00	0.00E+00
	CO-57	122.06		85.60	2.92E+02	2.92E+02	-8.19E+01	1.44E+02
		136.47		10.68	2.43E+03		-9.94E+02	1.19E+03
		692.41		0.16	2.55E+05		-3.25E+04	1.23E+05
	CO-58	810.78		99.45	2.59E+12	2.59E+12	-1.09E+12	1.25E+12
		863.96		0.68	4.34E+14		9.61E+13	2.10E+14
		1674.73		0.52	3.18E+14		-1.42E+14	1.43E+14
@	FE-59	142.65		1.02	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		192.35		3.08	1.00E+26		1.00E+26	1.00E+20
@		1099.25		56.50	1.00E+26		1.00E+26	1.00E+20
@		1291.60		43.20	1.00E+26		1.00E+26	1.00E+20
+	CO-60	1173.24	*	99.90	4.52E-01	4.01E-01	6.60E+00	2.14E-01
		1332.50	*	99.98	4.01E-01		6.91E+00	1.87E-01
@	CU-64	1345.77		0.47	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	ZN-65	1115.55		50.60	4.32E+03	4.32E+03	-3.97E+03	2.11E+03
	SE-75	66.05		1.12	7.47E+08	1.02E+07	-3.85E+07	3.68E+08
		96.73		3.42	1.58E+08		-1.67E+08	7.77E+07
		121.12		17.14	3.30E+07		-1.33E+07	1.62E+07
		136.00		58.27	1.02E+07		-2.42E+06	5.04E+06
		198.61		1.47	4.45E+08		2.26E+07	2.19E+08
		264.66		58.50	1.12E+07		-5.91E+06	5.47E+06
		279.54		24.79	3.00E+07		1.03E+06	1.47E+07
		303.93		1.31	5.87E+08		-2.00E+09	2.88E+08
		400.66		11.37	8.11E+07		-6.91E+06	3.97E+07
	RB-83	520.39		44.70	2.34E+10	2.34E+10	-2.80E+10	1.14E+10
		529.59		29.30	3.55E+10		3.04E+09	1.73E+10
		552.59		15.96	6.52E+10		1.26E+09	3.17E+10
@	BR-84	881.60		42.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		1897.60		14.90	1.00E+26		1.00E+26	1.00E+20
	KR-85	514.01		0.43	7.72E+01	7.72E+01	7.25E+01	3.78E+01
@	KR-85M	151.20		75.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		304.87		14.00	1.00E+26		1.00E+26	1.00E+20
	SR-85	514.01		95.70	5.01E+13	5.01E+13	4.71E+13	2.45E+13
@	SR-85m	151.19		12.90	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		231.86		84.40	1.00E+26		1.00E+26	1.00E+20
@	RB-86	1077.00		8.64	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	KR-87	402.59		49.60	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		673.83		1.89	1.00E+26		1.00E+26	1.00E+20
@		845.44		7.30	1.00E+26		1.00E+26	1.00E+20
@		1175.40		1.11	1.00E+26		1.00E+26	1.00E+20
@		1740.52		2.04	1.00E+26		1.00E+26	1.00E+20
@	KR-88	165.98		3.10	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		196.30		26.00	1.00E+26		1.00E+26	1.00E+20
@		362.23		2.25	1.00E+26		1.00E+26	1.00E+20
@		834.83		13.00	1.00E+26		1.00E+26	1.00E+20
@		985.78		1.52	1.00E+26		1.00E+26	1.00E+20
@		1141.33		1.28	1.00E+26		1.00E+26	1.00E+20
@		1179.51		1.00	1.00E+26		1.00E+26	1.00E+20
@		1250.67		1.12	1.00E+26		1.00E+26	1.00E+20
@		1369.50		1.48	1.00E+26		1.00E+26	1.00E+20
@		1518.39		2.15	1.00E+26		1.00E+26	1.00E+20

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
@	KR-88	1529.77		10.90	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	RB-88	898.03		14.04	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		1836.01		21.40	1.00E+26		1.00E+26	1.00E+20
	Y-88	898.04		93.68	1.23E+08	8.75E+07	-3.65E+07	5.97E+07
		1836.06		99.24	8.75E+07		-5.00E+07	4.04E+07
	NB-94x	702.62		97.90	1.58E-01	1.58E-01	-3.27E-03	7.62E-02
		871.09		99.90	1.98E-01		-3.93E-02	9.60E-02
@	NB-95	765.81		99.81	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	NB-95m	204.12		2.33	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		235.69		24.80	1.00E+26		1.00E+26	1.00E+20
	ZR-95	724.20		44.17	1.60E+14	1.21E+14	8.97E+13	7.78E+13
		756.73		54.46	1.21E+14		3.12E+13	5.87E+13
@	NB-96	460.04		26.62	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		568.87		57.97	1.00E+26		1.00E+26	1.00E+20
@		778.22		96.45	1.00E+26		1.00E+26	1.00E+20
@		849.93		20.40	1.00E+26		1.00E+26	1.00E+20
@		1200.23		19.96	1.00E+26		1.00E+26	1.00E+20
@	MO-99	140.51		4.52	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		181.06		6.08	1.00E+26		1.00E+26	1.00E+20
@		366.42		1.20	1.00E+26		1.00E+26	1.00E+20
@		739.50		12.13	1.00E+26		1.00E+26	1.00E+20
@		777.92		4.28	1.00E+26		1.00E+26	1.00E+20
@	TC-99M	140.51		89.06	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	RU-103	443.80		3.27	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		497.08		90.90	1.00E+26		1.00E+26	1.00E+20
@		610.33		5.75	1.00E+26		1.00E+26	1.00E+20
	RHRU-106	621.93		9.93	5.06E+02	5.06E+02	1.46E+02	2.46E+02
		1050.41		1.56	4.47E+03		2.01E+03	2.16E+03
	AG-108M	433.94		90.50	1.71E-01	1.71E-01	-2.36E-02	8.39E-02
		614.28		89.90	3.69E-01		-8.34E-01	1.82E-01
		722.94		90.90	1.93E-01		7.32E-03	9.36E-02
+	CD-109	88.03	*	3.61	2.71E+02	2.71E+02	4.05E+02	1.33E+02
	AG-110M	116.48		1.36	3.67E+04	1.57E+03	-4.57E+03	1.81E+04
		446.81		3.72	2.34E+04		-1.03E+03	1.14E+04
		620.36		2.79	3.02E+04		-5.43E+04	1.47E+04
		657.76		94.00	2.74E+03		-1.67E+04	1.36E+03
		677.62		10.28	7.49E+03		-2.95E+03	3.61E+03
		687.02		6.39	1.30E+04		1.82E+03	6.29E+03
		706.68		16.32	5.44E+03		2.98E+03	2.63E+03
		744.28		4.70	1.83E+04		-1.50E+03	8.85E+03
		763.94		22.14	4.60E+03		-1.84E+01	2.23E+03
		818.03		7.29	1.26E+04		-3.18E+03	6.07E+03
		884.68		72.19	1.57E+03		7.38E+01	7.59E+02
		937.49		34.13	3.90E+03		1.72E+03	1.90E+03
		1384.30		24.12	4.76E+03		1.87E+03	2.28E+03
		1475.79		3.97	2.19E+04		4.03E+03	1.03E+04
		1505.04		12.95	8.19E+03		1.55E+03	3.89E+03
		1562.30		1.02	8.41E+04		4.38E+03	3.93E+04
	SN-113	255.06		1.82	7.38E+08	2.89E+07	-2.54E+08	3.61E+08
		391.69		64.00	2.89E+07		4.22E+06	1.42E+07
	IN-114	190.27		15.40	5.03E+18	5.03E+18	-6.23E+18	2.47E+18
		558.43		4.40	2.49E+19		-6.11E+18	1.21E+19
		725.24		4.40	3.05E+19		1.70E+19	1.48E+19

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
@ SB-122	564.24	69.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@ I-124	602.72	60.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	722.78	9.98	1.00E+26		1.00E+26	1.00E+20
@	1509.49	2.99	1.00E+26		1.00E+26	1.00E+20
@	1691.02	10.40	1.00E+26		1.00E+26	1.00E+20
SB-124	602.73	97.80	7.03E+14	7.03E+14	-1.79E+14	3.44E+14
	645.85	7.38	6.11E+15		-2.53E+15	2.95E+15
	709.32	1.35	3.67E+16		-1.22E+15	1.77E+16
	713.78	2.27	2.18E+16		-5.25E+15	1.05E+16
	722.79	10.76	5.03E+15		-9.40E+14	2.44E+15
	968.20	1.89	4.76E+16		6.38E+16	2.32E+16
	1045.13	1.84	3.75E+16		5.58E+15	1.81E+16
	1325.51	1.62	3.70E+16		-1.78E+17	1.76E+16
	1355.18	1.04	4.47E+16		-1.31E+16	2.09E+16
	1368.16	2.62	1.89E+16		-1.94E+16	8.90E+15
	1436.56	1.23	3.29E+16		-9.56E+15	1.52E+16
	1690.98	47.30	9.76E+14		8.50E+13	4.51E+14
I-125	30.98	20.10	9.81E+15	9.81E+15	1.12E+15	4.77E+15
	35.49	6.68	2.52E+16		2.22E+16	1.24E+16
SB-125	176.31	6.82	1.25E+01	4.33E+00	4.34E+00	6.17E+00
	380.45	1.52	7.41E+01		-8.16E+00	3.63E+01
	427.88	29.60	4.33E+00		-9.65E-01	2.12E+00
	463.36	10.49	1.39E+01		4.00E+00	6.81E+00
	600.60	17.86	9.12E+00		-3.25E+00	4.45E+00
	606.72	5.03	6.43E+01		3.09E+02	3.18E+01
	635.95	11.31	1.18E+01		3.31E+00	5.74E+00
	671.45	1.80	6.68E+01		-7.07E+01	3.22E+01
@ XE-125	188.42	54.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	243.38	30.10	1.00E+26		1.00E+26	1.00E+20
@ I-126	388.63	34.10	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@ SB-126	414.80	83.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	666.30	99.60	1.00E+26		1.00E+26	1.00E+20
@	695.00	99.60	1.00E+26		1.00E+26	1.00E+20
@	697.00	28.90	1.00E+26		1.00E+26	1.00E+20
@	720.50	53.80	1.00E+26		1.00E+26	1.00E+20
@	856.70	17.60	1.00E+26		1.00E+26	1.00E+20
I-129	39.58	7.45	3.17E+00	3.17E+00	-1.70E+00	1.55E+00
@ I-130	418.01	34.15	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	536.09	99.00	1.00E+26		1.00E+26	1.00E+20
@	668.54	96.10	1.00E+26		1.00E+26	1.00E+20
@	739.48	82.30	1.00E+26		1.00E+26	1.00E+20
@	1157.47	11.30	1.00E+26		1.00E+26	1.00E+20
@ I-131	284.30	6.14	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	364.49	81.70	1.00E+26		1.00E+26	1.00E+20
@	636.99	7.17	1.00E+26		1.00E+26	1.00E+20
@	722.91	1.77	1.00E+26		1.00E+26	1.00E+20
@ XE-131M	163.93	1.91	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@ TE-132	111.76	1.74	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	116.30	1.96	1.00E+26		1.00E+26	1.00E+20
@	228.16	88.00	1.00E+26		1.00E+26	1.00E+20
BA-133	53.16	2.20	1.19E+01	5.17E-01	-1.69E+01	5.84E+00
	79.62	2.62	8.36E+00		-4.37E+00	4.13E+00
	81.00	34.06	5.17E-01		-8.68E-01	2.54E-01

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BA-133	160.61		0.64	2.61E+01	5.17E-01	-5.47E+00	1.28E+01
		223.23		0.45	4.31E+01		1.35E+01	2.12E+01
		276.40		7.16	2.85E+00		-1.03E+00	1.40E+00
		302.85		18.33	1.20E+00		-4.32E+00	5.88E-01
		356.02		62.05	5.30E-01		-1.87E+00	2.61E-01
		383.85		8.94	2.59E+00		-1.43E+00	1.27E+00
@	I-133	529.87		87.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		875.33		4.51	1.00E+26		1.00E+26	1.00E+20
+	CS-134	475.35		1.47	1.90E+02	1.92E+00	-1.24E+01	9.29E+01
		563.23		8.38	3.35E+01		3.63E+00	1.63E+01
		569.32		15.43	1.83E+01		-3.05E-01	8.92E+00
		604.70	*	97.56	1.92E+00		5.20E+00	9.20E-01
		795.84	*	85.44	2.52E+00		4.91E+00	1.20E+00
		801.93		8.73	3.99E+01		-3.37E+01	1.94E+01
		1038.57		1.00	3.57E+02		5.73E+00	1.72E+02
		1167.94		1.80	3.89E+02		-1.77E+03	1.91E+02
		1365.15		3.04	8.90E+01		1.18E+01	4.19E+01
@	I-134	405.45		7.35	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		540.83		7.60	1.00E+26		1.00E+26	1.00E+20
@		595.36		11.20	1.00E+26		1.00E+26	1.00E+20
@		621.79		10.60	1.00E+26		1.00E+26	1.00E+20
@		677.34		7.80	1.00E+26		1.00E+26	1.00E+20
@		847.03		95.40	1.00E+26		1.00E+26	1.00E+20
@		884.09		64.90	1.00E+26		1.00E+26	1.00E+20
@		1072.55		15.00	1.00E+26		1.00E+26	1.00E+20
@		1136.16		9.20	1.00E+26		1.00E+26	1.00E+20
	CS-135	787.20		100.00	1.91E-01	1.91E-01	-1.71E-01	9.25E-02
		846.10		95.90	1.99E-01		2.22E-02	9.65E-02
@	I-135	417.63		3.55	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		546.56		7.20	1.00E+26		1.00E+26	1.00E+20
@		836.80		6.73	1.00E+26		1.00E+26	1.00E+20
@		1038.76		8.00	1.00E+26		1.00E+26	1.00E+20
@		1124.00		3.64	1.00E+26		1.00E+26	1.00E+20
@		1131.51		22.74	1.00E+26		1.00E+26	1.00E+20
@		1260.41		28.90	1.00E+26		1.00E+26	1.00E+20
@		1457.56		8.73	1.00E+26		1.00E+26	1.00E+20
@		1678.03		9.62	1.00E+26		1.00E+26	1.00E+20
@		1706.46		4.13	1.00E+26		1.00E+26	1.00E+20
@		1791.20		7.77	1.00E+26		1.00E+26	1.00E+20
@	XE-135	249.79		90.20	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		608.18		2.90	1.00E+26		1.00E+26	1.00E+20
@	XE-135M	526.56		80.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	CS-136	66.88		4.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		86.36		5.20	1.00E+26		1.00E+26	1.00E+20
@		153.25		5.77	1.00E+26		1.00E+26	1.00E+20
@		163.92		3.40	1.00E+26		1.00E+26	1.00E+20
@		176.60		10.00	1.00E+26		1.00E+26	1.00E+20
@		273.65		11.10	1.00E+26		1.00E+26	1.00E+20
@		340.55		42.30	1.00E+26		1.00E+26	1.00E+20
@		818.51		100.00	1.00E+26		1.00E+26	1.00E+20
@		1048.07		80.00	1.00E+26		1.00E+26	1.00E+20
@		1235.36		20.10	1.00E+26		1.00E+26	1.00E+20
+	CS-137	661.66	*	85.10	2.11E-01	2.11E-01	6.98E+00	1.02E-01

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
@	CS-138	138.10	1.49	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		227.76	1.51	1.00E+26		1.00E+26	1.00E+20
@		408.98	4.66	1.00E+26		1.00E+26	1.00E+20
@		462.80	30.70	1.00E+26		1.00E+26	1.00E+20
@		547.00	10.76	1.00E+26		1.00E+26	1.00E+20
@		871.80	5.11	1.00E+26		1.00E+26	1.00E+20
@		1009.78	29.80	1.00E+26		1.00E+26	1.00E+20
@		1147.22	1.24	1.00E+26		1.00E+26	1.00E+20
@		1343.59	1.14	1.00E+26		1.00E+26	1.00E+20
@		1435.86	76.30	1.00E+26		1.00E+26	1.00E+20
	LA-138	788.74	33.60	5.65E-01	1.90E-01	-5.63E-01	2.74E-01
		1435.80	66.40	1.90E-01		-6.71E-02	8.78E-02
@	BA-139	165.86	23.60	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	CE-139	165.85	79.90	7.37E+05	7.37E+05	5.54E+04	3.62E+05
@	BA-140	162.66	6.21	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		304.85	4.30	1.00E+26		1.00E+26	1.00E+20
@		423.72	3.10	1.00E+26		1.00E+26	1.00E+20
@		437.58	1.93	1.00E+26		1.00E+26	1.00E+20
@		537.26	24.39	1.00E+26		1.00E+26	1.00E+20
@	LA-140	328.76	20.32	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		432.49	2.90	1.00E+26		1.00E+26	1.00E+20
@		487.02	45.50	1.00E+26		1.00E+26	1.00E+20
@		751.64	4.33	1.00E+26		1.00E+26	1.00E+20
@		815.77	23.30	1.00E+26		1.00E+26	1.00E+20
@		867.85	5.50	1.00E+26		1.00E+26	1.00E+20
@		919.55	2.66	1.00E+26		1.00E+26	1.00E+20
@		925.19	6.90	1.00E+26		1.00E+26	1.00E+20
@		1596.21	95.40	1.00E+26		1.00E+26	1.00E+20
@	CE-141	145.44	48.20	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	CE-144	80.12	1.36	1.48E+04	1.64E+03	-1.58E+04	7.30E+03
		133.51	11.09	1.64E+03		-3.30E+02	8.06E+02
	PM-144	476.78	41.98	1.45E+02	5.52E+01	1.26E+01	7.07E+01
		618.01	98.59	5.88E+01		-4.99E+02	2.85E+01
		694.00	0.55	9.96E+03		-2.82E+03	4.81E+03
		696.49	99.49	5.52E+01		-5.27E+00	2.67E+01
		778.57	1.51	4.23E+03		-3.56E+03	2.04E+03
		814.14	0.55	1.14E+04		-2.45E+03	5.49E+03
	PM-146	146.20	0.22	1.30E+02	7.31E-01	1.89E+01	6.41E+01
		453.88	66.00	7.31E-01		1.44E-02	3.58E-01
		589.80	0.43	9.84E+01		-1.74E+02	4.77E+01
		633.25	1.12	4.02E+01		-1.48E+00	1.95E+01
		735.93	22.80	2.11E+00		-9.43E-01	1.02E+00
		747.24	17.71	2.58E+00		-3.29E-01	1.24E+00
@	ND-147	91.11	27.90	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		319.41	1.95	1.00E+26		1.00E+26	1.00E+20
@		398.15	0.87	1.00E+26		1.00E+26	1.00E+20
@		439.89	1.20	1.00E+26		1.00E+26	1.00E+20
@		531.02	13.09	1.00E+26		1.00E+26	1.00E+20
	EU-152	121.78	28.42	4.93E-01	4.93E-01	-2.40E-01	2.43E-01
		244.70	7.49	2.80E+00		-1.98E+00	1.38E+00
		295.94	0.44	6.75E+01		-2.36E+01	3.33E+01
		344.28	26.58	7.31E-01		-4.77E+00	3.58E-01
		411.12	2.23	1.04E+01		1.82E-02	5.11E+00

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-152	443.98	3.09	7.97E+00	4.93E-01	8.08E-01	3.90E+00
	688.67	0.83	2.86E+01		5.79E+00	1.38E+01
	778.90	12.96	1.99E+00		-2.04E+00	9.60E-01
	867.39	4.15	7.18E+00		-2.69E+00	3.47E+00
	964.13	14.50	2.73E+00		-1.38E+00	1.33E+00
	1005.28	0.65	4.94E+01		2.82E+00	2.39E+01
	1085.87	10.16	3.17E+00		-3.94E-01	1.53E+00
	1089.70	1.71	1.93E+01		2.12E+00	9.32E+00
	1112.12	13.54	2.61E+00		-5.62E+00	1.26E+00
	1212.95	1.40	2.10E+01		-4.97E+00	1.01E+01
	1299.12	1.63	1.45E+01		-4.24E+00	6.84E+00
	1408.01	20.87	1.47E+00		8.17E-01	6.99E-01
GD-153	69.67	2.54	3.48E+04	2.09E+03	-5.55E+04	1.72E+04
	97.43	30.20	2.09E+03		-2.06E+03	1.03E+03
	103.18	21.44	2.68E+03		-1.36E+03	1.31E+03
EU-154	123.07	40.78	4.52E-01	4.52E-01	-4.22E-02	2.23E-01
	247.93	6.95	2.99E+00		-5.13E+00	1.47E+00
	444.49	0.56	5.64E+01		5.21E+00	2.76E+01
	582.10	0.89	4.81E+01		-1.37E+01	2.36E+01
	591.76	4.99	5.82E+00		-1.16E+01	2.82E+00
	692.42	1.80	1.62E+01		-2.07E+00	7.82E+00
	723.30	20.22	1.70E+00		6.44E-02	8.24E-01
	756.80	4.57	7.51E+00		1.93E+00	3.64E+00
	815.53	0.52	6.42E+01		-1.30E+01	3.10E+01
	845.39	0.59	6.54E+01		1.92E+01	3.16E+01
	873.19	12.27	3.28E+00		2.04E-02	1.59E+00
	892.78	0.52	7.66E+01		-2.53E+01	3.71E+01
	904.08	0.90	4.88E+01		-4.92E+01	2.37E+01
	996.26	10.59	3.94E+00		7.82E-01	1.91E+00
	1004.72	18.00	2.28E+00		1.44E-02	1.10E+00
	1246.15	0.87	4.12E+01		-5.66E+01	1.96E+01
	1274.44	35.19	9.77E-01		-1.43E-01	4.64E-01
	1494.05	0.70	4.82E+01		-5.50E+00	2.27E+01
	1596.49	1.80	1.94E+01		-3.02E+00	9.14E+00
EU-155	45.30	1.32	5.21E+01	1.28E+00	3.88E+01	2.56E+01
	60.01	1.13	5.19E+01		8.99E+01	2.56E+01
	86.54	30.70	1.28E+00		-4.44E-01	6.29E-01
	105.31	21.15	1.31E+00		-6.58E-02	6.45E-01
@ W-187	72.00	11.10	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	134.25	8.80	1.00E+26		1.00E+26	1.00E+20
@	479.55	21.80	1.00E+26		1.00E+26	1.00E+20
@	618.26	6.28	1.00E+26		1.00E+26	1.00E+20
@	625.52	1.09	1.00E+26		1.00E+26	1.00E+20
@	685.73	27.30	1.00E+26		1.00E+26	1.00E+20
@	772.89	4.12	1.00E+26		1.00E+26	1.00E+20
IR-192	295.96	28.66	2.96E+12	6.55E+11	-1.04E+12	1.46E+12
	308.46	30.00	1.75E+12		-6.24E+11	8.59E+11
	316.51	82.81	6.55E+11		1.77E+10	3.21E+11
	468.07	47.83	1.51E+12		-1.18E+11	7.38E+11
	588.58	4.51	1.70E+13		-2.10E+13	8.28E+12
	604.41	8.23	1.38E+13		-2.74E+13	6.80E+12
	612.47	5.31	2.97E+13		-4.36E+13	1.46E+13
@ TL-201	135.34	2.56	1.00E+26	1.00E+26	1.00E+26	1.00E+20

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
@	TL-201	167.43		10.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	HG-203	279.20		81.46	1.00E+26	1.00E+26	1.00E+26	1.00E+20
+	TL-208	277.36		6.31	1.84E+00	1.49E-01	-7.66E-01	9.03E-01
		510.77		22.60	8.75E-01		1.16E+00	4.29E-01
		583.19	*	84.50	1.49E-01		3.54E-01	7.20E-02
		763.13		1.81	9.63E+00		-5.41E+00	4.66E+00
		860.56		12.42	1.56E+00		1.79E-01	7.54E-01
	PB-210	46.54		4.25	5.83E+00	5.83E+00	3.98E+00	2.87E+00
	BI-211	351.06		12.91	2.02E+00	2.02E+00	-1.86E+00	9.98E-01
	PB-211	404.85		3.78	3.88E+00	3.88E+00	-8.17E-01	1.90E+00
		427.09		1.76	8.60E+00		-2.46E+00	4.21E+00
		704.64		0.46	3.45E+01		9.14E+00	1.67E+01
		766.51		0.62	3.02E+01		4.63E+00	1.46E+01
		832.01		3.52	5.18E+00		-9.28E-01	2.51E+00
	BI-212	727.33		6.58	2.84E+00	2.84E+00	1.35E+00	1.38E+00
		785.37		1.10	1.70E+01		3.11E+00	8.26E+00
		1078.62		0.56	3.73E+01		4.49E+00	1.80E+01
		1620.50		1.49	1.07E+01		-6.94E-01	5.01E+00
+	PB-212	115.18		0.59	1.33E+01	2.12E-01	3.06E+00	6.53E+00
		238.63	*	43.30	2.12E-01		1.17E+00	1.04E-01
		300.09		3.28	3.95E+00		-9.59E+00	1.94E+00
+	BI-214	609.31	*	44.80	2.38E-01	2.38E-01	3.43E+00	1.14E-01
		665.45		1.29	4.72E+01		-2.98E+00	2.34E+01
		768.36		4.80	4.10E+00		2.93E+00	1.99E+00
		806.17		1.22	1.50E+01		-1.55E+01	7.25E+00
		934.06		3.03	8.17E+00		5.04E+00	3.97E+00
		1120.29	*	14.80	1.02E+00		3.56E+00	4.84E-01
		1155.19		1.64	1.26E+01		-3.57E+00	6.04E+00
		1207.68		0.49	4.28E+01		7.33E+00	2.06E+01
		1238.11		5.86	4.14E+00		2.90E+00	2.00E+00
		1280.96		1.44	1.21E+01		-7.56E-01	5.74E+00
		1377.67		3.92	5.60E+00		4.06E+00	2.68E+00
		1385.31		0.89	2.03E+01		-1.14E+01	9.63E+00
		1401.50		1.55	1.10E+01		-5.39E+00	5.21E+00
		1407.98		2.80	7.08E+00		3.94E+00	3.37E+00
		1415.80		0.48	3.02E+01		-2.26E+01	1.41E+01
		1509.23		2.12	9.00E+00		2.85E+00	4.27E+00
		1583.22		0.70	2.74E+01		2.01E+00	1.30E+01
		1661.28		1.14	1.35E+01		7.51E+00	6.27E+00
		1729.59		2.88	7.29E+00		6.73E+00	3.45E+00
		1764.49	*	15.36	4.85E-01		3.99E+00	2.06E-01
		1847.42		2.04	1.01E+01		5.81E+00	4.78E+00
+	PB-214	53.23		1.11	1.34E+01	2.70E-01	-1.92E+01	6.60E+00
		241.98	*	7.50	1.11E+00		3.59E+00	5.44E-01
		258.79		0.55	2.00E+01		5.10E+00	9.79E+00
		295.21	*	18.50	5.74E-01		3.35E+00	2.81E-01
		351.92	*	35.80	2.70E-01		3.57E+00	1.31E-01
		785.91		0.85	2.22E+01		-4.03E+00	1.07E+01
		839.03		0.63	3.07E+01		7.28E+00	1.49E+01
	RN-219	130.59		0.12	8.31E+01	1.11E+00	3.69E+01	4.09E+01
		271.23		10.80	1.11E+00		3.36E-01	5.46E-01
		401.81		6.37	2.30E+00		-5.61E-01	1.13E+00
	RN-220	549.73		0.11	1.41E+02	1.41E+02	6.27E-01	6.85E+01

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	RA-223	122.32		1.19	7.73E+00	8.71E-01	-2.16E+00	3.80E+00
		144.23		3.22	3.03E+00		2.58E-01	1.49E+00
		154.21		5.62	1.77E+00		3.13E-01	8.69E-01
		158.63		0.69	1.37E+01		-5.54E+00	6.75E+00
		179.54		0.15	6.73E+01		-9.81E+01	3.31E+01
		269.46		13.70	8.71E-01		1.66E-01	4.28E-01
		288.18		0.16	7.52E+01		-2.99E+02	3.69E+01
		323.87		3.93	3.23E+00		-9.12E-01	1.58E+00
		328.40		0.21	6.46E+01		3.90E+01	3.17E+01
		338.28		2.79	5.18E+00		5.06E+00	2.54E+00
		342.90		0.22	5.93E+01		-5.27E+01	2.90E+01
		346.80		0.18	7.15E+01		-4.93E+02	3.50E+01
		371.68		0.48	2.63E+01		-8.10E+00	1.28E+01
	RA-224	240.99		3.97	4.69E+00	4.69E+00	2.03E+01	2.32E+00
+	RA-226	186.10	*	3.50	2.46E+00	2.46E+00	5.85E+00	1.20E+00
	TH-227	50.13		8.00	1.95E+00	1.07E+00	-8.70E-01	9.60E-01
		79.72		1.89	6.62E+00		-3.46E+00	3.27E+00
		93.93		1.37	7.85E+00		4.51E+00	3.87E+00
		210.65		1.10	1.02E+01		6.50E+00	5.04E+00
		235.97		12.70	1.07E+00		-1.76E+00	5.29E-01
		256.25		7.01	1.51E+00		-2.80E-01	7.40E-01
		286.12		1.54	7.88E+00		-3.79E+00	3.87E+00
		300.00		2.67	5.37E+00		-1.03E+01	2.64E+00
		304.51		1.23	9.84E+00		-2.39E+01	4.82E+00
		329.85		2.69	5.08E+00		1.61E+00	2.49E+00
		334.38		1.05	1.23E+01		-4.96E+00	6.01E+00
+	AC-228	99.50		1.28	6.73E+00	4.67E-01	-4.45E+00	3.31E+00
		129.07		2.45	4.06E+00		2.00E+00	2.00E+00
		153.98		0.74	1.34E+01		2.42E+00	6.59E+00
		209.25		3.88	2.87E+00		1.43E+00	1.41E+00
		270.24		3.43	3.46E+00		3.50E-01	1.70E+00
		327.90		3.06	4.40E+00		2.25E+00	2.16E+00
		332.37		0.40	3.23E+01		-1.12E+01	1.58E+01
		338.32	*	11.25	1.05E+00		1.17E+00	5.12E-01
		409.46		1.94	7.75E+00		-1.62E-01	3.80E+00
		463.01		4.44	3.89E+00		1.12E+00	1.91E+00
		508.96		0.47	4.18E+01		5.04E+01	2.05E+01
		562.50		0.87	1.83E+01		1.05E-01	8.89E+00
		755.32		1.00	1.75E+01		5.75E+00	8.49E+00
		772.29		1.50	1.31E+01		8.66E+00	6.34E+00
		782.14		0.50	3.70E+01		6.49E+00	1.79E+01
		794.95		4.34	5.27E+00		3.52E+00	2.57E+00
		830.49		0.55	3.28E+01		-8.93E+00	1.58E+01
		835.71		1.68	1.12E+01		6.31E-01	5.43E+00
		840.38		0.94	2.04E+01		1.76E+00	9.88E+00
		904.20		0.78	2.84E+01		-2.86E+01	1.38E+01
		911.21	*	26.60	4.67E-01		9.41E-01	2.21E-01
		964.77		5.11	5.45E+00		-1.64E+00	2.66E+00
		968.97	*	16.20	8.82E-01		1.21E+00	4.20E-01
		1247.08		0.50	3.51E+01		-5.32E+01	1.67E+01
		1459.14		0.80	5.55E+01		-2.73E+01	2.72E+01
		1495.91		0.89	2.12E+01		1.12E+01	1.00E+01
		1580.54		0.61	2.92E+01		-3.32E+00	1.37E+01

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	AC-228	1588.21		3.27	6.29E+00	4.67E-01	2.45E+00	2.98E+00
		1630.63		1.60	9.82E+00		-1.32E-01	4.58E+00
	TH-228	84.37		1.23	7.78E+00	7.78E+00	-2.23E+01	3.82E+00
		215.99		0.26	4.01E+01		-2.55E+01	1.97E+01
	TH-229	75.09		0.61	2.94E+01	2.41E+00	1.18E+02	1.45E+01
		86.35		3.90	2.92E+00		-1.02E+00	1.44E+00
		124.60		1.43	6.56E+00		-4.01E-01	3.23E+00
		136.99		1.18	8.12E+00		-2.88E+00	4.00E+00
		148.15		0.88	1.11E+01		-9.03E-01	5.48E+00
		154.34		0.77	1.29E+01		2.29E+00	6.35E+00
		156.41		1.19	8.26E+00		1.01E-01	4.07E+00
		193.51		4.41	2.41E+00		-3.30E+00	1.19E+00
		204.69		0.60	1.71E+01		-1.03E+01	8.41E+00
		210.85		2.77	4.08E+00		2.58E+00	2.01E+00
	PA-231	283.69		1.70	7.20E+00	5.27E+00	2.27E+00	3.53E+00
		300.07		2.46	5.27E+00		-1.28E+01	2.58E+00
		302.65		2.20	5.71E+00		-2.06E+01	2.80E+00
		330.06		1.40	9.57E+00		-1.31E+00	4.69E+00
	TH-231	81.23		0.89	1.13E+01	1.45E+00	-2.45E+01	5.55E+00
		84.21		6.60	1.45E+00		-4.16E+00	7.14E-01
		89.95		0.94	1.15E+01		-4.07E+00	5.67E+00
+	TH-232	63.81	*	0.27	3.68E+01	3.68E+01	-4.46E+00	1.80E+01
	U-232	57.78		0.20	9.14E+01	9.14E+01	9.44E+01	4.51E+01
		129.08		0.07	1.57E+02		7.72E+01	7.74E+01
	PA-233	75.35		1.39	1.28E+01	3.14E-01	5.15E+01	6.36E+00
		86.81		1.97	5.66E+00		-2.08E+00	2.79E+00
		103.97		0.87	9.16E+00		-2.67E+00	4.49E+00
		271.48		0.33	3.67E+01		1.11E+01	1.80E+01
		300.34		6.62	1.96E+00		-4.75E+00	9.61E-01
		312.17		38.60	3.14E-01		2.77E-02	1.54E-01
		340.81		4.47	3.21E+00		-1.28E+00	1.58E+00
		375.45		0.68	1.93E+01		1.93E+00	9.44E+00
		398.62		1.39	1.02E+01		1.66E+00	5.00E+00
		415.76		1.75	8.77E+00		-5.18E-02	4.29E+00
	U-233	42.44		0.09	2.33E+02	2.33E+02	-1.28E+02	1.14E+02
		54.70		0.02	8.09E+02		-5.92E+02	3.98E+02
		97.13		0.02	4.31E+02		-4.27E+02	2.12E+02
	PA-234	62.70	*	1.55	6.41E+00	5.55E-01	-7.77E-01	3.14E+00
		99.86		3.19	2.71E+00		-1.18E+00	1.33E+00
		125.46		0.78	1.21E+01		-4.67E-01	5.94E+00
		131.30		18.00	5.55E-01		2.75E-01	2.73E-01
		140.50		0.81	1.19E+01		-8.44E-01	5.84E+00
		152.71		5.97	1.66E+00		3.89E-01	8.17E-01
		159.48		0.65	1.47E+01		-6.06E+00	7.21E+00
		170.85		0.50	1.91E+01		-8.21E+00	9.41E+00
		186.15	*	1.76	4.89E+00		1.16E+01	2.40E+00
		193.73		0.49	2.16E+01		-2.85E+01	1.06E+01
		200.97		0.90	1.17E+01		3.09E-01	5.75E+00
		203.12		1.23	8.46E+00		-3.98E+00	4.16E+00
		227.00		9.99	1.10E+00		-6.05E-03	5.40E-01
		245.37		0.75	1.73E+01		-1.42E+01	8.54E+00
		249.22		2.47	4.32E+00		-6.73E+00	2.12E+00
		272.28		1.08	1.11E+01		3.12E+00	5.46E+00

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	PA-234	293.79		2.99	6.39E+00	5.55E-01	-4.39E+00	3.16E+00
		330.40		0.77	1.74E+01		-2.38E+00	8.54E+00
		369.50		2.47	5.12E+00		-6.38E-01	2.50E+00
		372.00		1.21	1.05E+01		-3.08E+00	5.12E+00
		458.68		1.13	1.53E+01		4.34E+00	7.50E+00
		506.75		1.29	1.45E+01		8.75E+00	7.09E+00
		513.40		1.10	1.77E+01		1.97E+01	8.69E+00
		521.40		0.74	2.09E+01		-1.16E+01	1.02E+01
		565.20		1.03	1.64E+01		1.05E+01	8.00E+00
		569.32		11.80	1.38E+00		-2.29E-02	6.70E-01
		602.60		0.54	3.96E+01		-1.01E+01	1.94E+01
		663.90		0.54	1.13E+02		9.07E+02	5.62E+01
		666.50		1.16	4.57E+01		-4.66E+00	2.26E+01
		669.70		0.99	1.58E+01		-9.79E+00	7.65E+00
		692.60		1.24	1.19E+01		-1.51E+00	5.72E+00
		699.03		3.61	4.24E+00		3.17E-01	2.05E+00
		705.90		2.27	7.09E+00		2.53E+00	3.43E+00
		730.90		0.63	2.96E+01		1.47E+01	1.44E+01
		733.39		6.90	2.46E+00		-5.65E-01	1.19E+00
		738.00		1.15	1.39E+01		-3.29E+00	6.74E+00
		742.81		2.06	7.65E+00		-5.43E-01	3.69E+00
		755.00		1.22	1.41E+01		2.07E+00	6.82E+00
		780.40		0.90	1.92E+01		-7.86E+00	9.26E+00
		786.27		1.19	1.58E+01		-2.88E+00	7.68E+00
		794.90		1.34	1.71E+01		1.14E+01	8.32E+00
		796.10	*	2.58	4.79E+00		9.34E+00	2.28E+00
		805.52		3.14	5.80E+00		-6.86E+00	2.81E+00
		819.20		1.88	9.09E+00		-1.07E+00	4.39E+00
		824.65		3.12	5.77E+00		1.76E-01	2.79E+00
		831.50		4.12	4.35E+00		-1.19E+00	2.10E+00
		876.00		2.52	8.19E+00		1.13E+00	3.97E+00
		880.50		10.40	2.07E+00		7.16E-01	1.00E+00
		883.24		9.58	2.17E+00		-9.96E-03	1.05E+00
		898.67		3.24	6.34E+00		-1.51E+00	3.07E+00
		926.00		16.80	1.25E+00		-1.31E+00	6.07E-01
		946.18		15.00	1.44E+00		-5.32E-02	6.97E-01
		980.48		5.15	3.69E+00		-4.81E+00	1.78E+00
		984.20		1.62	1.22E+01		2.95E-01	5.88E+00
		1028.70		0.57	3.55E+01		-8.27E-01	1.71E+01
		1083.20		0.50	4.27E+01		3.28E+00	2.06E+01
		1352.90		1.15	1.31E+01		0.00E+00	6.13E+00
		1393.90		2.06	7.11E+00		-4.34E+00	3.33E+00
		1668.40		0.76	1.76E+01		-2.60E-01	8.07E+00
		1693.80		0.69	2.12E+01		1.58E+00	9.79E+00
	PA-234M	766.36		0.29	6.36E+01	2.55E+01	9.76E+00	3.09E+01
		811.00		0.51	3.32E+01		-1.40E+01	1.60E+01
		1001.03		0.84	2.55E+01		6.79E+00	1.23E+01
+	TH-234	63.29	*	4.84	2.05E+00	1.99E+00	-2.49E-01	1.01E+00
		83.30		0.08	1.25E+02		-4.55E+02	6.16E+01
		92.59		5.58	1.99E+00		1.76E+00	9.80E-01
		112.81		0.28	2.87E+01		8.09E+00	1.41E+01
	U-234	53.20		0.12	1.21E+02	1.21E+02	-1.73E+02	5.96E+01
		120.90		0.03	2.64E+02		-1.37E+02	1.30E+02

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
+	U-235	109.16		1.54	5.11E+00	1.50E-01	-3.88E-01	2.51E+00
		143.76		10.96	8.87E-01		8.62E-03	4.36E-01
		163.36		5.08	1.93E+00		3.32E-01	9.47E-01
		185.71	*	57.20	1.50E-01		3.58E-01	7.37E-02
		194.94		0.63	1.70E+01		-9.02E+00	8.34E+00
		202.11		1.08	9.62E+00		-4.78E+00	4.73E+00
		205.31		5.01	2.08E+00		-8.18E-01	1.02E+00
+	NP-237	57.10		0.39	3.94E+01	7.56E-01	-1.44E+01	1.94E+01
		86.48	*	12.40	7.56E-01		1.13E+00	3.72E-01
		94.64		0.60	1.74E+01		1.03E+01	8.57E+00
		143.25		0.43	2.26E+01		-3.75E-01	1.11E+01
	@ NP-239	106.12		27.20	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	209.75		3.42	1.00E+26		1.00E+26	1.00E+20
	@	228.18		10.76	1.00E+26		1.00E+26	1.00E+20
	@	277.60		14.38	1.00E+26		1.00E+26	1.00E+20
	@	334.31		2.07	1.00E+26		1.00E+26	1.00E+20
+	AM-241	59.54	*	35.90	4.09E-01	4.09E-01	7.62E-01	2.02E-01
	@ CM-241	132.41		3.90	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	165.01		3.40	1.00E+26		1.00E+26	1.00E+20
	@	205.88		2.67	1.00E+26		1.00E+26	1.00E+20
	@	430.63		4.06	1.00E+26		1.00E+26	1.00E+20
	@	463.27		1.23	1.00E+26		1.00E+26	1.00E+20
	@	471.80		71.30	1.00E+26		1.00E+26	1.00E+20
	@	636.88		1.53	1.00E+26		1.00E+26	1.00E+20
+	AM-243	74.66	*	68.20	1.43E-01	1.43E-01	5.73E-01	7.04E-02

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

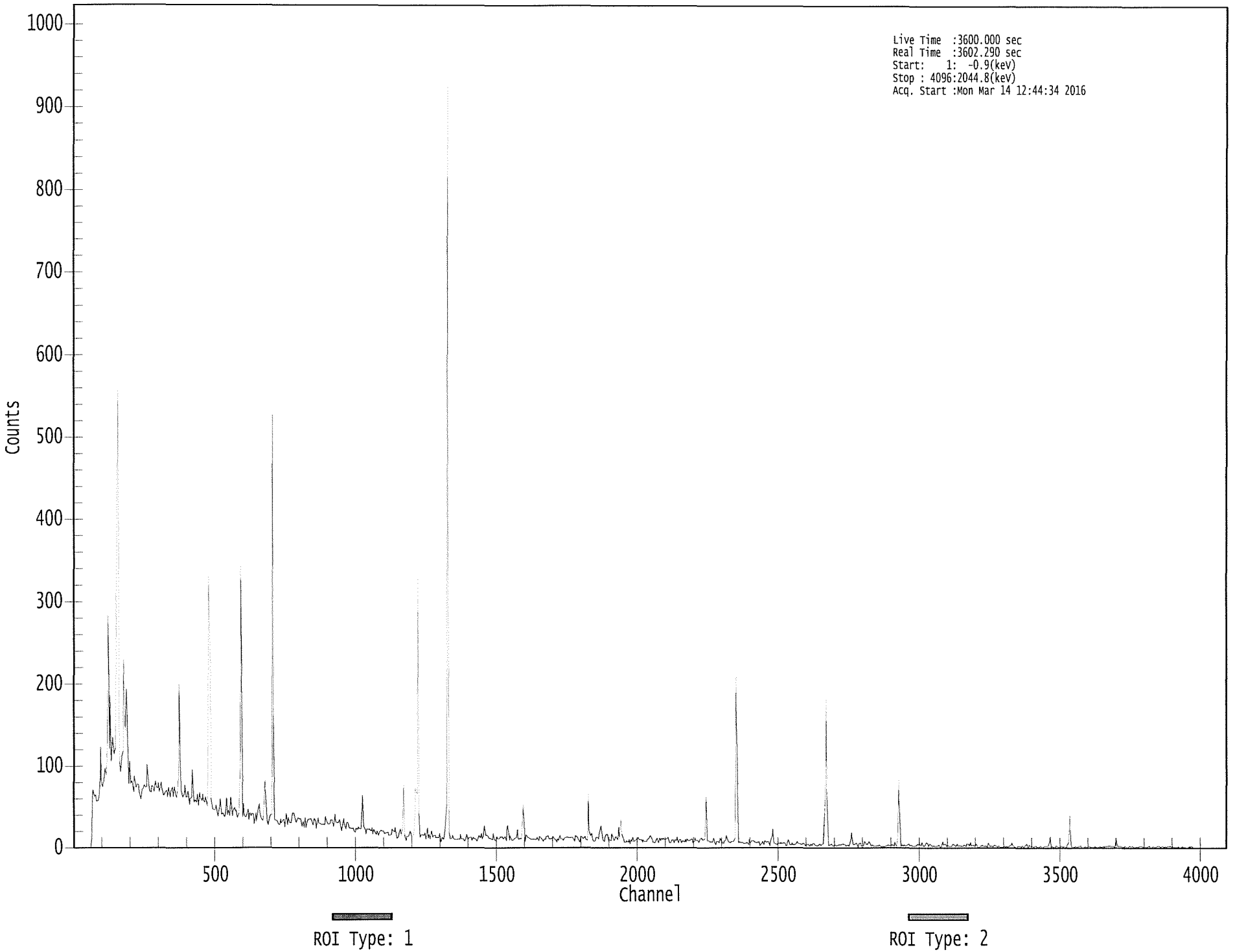
Creation Date	Comment	User

No Data Review Comments Entered.

Analysis Report for LCSWA19JVR2

Tetra Tech TO# 160115-1

0000007045.CNF



011487

SOUTHWEST RESEARCH INSTITUTE
CLIENT: Tetra Tech
TASK ORDER#: 160115-1
SRR#: 56591, 56639, 56785, 56876
SDG: 588049
VTSR: 11.20.15, 12.01.15, 12.01.15, 01.15.16
PROJECT#: 21431.01.001

BULK SAMPLES GAMMA SPEC RAW DATA

Apex™

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 588049R2
Sample Description	: Tetra Tech TO# 160115-1
Sample Type	: Soil
Sample Size	: 3.059E+02 grams
Facility	: Default
Sample Taken On	: 1/19/2016 1:05:00PM
Acquisition Started	: 3/14/2016 3:05:16PM
Procedure	: Raised 300g can soil
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3686.0 seconds
Dead Time	: 2.33 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7047

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

ENERGY CALIBRATION REPORT

Detector Name : DET01

ENERGY CALIBRATION COEFFICIENTS

Energy Calibrate Performed on : 11/30/2015 7:51:04PM
by : Administrator
Energy Calibrate Type : POLY

Energy (keV) = -1.445 + 0.500*ch + -1.06E-07*ch^2 + 0.00E+00*ch^3

SHAPE CALIBRATION COEFFICIENTS

Shape Calibrate Performed on : 11/30/2015 7:51:04PM
by : Administrator

FWHM = 0.610 + 3.62E-02 *E^1/2

LOW TAIL = 0.00E+00 + 0.00E+00*E

ENERGY CALIBRATION RESULTS TABLE

Centroid Channel	Centroid error	Energy (keV)
121.97	0.13	59.54
1326.58	0.01	661.66
2669.40	0.03	1332.50

SHAPE CALIBRATION RESULTS TABLE

Energy (keV)	FWHM channels	FWHM error	TAIL channels	TAIL error
59.54	2.12	0.24	0.00	0.00
661.66	3.08	0.02	0.00	0.00
1332.50	3.90	0.06	0.00	0.00

EFFICIENCY CALIBRATION REPORT

Detector Name : DET01
Geometry Description : Raised 300gm Can Soil
Efficiency Calibration Performed on : 12/20/2005 11:10:05AM
by : Administrator
Efficiency Type Used : EMPIRICAL

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

Efficiency Triplets

Energy	*% Efficiency*	*Error*	*Computed*	*Error*	*% Difference*
59.50	6.77E-01	2.04E-02			
88.00	6.93E-01	2.10E-02			
122.10	7.30E-01	2.28E-02			
165.90	6.33E-01	3.05E-02			
391.70	3.38E-01	1.74E-02			
661.70	2.30E-01	6.91E-03			
898.00	1.91E-01	8.56E-03			
1173.20	1.46E-01	4.40E-03			
1332.50	1.33E-01	3.99E-03			
1836.00	1.03E-01	3.36E-03			

DUAL Efficiency Calibration Equation

Single Equation Terms

Offset :	-3.20E+01
Slope :	1.70E+01
Quadratic :	-3.77E+00
Cubic :	3.53E-01
4th Order :	-1.23E-02
5th Order :	0.00E+00
6th Order :	0.00E+00
7th Order :	0.00E+00
8th Order :	0.00E+00
9th Order :	0.00E+00

EMPIRICAL Efficiency Calibration Equation

Empirical Equation Terms

Scaling :	9.48E+02
Offset :	-6.35E+00
Slope :	8.02E-01
Quadratic :	2.35E-02
Cubic :	-1.58E-02
4th Order :	-1.23E-02
5th Order :	0.00E+00

LINEAR Efficiency Calibration Equation

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

Linear Equation Terms

Offset	-1.79E-04
Slope	-2.75E+00
Quadratic	1.74E+02
Cubic	-1.42E+04
4th Order	2.49E+05
5th Order	6.29E+06
6th Order	0.00E+00
7th Order	0.00E+00
8th Order	0.00E+00
9th Order	0.00E+00

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

PEAK LOCATE REPORT

Peak Locate Performed on : 3/30/2016 1:47:19PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 4.30

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	36.41	75.71	0.2223	14.29
2	46.61	96.12	0.3025	9.61
3	50.17	103.22	0.3857	4.92
4	67.77	138.44	0.1218	37.85
5	74.93	152.64	0.1414	32.22
6	77.16	157.35	0.1208	44.85
7	81.15	165.32	0.1791	21.14
8	83.91	170.58	0.1402	29.54
9	87.34	177.48	0.1784	16.19
10	89.81	182.68	0.3120	6.52
11	94.74	192.37	0.2084	10.54
12	97.81	198.39	0.3515	5.81
13	144.12	291.14	0.1346	33.27
14	154.30	311.52	0.1494	23.34
15	158.73	320.37	0.3534	5.02
16	186.29	375.51	0.0981	52.69
17	210.77	424.48	0.2745	6.95
18	236.13	475.21	0.1017	52.29
19	242.15	487.23	0.0766	90.79
20	254.05	510.59	0.2824	7.40
21	256.35	515.67	0.1288	33.48
22	259.10	521.33	0.2113	14.00
23	269.62	542.04	0.1161	47.22
24	271.39	545.97	0.1455	37.10

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
25	274.70	552.74	0.2563	7.18
26	286.27	575.50	0.2338	9.22
27	295.38	593.71	0.0587	148.53
28	300.19	603.32	0.1357	28.35
29	302.81	608.47	0.1981	13.45
30	314.95	632.87	0.3436	4.96
31	324.08	651.15	0.1417	25.46
32	330.04	663.07	0.1425	24.53
33	334.40	671.69	0.2412	7.85
34	338.46	679.87	0.1644	18.31
35	352.07	707.14	0.0472	211.86
36	386.98	776.66	0.3174	6.51
37	389.04	781.38	0.2361	9.96
38	402.05	807.07	0.1171	35.63
39	405.16	813.34	0.1452	23.82
40	427.35	857.75	0.1913	12.72
41	445.21	893.47	0.2218	9.39
42	455.07	913.21	0.2219	9.72
43	462.24	927.55	0.2540	6.56
44	470.02	943.08	0.2754	6.40
45	474.53	952.04	0.3125	5.36
46	480.83	964.75	0.2045	11.07
47	487.39	977.88	0.1989	12.03
48	511.04	1025.20	0.1847	8.15
49	533.89	1070.91	0.2723	6.28
50	580.48	1164.15	0.2055	10.34
51	609.63	1222.48	0.0457	189.04
52	665.83	1334.93	0.1146	33.46
53	683.95	1371.19	0.3326	4.64
54	703.35	1410.01	0.1912	12.13
55	720.25	1443.83	0.1834	12.72
56	742.92	1489.21	0.2756	5.62
57	753.36	1510.10	0.2815	4.68
58	768.80	1540.99	0.0854	57.94
59	786.33	1576.07	0.1332	23.40
60	806.60	1616.65	0.1214	25.65
61	821.65	1646.94	0.2877	5.54
62	826.60	1656.83	0.2753	5.40
63	832.41	1668.33	0.1412	19.69
64	839.50	1682.50	0.1650	13.40
65	934.54	1872.72	0.0947	42.37
66	964.68	1933.04	0.1946	10.73
67	1052.44	2108.72	0.2078	8.76
68	1070.65	2145.17	0.2253	7.70
69	1104.82	2213.57	0.2735	4.72
70	1120.88	2245.73	0.0629	90.51
71	1134.21	2272.41	0.2200	7.70
72	1155.80	2315.63	0.1164	25.59
73	1182.67	2369.41	0.2553	5.47
74	1208.24	2420.61	0.1702	11.73
75	1238.77	2481.74	0.0807	53.93
76	1281.67	2567.63	0.1219	22.92
77	1378.37	2761.33	0.0892	41.56
78	1385.92	2776.46	0.1449	15.40
79	1402.18	2808.88	0.1224	22.32

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
80	1408.66	2821.95	0.1020	31.71
81	1509.94	3024.70	0.1106	25.90
82	1539.35	3083.59	0.1896	9.32
83	1544.01	3093.06	0.2127	7.79
84	1584.03	3173.09	0.1479	14.91
85	1595.64	3196.35	0.2255	6.54
86	1600.05	3205.28	0.2124	7.27
87	1662.01	3329.27	0.1278	19.30
88	1684.91	3375.13	0.2042	7.28
89	1693.62	3392.57	0.2211	5.08
90	1730.36	3466.17	0.0973	31.40
91	1765.24	3536.03	0.0629	75.50
92	1839.14	3684.05	0.1867	8.06
93	1848.19	3702.19	0.1067	24.92
94	1873.82	3753.52	0.2016	7.73
95	1896.43	3798.82	0.2766	4.56

? = Adjacent peak noted
Errors quoted at 1.000 sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 3/30/2016 1:47:19PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	36.41	72 -	80	75.71	4.14E+03	202.82	2.55E+04	1.10
	2	46.61	90 -	100	96.12	1.77E+03	213.89	2.84E+04	0.99
	3	50.17	100 -	106	103.22	-4.74E+02	158.85	1.90E+04	0.67
	4	67.77	131 -	142	138.44	1.30E+04	281.78	4.15E+04	1.10
M	5	74.93	145 -	186	152.75	5.63E+03	154.14	2.79E+04	0.86
m	6	77.16	145 -	186	157.23	1.03E+04	278.15	2.74E+04	0.87
m	7	81.15	145 -	186	165.19	2.26E+03	68.83	2.64E+04	0.88
m	8	83.91	145 -	186	170.71	6.67E+03	181.56	2.57E+04	0.88
m	9	87.34	145 -	186	177.57	3.67E+03	103.45	2.90E+04	0.89
m	10	89.81	145 -	186	182.52	4.95E+02	35.61	2.83E+04	0.89
M	11	94.74	187 -	206	192.39	-3.59E+03	378.50	2.09E+04	0.78
m	12	97.81	187 -	206	198.51	-1.69E+02	57.80	1.93E+04	0.78
	13	144.12	283 -	296	291.14	1.22E+04	335.66	5.91E+04	1.21
	14	154.30	308 -	317	311.52	8.46E+03	269.17	4.27E+04	1.27
	15	158.73	318 -	328	320.37	-3.40E+03	270.90	4.95E+04	0.50
	16	186.29	366 -	384	375.51	2.52E+04	394.48	6.69E+04	1.28
	17	210.77	421 -	433	424.48	4.76E+02	251.26	3.80E+04	1.08
	18	236.13	468 -	482	475.21	-1.12E+04	317.83	6.41E+04	0.94
	19	242.15	483 -	496	487.23	2.57E+04	314.71	4.32E+04	1.15
M	20	254.05	508 -	530	511.04	1.98E+03	102.46	1.47E+04	1.21
m	21	256.35	508 -	530	515.65	7.89E+03	138.57	1.64E+04	1.21
m	22	259.10	508 -	530	521.16	2.20E+03	102.08	1.60E+04	1.21

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	23	269.62	536 -	562	542.20	1.57E+04	161.27	1.47E+04	1.20
m	24	271.39	536 -	562	545.73	1.25E+04	149.03	1.47E+04	1.20
m	25	274.70	536 -	562	552.36	1.29E+03	92.82	1.47E+04	1.20
	26	286.27	564 -	585	575.50	-8.80E+04	423.05	1.27E+05	0.50
M	27	295.38	588 -	618	593.72	8.67E+04	310.03	1.21E+04	1.22
m	28	300.19	588 -	618	603.34	4.77E+03	101.23	1.28E+04	1.22
m	29	302.81	588 -	618	608.59	2.69E+03	90.04	1.24E+04	1.23
	30	314.95	625 -	640	632.87	4.50E+02	194.45	2.08E+04	1.11
	31	324.08	646 -	654	651.15	1.98E+03	143.23	1.28E+04	1.12
M	32	330.04	656 -	685	663.07	1.10E+03	168.14	1.20E+04	1.03
m	33	334.40	656 -	685	671.78	1.89E+02	30.65	9.79E+03	1.04
m	34	338.46	656 -	685	679.90	8.65E+02	131.84	1.03E+04	1.04
	35	352.07	696 -	714	707.14	1.62E+05	449.21	2.06E+04	1.37
M	36	386.98	766 -	785	776.99	1.10E+03	73.46	7.38E+03	1.30
m	37	389.04	766 -	785	781.11	1.48E+03	79.62	8.40E+03	1.31
M	38	402.05	800 -	824	807.12	6.09E+03	108.13	8.50E+03	1.35
m	39	405.16	800 -	824	813.35	4.29E+03	96.30	8.46E+03	1.35
	40	427.35	855 -	868	857.75	1.88E+03	147.60	1.17E+04	1.51
	41	445.21	890 -	901	893.47	7.07E+02	115.92	7.96E+03	1.32
	42	455.07	907 -	917	913.21	8.11E+02	108.09	7.02E+03	1.33
	43	462.24	921 -	937	927.55	-2.90E+02	142.13	1.11E+04	1.49
M	44	470.02	939 -	959	943.13	-3.88E+02	120.06	3.57E+03	0.82
m	45	474.53	939 -	959	952.15	-1.32E+02	43.45	3.65E+03	0.83
	46	480.83	960 -	969	964.75	3.04E+02	95.86	5.92E+03	1.29
	47	487.39	970 -	987	977.88	1.82E+02	137.40	9.84E+03	1.23
	48	511.04	1013 -	1033	1025.20	3.70E+03	150.56	9.25E+03	2.95
	49	533.89	1065 -	1075	1070.91	4.55E+02	87.12	4.60E+03	1.46
	50	580.48	1159 -	1174	1164.15	1.02E+03	109.89	6.14E+03	1.61
	51	609.63	1215 -	1229	1222.48	1.24E+05	364.29	5.12E+03	1.53
	52	665.83	1329 -	1341	1334.93	3.69E+03	95.86	3.33E+03	1.46
	53	683.95	1364 -	1379	1371.19	2.20E+02	85.62	3.95E+03	0.86
	54	703.35	1405 -	1416	1410.01	1.34E+03	80.15	3.18E+03	1.47
	55	720.25	1438 -	1453	1443.83	8.52E+02	89.45	3.97E+03	1.42
	56	742.92	1478 -	1501	1489.21	3.61E+02	117.41	6.10E+03	1.88
	57	753.36	1504 -	1515	1510.10	3.27E+02	68.92	2.76E+03	1.94
	58	768.80	1528 -	1549	1540.99	1.19E+04	149.43	4.99E+03	1.57
	59	786.33	1564 -	1587	1576.07	2.52E+03	121.19	5.53E+03	1.64
	60	806.60	1611 -	1624	1616.65	2.74E+03	91.14	3.27E+03	1.70
M	61	821.65	1640 -	1675	1646.77	1.08E+01	18.38	2.09E+03	1.18
m	62	826.60	1640 -	1675	1656.68	3.07E+00	5.28	2.36E+03	1.18
m	63	832.41	1640 -	1675	1668.30	8.83E+01	150.19	2.66E+03	1.19
	64	839.50	1675 -	1687	1682.50	-9.65E+00	84.46	4.33E+03	1.40
	65	934.54	1866 -	1886	1872.72	6.07E+03	122.80	4.40E+03	1.66
	66	964.68	1926 -	1939	1933.04	6.36E+02	73.35	2.79E+03	1.77
	67	1052.44	2103 -	2114	2108.72	3.91E+02	58.23	1.88E+03	1.69
	68	1070.65	2138 -	2155	2145.17	5.72E+02	74.62	2.63E+03	1.83
	69	1104.82	2208 -	2220	2213.57	1.76E+02	58.65	1.98E+03	1.32
	70	1120.88	2237 -	2255	2245.73	2.60E+04	177.42	2.81E+03	1.81
	71	1134.21	2265 -	2278	2272.41	4.25E+02	61.73	1.99E+03	1.61
	72	1155.80	2309 -	2324	2315.63	2.83E+03	82.12	2.18E+03	1.92
	73	1182.67	2365 -	2381	2369.41	4.05E+02	64.76	2.05E+03	1.43
	74	1208.24	2415 -	2428	2420.61	6.72E+02	58.88	1.64E+03	1.94
	75	1238.77	2471 -	2488	2481.74	9.40E+03	114.87	2.00E+03	1.84

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	76	1281.67	2559 -	2576	2567.63	2.23E+03	76.42	1.90E+03	1.95
M	77	1378.37	2753 -	2782	2761.25	6.07E+03	84.07	1.26E+03	1.96
m	78	1385.92	2753 -	2782	2776.37	1.19E+03	44.18	1.31E+03	1.96
M	79	1402.18	2801 -	2829	2808.93	1.89E+03	51.75	1.14E+03	1.96
m	80	1408.66	2801 -	2829	2821.90	3.56E+03	67.08	1.17E+03	1.97
	81	1509.94	3017 -	3031	3024.70	2.97E+03	78.17	1.79E+03	2.12
M	82	1539.35	3076 -	3103	3083.60	6.18E+02	39.56	1.41E+03	2.04
m	83	1544.01	3076 -	3103	3092.95	4.33E+02	34.64	1.36E+03	2.04
	84	1584.03	3166 -	3179	3173.09	8.20E+02	51.55	1.08E+03	1.91
M	85	1595.64	3188 -	3213	3196.34	3.05E+02	29.93	9.73E+02	1.92
m	86	1600.05	3188 -	3213	3205.17	3.50E+02	30.83	8.88E+02	1.93
	87	1662.01	3321 -	3338	3329.27	1.37E+03	52.09	7.07E+02	2.09
	88	1684.91	3369 -	3380	3375.13	2.53E+02	30.54	4.25E+02	1.99
	89	1693.62	3382 -	3398	3392.57	1.16E+02	39.61	7.85E+02	2.52
	90	1730.36	3455 -	3475	3466.17	3.62E+03	69.30	5.76E+02	2.27
	91	1765.24	3518 -	3545	3536.03	1.93E+04	144.71	7.03E+02	2.16
	92	1839.14	3672 -	3691	3684.05	-5.74E+02	47.67	1.42E+03	0.85
	93	1848.19	3693 -	3712	3702.19	2.24E+03	61.07	7.44E+02	2.38
	94	1873.82	3744 -	3765	3753.52	2.78E+02	38.25	5.64E+02	1.90
	95	1896.43	3794 -	3809	3798.82	1.62E+02	32.09	4.82E+02	1.19

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 3/30/2016 1:47:19PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	36.41	72 -	80	4.14E+03	202.82	2.55E+04	3.16E+02
	2	46.61	90 -	100	1.77E+03	213.89	2.84E+04	3.45E+02
	3	50.17	100 -	106	-4.74E+02	158.85	1.90E+04	2.64E+02
	4	67.77	131 -	142	1.30E+04	281.78	4.15E+04	4.24E+02
M	5	74.93	145 -	186	5.63E+03	154.14	2.79E+04	3.88E+02
m	6	77.16	145 -	186	1.03E+04	278.15	2.74E+04	3.85E+02
m	7	81.15	145 -	186	2.26E+03	68.83	2.64E+04	3.78E+02
m	8	83.91	145 -	186	6.67E+03	181.56	2.57E+04	3.73E+02
m	9	87.34	145 -	186	3.67E+03	103.45	2.90E+04	3.96E+02
m	10	89.81	145 -	186	4.95E+02	35.61	2.83E+04	3.92E+02
M	11	94.74	187 -	206	-3.59E+03	378.50	2.09E+04	3.36E+02
m	12	97.81	187 -	206	-1.69E+02	57.80	1.93E+04	3.23E+02
	13	144.12	283 -	296	1.22E+04	335.66	5.91E+04	5.21E+02

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	14	154.30	308 -	317	8.46E+03	269.17	4.27E+04	4.16E+02
	15	158.73	318 -	328	-3.40E+03	270.90	4.95E+04	4.56E+02
	16	186.29	366 -	384	2.52E+04	394.48	6.69E+04	5.94E+02
	17	210.77	421 -	433	4.76E+02	251.26	3.80E+04	4.12E+02
	18	236.13	468 -	482	-1.12E+04	317.83	6.41E+04	5.51E+02
	19	242.15	483 -	496	2.57E+04	314.71	4.32E+04	4.46E+02
M	20	254.05	508 -	530	1.98E+03	102.46	1.47E+04	2.82E+02
m	21	256.35	508 -	530	7.89E+03	138.57	1.64E+04	2.98E+02
m	22	259.10	508 -	530	2.20E+03	102.08	1.60E+04	2.94E+02
M	23	269.62	536 -	562	1.57E+04	161.27	1.47E+04	2.82E+02
m	24	271.39	536 -	562	1.25E+04	149.03	1.47E+04	2.82E+02
m	25	274.70	536 -	562	1.29E+03	92.82	1.47E+04	2.82E+02
	26	286.27	564 -	585	-8.80E+04	423.05	1.27E+05	8.50E+02
M	27	295.38	588 -	618	8.67E+04	310.03	1.21E+04	2.56E+02
m	28	300.19	588 -	618	4.77E+03	101.23	1.28E+04	2.63E+02
m	29	302.81	588 -	618	2.69E+03	90.04	1.24E+04	2.59E+02
	30	314.95	625 -	640	4.50E+02	194.45	2.08E+04	3.18E+02
	31	324.08	646 -	654	1.98E+03	143.23	1.28E+04	2.24E+02
M	32	330.04	656 -	685	1.10E+03	168.14	1.20E+04	2.55E+02
m	33	334.40	656 -	685	1.89E+02	30.65	9.79E+03	2.30E+02
m	34	338.46	656 -	685	8.65E+02	131.84	1.03E+04	2.37E+02
	35	352.07	696 -	714	1.62E+05	449.21	2.06E+04	3.30E+02
M	36	386.98	766 -	785	1.10E+03	73.46	7.38E+03	2.00E+02
m	37	389.04	766 -	785	1.48E+03	79.62	8.40E+03	2.13E+02
M	38	402.05	800 -	824	6.09E+03	108.13	8.50E+03	2.14E+02
m	39	405.16	800 -	824	4.29E+03	96.30	8.46E+03	2.14E+02
	40	427.35	855 -	868	1.88E+03	147.60	1.17E+04	2.32E+02
	41	445.21	890 -	901	7.07E+02	115.92	7.96E+03	1.86E+02
	42	455.07	907 -	917	8.11E+02	108.09	7.02E+03	1.72E+02
	43	462.24	921 -	937	-2.90E+02	142.13	1.11E+04	2.35E+02
M	44	470.02	939 -	959	-3.88E+02	120.06	3.57E+03	1.39E+02
m	45	474.53	939 -	959	-1.32E+02	43.45	3.65E+03	1.41E+02
	46	480.83	960 -	969	3.04E+02	95.86	5.92E+03	1.55E+02
	47	487.39	970 -	987	1.82E+02	137.40	9.84E+03	2.25E+02
	48	511.04	1013 -	1033	3.70E+03	150.56	9.25E+03	2.27E+02
	49	533.89	1065 -	1075	4.55E+02	87.12	4.60E+03	1.39E+02
	50	580.48	1159 -	1174	1.02E+03	109.89	6.14E+03	1.73E+02
	51	609.63	1215 -	1229	1.24E+05	364.29	5.12E+03	1.56E+02
	52	665.83	1329 -	1341	3.69E+03	95.86	3.33E+03	1.22E+02
	53	683.95	1364 -	1379	2.20E+02	85.62	3.95E+03	1.39E+02
	54	703.35	1405 -	1416	1.34E+03	80.15	3.18E+03	1.17E+02
	55	720.25	1438 -	1453	8.52E+02	89.45	3.97E+03	1.39E+02
	56	742.92	1478 -	1501	3.61E+02	117.41	6.10E+03	1.91E+02
	57	753.36	1504 -	1515	3.27E+02	68.92	2.76E+03	1.09E+02
	58	768.80	1528 -	1549	1.19E+04	149.43	4.99E+03	1.68E+02
	59	786.33	1564 -	1587	2.52E+03	121.19	5.53E+03	1.81E+02
	60	806.60	1611 -	1624	2.74E+03	91.14	3.27E+03	1.23E+02
M	61	821.65	1640 -	1675	1.08E+01	18.38	2.09E+03	1.06E+02
m	62	826.60	1640 -	1675	3.07E+00	5.28	2.36E+03	1.13E+02
m	63	832.41	1640 -	1675	8.83E+01	150.19	2.66E+03	1.20E+02

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	64	839.50	1675 -	1687	-9.65E+00	84.46	4.33E+03	1.39E+02
	65	934.54	1866 -	1886	6.07E+03	122.80	4.40E+03	1.56E+02
	66	964.68	1926 -	1939	6.36E+02	73.35	2.79E+03	1.13E+02
	67	1052.44	2103 -	2114	3.91E+02	58.23	1.88E+03	9.01E+01
	68	1070.65	2138 -	2155	5.72E+02	74.62	2.63E+03	1.16E+02
	69	1104.82	2208 -	2220	1.76E+02	58.65	1.98E+03	9.40E+01
	70	1120.88	2237 -	2255	2.60E+04	177.42	2.81E+03	1.22E+02
	71	1134.21	2265 -	2278	4.25E+02	61.73	1.99E+03	9.57E+01
	72	1155.80	2309 -	2324	2.83E+03	82.12	2.18E+03	1.03E+02
	73	1182.67	2365 -	2381	4.05E+02	64.76	2.05E+03	1.01E+02
	74	1208.24	2415 -	2428	6.72E+02	58.88	1.64E+03	8.70E+01
	75	1238.77	2471 -	2488	9.40E+03	114.87	2.00E+03	1.01E+02
	76	1281.67	2559 -	2576	2.23E+03	76.42	1.90E+03	9.88E+01
M	77	1378.37	2753 -	2782	6.07E+03	84.07	1.26E+03	8.27E+01
m	78	1385.92	2753 -	2782	1.19E+03	44.18	1.31E+03	8.42E+01
M	79	1402.18	2801 -	2829	1.89E+03	51.75	1.14E+03	7.84E+01
m	80	1408.66	2801 -	2829	3.56E+03	67.08	1.17E+03	7.95E+01
	81	1509.94	3017 -	3031	2.97E+03	78.17	1.79E+03	9.22E+01
M	82	1539.35	3076 -	3103	6.18E+02	39.56	1.41E+03	8.73E+01
m	83	1544.01	3076 -	3103	4.33E+02	34.64	1.36E+03	8.57E+01
	84	1584.03	3166 -	3179	8.20E+02	51.55	1.08E+03	7.05E+01
M	85	1595.64	3188 -	3213	3.05E+02	29.93	9.73E+02	7.26E+01
m	86	1600.05	3188 -	3213	3.50E+02	30.83	8.88E+02	6.93E+01
	87	1662.01	3321 -	3338	1.37E+03	52.09	7.07E+02	6.03E+01
	88	1684.91	3369 -	3380	2.53E+02	30.54	4.25E+02	4.29E+01
	89	1693.62	3382 -	3398	1.16E+02	39.61	7.85E+02	6.27E+01
	90	1730.36	3455 -	3475	3.62E+03	69.30	5.76E+02	5.65E+01
	91	1765.24	3518 -	3545	1.93E+04	144.71	7.03E+02	6.76E+01
	92	1839.14	3672 -	3691	-5.74E+02	47.67	1.42E+03	8.78E+01
	93	1848.19	3693 -	3712	2.24E+03	61.07	7.44E+02	6.35E+01
	94	1873.82	3744 -	3765	2.78E+02	38.25	5.64E+02	5.66E+01
	95	1896.43	3794 -	3809	1.62E+02	32.09	4.82E+02	4.85E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 3/30/2016 1:47:19PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB
Peak Match Tolerance : 1.000 keV

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	36.41	72 -	80	75.71	4.14E+03	202.82	2.55E+04	I-125
	2	46.61	90 -	100	96.12	1.77E+03	213.89	2.84E+04	PB-210
	3	50.17	100 -	106	103.22	-4.74E+02	158.85	1.90E+04	TH-227
	4	67.77	131 -	142	138.44	1.30E+04	281.78	4.15E+04	CS-136
M	5	74.93	145 -	186	152.75	5.63E+03	154.14	2.79E+04	TH-229 AM-243 PA-233
m	6	77.16	145 -	186	157.23	1.03E+04	278.15	2.74E+04	.....
m	7	81.15	145 -	186	165.19	2.26E+03	68.83	2.64E+04	TH-231 BA-133
m	8	83.91	145 -	186	170.71	6.67E+03	181.56	2.57E+04	TH-231 TH-228 TH-234
m	9	87.34	145 -	186	177.57	3.67E+03	103.45	2.90E+04	PA-233 CD-109 EU-155 NP-237 CS-136 TH-229
m	10	89.81	145 -	186	182.52	4.95E+02	35.61	2.83E+04	TH-231
M	11	94.74	187 -	206	192.39	-3.59E+03	378.50	2.09E+04	NP-237 TH-227
m	12	97.81	187 -	206	198.51	-1.69E+02	57.80	1.93E+04	GD-153 U-233
	13	144.12	283 -	296	291.14	1.22E+04	335.66	5.91E+04	RA-223 U-235 NP-237
	14	154.30	308 -	317	311.52	8.46E+03	269.17	4.27E+04	TH-229 RA-223 AC-228
	15	158.73	318 -	328	320.37	-3.40E+03	270.90	4.95E+04	RA-223 PA-234
	16	186.29	366 -	384	375.51	2.52E+04	394.48	6.69E+04	PA-234 RA-226 U-235
	17	210.77	421 -	433	424.48	4.76E+02	251.26	3.80E+04	TH-229 TH-227
	18	236.13	468 -	482	475.21	-1.12E+04	317.83	6.41E+04	TH-227 NB-95m
	19	242.15	483 -	496	487.23	2.57E+04	314.71	4.32E+04	PB-214
M	20	254.05	508 -	530	511.04	1.98E+03	102.46	1.47E+04	.....
m	21	256.35	508 -	530	515.65	7.89E+03	138.57	1.64E+04	TH-227
m	22	259.10	508 -	530	521.16	2.20E+03	102.08	1.60E+04	PB-214
M	23	269.62	536 -	562	542.20	1.57E+04	161.27	1.47E+04	RA-223 AC-228
m	24	271.39	536 -	562	545.73	1.25E+04	149.03	1.47E+04	PA-233 RN-219 PA-234
m	25	274.70	536 -	562	552.36	1.29E+03	92.82	1.47E+04	.....
	26	286.27	564 -	585	575.50	-8.80E+04	423.05	1.27E+05	TH-227
M	27	295.38	588 -	618	593.72	8.67E+04	310.03	1.21E+04	PB-214 EU-152 IR-192
m	28	300.19	588 -	618	603.34	4.77E+03	101.23	1.28E+04	PB-212

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
									PA-231
									PA-233
									TH-227
m	29	302.81	588 -	618	608.59	2.69E+03	90.04	1.24E+04	BA-133
									PA-231
	30	314.95	625 -	640	632.87	4.50E+02	194.45	2.08E+04	.....
	31	324.08	646 -	654	651.15	1.98E+03	143.23	1.28E+04	RA-223
M	32	330.04	656 -	685	663.07	1.10E+03	168.14	1.20E+04	PA-231
									TH-227
									PA-234
m	33	334.40	656 -	685	671.78	1.89E+02	30.65	9.79E+03	TH-227
									NP-239
m	34	338.46	656 -	685	679.90	8.65E+02	131.84	1.03E+04	AC-228
									RA-223
	35	352.07	696 -	714	707.14	1.62E+05	449.21	2.06E+04	PB-214
M	36	386.98	766 -	785	776.99	1.10E+03	73.46	7.38E+03	.....
m	37	389.04	766 -	785	781.11	1.48E+03	79.62	8.40E+03	I-126
M	38	402.05	800 -	824	807.12	6.09E+03	108.13	8.50E+03	RN-219
									KR-87
m	39	405.16	800 -	824	813.35	4.29E+03	96.30	8.46E+03	I-134
									PB-211
	40	427.35	855 -	868	857.75	1.88E+03	147.60	1.17E+04	PB-211
									SB-125
	41	445.21	890 -	901	893.47	7.07E+02	115.92	7.96E+03	EU-154
	42	455.07	907 -	917	913.21	8.11E+02	108.09	7.02E+03	.....
	43	462.24	921 -	937	927.55	-2.90E+02	142.13	1.11E+04	CS-138
									AC-228
M	44	470.02	939 -	959	943.13	-3.88E+02	120.06	3.57E+03	.....
m	45	474.53	939 -	959	952.15	-1.32E+02	43.45	3.65E+03	CS-134
	46	480.83	960 -	969	964.75	3.04E+02	95.86	5.92E+03	.....
	47	487.39	970 -	987	977.88	1.82E+02	137.40	9.84E+03	LA-140
	48	511.04	1013 -	1033	1025.20	3.70E+03	150.56	9.25E+03	TL-208
	49	533.89	1065 -	1075	1070.91	4.55E+02	87.12	4.60E+03	.....
	50	580.48	1159 -	1174	1164.15	1.02E+03	109.89	6.14E+03	.....
	51	609.63	1215 -	1229	1222.48	1.24E+05	364.29	5.12E+03	BI-214
									RU-103
	52	665.83	1329 -	1341	1334.93	3.69E+03	95.86	3.33E+03	BI-214
									SB-126
									PA-234
	53	683.95	1364 -	1379	1371.19	2.20E+02	85.62	3.95E+03	.....
	54	703.35	1405 -	1416	1410.01	1.34E+03	80.15	3.18E+03	NB-94x
	55	720.25	1438 -	1453	1443.83	8.52E+02	89.45	3.97E+03	SB-126
	56	742.92	1478 -	1501	1489.21	3.61E+02	117.41	6.10E+03	PA-234
	57	753.36	1504 -	1515	1510.10	3.27E+02	68.92	2.76E+03	.....
	58	768.80	1528 -	1549	1540.99	1.19E+04	149.43	4.99E+03	BI-214
	59	786.33	1564 -	1587	1576.07	2.52E+03	121.19	5.53E+03	PA-234
									PB-214
									CS-135
									BI-212
	60	806.60	1611 -	1624	1616.65	2.74E+03	91.14	3.27E+03	BI-214
M	61	821.65	1640 -	1675	1646.77	1.08E+01	18.38	2.09E+03	.....
m	62	826.60	1640 -	1675	1656.68	3.07E+00	5.28	2.36E+03	.....
m	63	832.41	1640 -	1675	1668.30	8.83E+01	150.19	2.66E+03	PB-211
									PA-234

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	64	839.50	1675 -	1687	1682.50	-9.65E+00	84.46	4.33E+03	PB-214
									AC-228
	65	934.54	1866 -	1886	1872.72	6.07E+03	122.80	4.40E+03	BI-214
	66	964.68	1926 -	1939	1933.04	6.36E+02	73.35	2.79E+03	AC-228
									EU-152
	67	1052.44	2103 -	2114	2108.72	3.91E+02	58.23	1.88E+03	.....
	68	1070.65	2138 -	2155	2145.17	5.72E+02	74.62	2.63E+03	.....
	69	1104.82	2208 -	2220	2213.57	1.76E+02	58.65	1.98E+03	.....
	70	1120.88	2237 -	2255	2245.73	2.60E+04	177.42	2.81E+03	BI-214
	71	1134.21	2265 -	2278	2272.41	4.25E+02	61.73	1.99E+03	.....
	72	1155.80	2309 -	2324	2315.63	2.83E+03	82.12	2.18E+03	BI-214
	73	1182.67	2365 -	2381	2369.41	4.05E+02	64.76	2.05E+03	.....
	74	1208.24	2415 -	2428	2420.61	6.72E+02	58.88	1.64E+03	BI-214
	75	1238.77	2471 -	2488	2481.74	9.40E+03	114.87	2.00E+03	CO-56
									BI-214
	76	1281.67	2559 -	2576	2567.63	2.23E+03	76.42	1.90E+03	BI-214
M	77	1378.37	2753 -	2782	2761.25	6.07E+03	84.07	1.26E+03	BI-214
m	78	1385.92	2753 -	2782	2776.37	1.19E+03	44.18	1.31E+03	BI-214
M	79	1402.18	2801 -	2829	2808.93	1.89E+03	51.75	1.14E+03	BI-214
m	80	1408.66	2801 -	2829	2821.90	3.56E+03	67.08	1.17E+03	EU-152
									BI-214
	81	1509.94	3017 -	3031	3024.70	2.97E+03	78.17	1.79E+03	I-124
									BI-214
M	82	1539.35	3076 -	3103	3083.60	6.18E+02	39.56	1.41E+03	.....
m	83	1544.01	3076 -	3103	3092.95	4.33E+02	34.64	1.36E+03	.....
	84	1584.03	3166 -	3179	3173.09	8.20E+02	51.55	1.08E+03	BI-214
M	85	1595.64	3188 -	3213	3196.34	3.05E+02	29.93	9.73E+02	LA-140
									EU-154
m	86	1600.05	3188 -	3213	3205.17	3.50E+02	30.83	8.88E+02	.....
	87	1662.01	3321 -	3338	3329.27	1.37E+03	52.09	7.07E+02	BI-214
	88	1684.91	3369 -	3380	3375.13	2.53E+02	30.54	4.25E+02	.....
	89	1693.62	3382 -	3398	3392.57	1.16E+02	39.61	7.85E+02	PA-234
	90	1730.36	3455 -	3475	3466.17	3.62E+03	69.30	5.76E+02	BI-214
	91	1765.24	3518 -	3545	3536.03	1.93E+04	144.71	7.03E+02	BI-214
	92	1839.14	3672 -	3691	3684.05	-5.74E+02	47.67	1.42E+03	.....
	93	1848.19	3693 -	3712	3702.19	2.24E+03	61.07	7.44E+02	BI-214
	94	1873.82	3744 -	3765	3753.52	2.78E+02	38.25	5.64E+02	.....
	95	1896.43	3794 -	3809	3798.82	1.62E+02	32.09	4.82E+02	.....

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 3/30/2016 1:47:19PM

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	36.41	4.14E+03	202.82	4.40E-03	2.28E-04
	2	46.61	1.77E+03	213.89	5.69E-03	2.28E-04
	3	50.17	-4.74E+02	158.85	6.02E-03	2.28E-04
	4	67.77	1.30E+04	281.78	7.01E-03	2.88E-04
M	5	74.93	5.63E+03	154.14	7.19E-03	3.39E-04
m	6	77.16	1.03E+04	278.15	7.23E-03	3.56E-04
m	7	81.15	2.26E+03	68.83	7.27E-03	3.84E-04
m	8	83.91	6.67E+03	181.56	7.29E-03	4.04E-04
m	9	87.34	3.67E+03	103.45	7.31E-03	4.29E-04
m	10	89.81	4.95E+02	35.61	7.31E-03	4.32E-04
M	11	94.74	-3.59E+03	378.50	7.29E-03	4.25E-04
m	12	97.81	-1.69E+02	57.80	7.28E-03	4.22E-04
	13	144.12	1.22E+04	335.66	6.61E-03	3.59E-04
	14	154.30	8.46E+03	269.17	6.42E-03	3.44E-04
	15	158.73	-3.40E+03	270.90	6.34E-03	3.38E-04
	16	186.29	2.52E+04	394.48	5.86E-03	3.19E-04
	17	210.77	4.76E+02	251.26	5.46E-03	3.09E-04
	18	236.13	-1.12E+04	317.83	5.09E-03	2.99E-04
	19	242.15	2.57E+04	314.71	5.00E-03	2.97E-04
M	20	254.05	1.98E+03	102.46	4.85E-03	2.92E-04
m	21	256.35	7.89E+03	138.57	4.82E-03	2.91E-04
m	22	259.10	2.20E+03	102.08	4.78E-03	2.90E-04
M	23	269.62	1.57E+04	161.27	4.66E-03	2.86E-04
m	24	271.39	1.25E+04	149.03	4.63E-03	2.85E-04
m	25	274.70	1.29E+03	92.82	4.60E-03	2.84E-04
	26	286.27	-8.80E+04	423.05	4.46E-03	2.79E-04
M	27	295.38	8.67E+04	310.03	4.37E-03	2.75E-04
m	28	300.19	4.77E+03	101.23	4.32E-03	2.74E-04
m	29	302.81	2.69E+03	90.04	4.29E-03	2.72E-04
	30	314.95	4.50E+02	194.45	4.17E-03	2.68E-04
	31	324.08	1.98E+03	143.23	4.08E-03	2.64E-04
M	32	330.04	1.10E+03	168.14	4.03E-03	2.62E-04
m	33	334.40	1.89E+02	30.65	3.99E-03	2.60E-04
m	34	338.46	8.65E+02	131.84	3.95E-03	2.58E-04
	35	352.07	1.62E+05	449.21	3.84E-03	2.53E-04
M	36	386.98	1.10E+03	73.46	3.57E-03	2.39E-04
m	37	389.04	1.48E+03	79.62	3.56E-03	2.38E-04
M	38	402.05	6.09E+03	108.13	3.47E-03	2.31E-04
m	39	405.16	4.29E+03	96.30	3.45E-03	2.29E-04
	40	427.35	1.88E+03	147.60	3.31E-03	2.15E-04
	41	445.21	7.07E+02	115.92	3.20E-03	2.05E-04
	42	455.07	8.11E+02	108.09	3.15E-03	1.99E-04
	43	462.24	-2.90E+02	142.13	3.11E-03	1.94E-04
M	44	470.02	-3.88E+02	120.06	3.07E-03	1.90E-04
m	45	474.53	-1.32E+02	43.45	3.04E-03	1.87E-04
	46	480.83	3.04E+02	95.86	3.01E-03	1.83E-04
	47	487.39	1.82E+02	137.40	2.98E-03	1.79E-04
	48	511.04	3.70E+03	150.56	2.87E-03	1.65E-04
	49	533.89	4.55E+02	87.12	2.77E-03	1.51E-04
	50	580.48	1.02E+03	109.89	2.59E-03	1.23E-04
	51	609.63	1.24E+05	364.29	2.49E-03	1.05E-04
	52	665.83	3.69E+03	95.86	2.32E-03	7.49E-05
	53	683.95	2.20E+02	85.62	2.27E-03	7.88E-05

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	54	703.35	1.34E+03	80.15	2.22E-03	8.30E-05
	55	720.25	8.52E+02	89.45	2.17E-03	8.66E-05
	56	742.92	3.61E+02	117.41	2.12E-03	9.15E-05
	57	753.36	3.27E+02	68.92	2.10E-03	9.37E-05
	58	768.80	1.19E+04	149.43	2.06E-03	9.70E-05
	59	786.33	2.52E+03	121.19	2.02E-03	1.01E-04
	60	806.60	2.74E+03	91.14	1.98E-03	1.05E-04
M	61	821.65	1.08E+01	18.38	1.95E-03	1.08E-04
m	62	826.60	3.07E+00	5.28	1.94E-03	1.09E-04
m	63	832.41	8.83E+01	150.19	1.93E-03	1.11E-04
	64	839.50	-9.65E+00	84.46	1.92E-03	1.12E-04
	65	934.54	6.07E+03	122.80	1.76E-03	1.14E-04
	66	964.68	6.36E+02	73.35	1.72E-03	1.05E-04
	67	1052.44	3.91E+02	58.23	1.60E-03	7.96E-05
	68	1070.65	5.72E+02	74.62	1.58E-03	7.43E-05
	69	1104.82	1.76E+02	58.65	1.54E-03	6.43E-05
	70	1120.88	2.60E+04	177.42	1.52E-03	5.96E-05
	71	1134.21	4.25E+02	61.73	1.51E-03	5.57E-05
	72	1155.80	2.83E+03	82.12	1.49E-03	4.94E-05
	73	1182.67	4.05E+02	64.76	1.46E-03	4.40E-05
	74	1208.24	6.72E+02	58.88	1.44E-03	4.33E-05
	75	1238.77	9.40E+03	114.87	1.41E-03	4.25E-05
	76	1281.67	2.23E+03	76.42	1.37E-03	4.13E-05
M	77	1378.37	6.07E+03	84.07	1.29E-03	3.94E-05
m	78	1385.92	1.19E+03	44.18	1.29E-03	3.93E-05
M	79	1402.18	1.89E+03	51.75	1.28E-03	3.91E-05
m	80	1408.66	3.56E+03	67.08	1.27E-03	3.90E-05
	81	1509.94	2.97E+03	78.17	1.21E-03	3.78E-05
M	82	1539.35	6.18E+02	39.56	1.19E-03	3.74E-05
m	83	1544.01	4.33E+02	34.64	1.19E-03	3.74E-05
	84	1584.03	8.20E+02	51.55	1.16E-03	3.69E-05
M	85	1595.64	3.05E+02	29.93	1.16E-03	3.67E-05
m	86	1600.05	3.50E+02	30.83	1.15E-03	3.67E-05
	87	1662.01	1.37E+03	52.09	1.12E-03	3.59E-05
	88	1684.91	2.53E+02	30.54	1.11E-03	3.56E-05
	89	1693.62	1.16E+02	39.61	1.10E-03	3.55E-05
	90	1730.36	3.62E+03	69.30	1.09E-03	3.51E-05
	91	1765.24	1.93E+04	144.71	1.07E-03	3.47E-05
	92	1839.14	-5.74E+02	47.67	1.04E-03	3.38E-05
	93	1848.19	2.24E+03	61.07	1.03E-03	3.38E-05
	94	1873.82	2.78E+02	38.25	1.02E-03	3.38E-05
	95	1896.43	1.62E+02	32.09	1.01E-03	3.38E-05

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 3/30/2016 1:47:19PM

Env. Background File : \\NHHJ-6\ApexRoot\Default\Data\0000006791.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	36.41	4.14E+03	202.82			4.14E+03	2.03E+02
	2	46.61	1.77E+03	213.89	2.73E+01	2.86E+00	1.75E+03	2.14E+02
	3	50.17	-4.74E+02	158.85			-4.74E+02	1.59E+02
	4	67.77	1.30E+04	281.78			1.30E+04	2.82E+02
M	5	74.93	5.63E+03	154.14			5.63E+03	1.54E+02
m	6	77.16	1.03E+04	278.15			1.03E+04	2.78E+02
m	7	81.15	2.26E+03	68.83			2.26E+03	6.88E+01
m	8	83.91	6.67E+03	181.56			6.67E+03	1.82E+02
m	9	87.34	3.67E+03	103.45			3.67E+03	1.03E+02
m	10	89.81	4.95E+02	35.61			4.95E+02	3.56E+01
M	11	94.74	-3.59E+03	378.50			-3.59E+03	3.79E+02
m	12	97.81	-1.69E+02	57.80			-1.69E+02	5.78E+01
	13	144.12	1.22E+04	335.66			1.22E+04	3.36E+02
	14	154.30	8.46E+03	269.17			8.46E+03	2.69E+02
	15	158.73	-3.40E+03	270.90			-3.40E+03	2.71E+02
	16	186.29	2.52E+04	394.48	2.96E+01	3.21E+00	2.51E+04	3.94E+02
	17	210.77	4.76E+02	251.26			4.76E+02	2.51E+02
	18	236.13	-1.12E+04	317.83			-1.12E+04	3.18E+02
	19	242.15	2.57E+04	314.71			2.57E+04	3.15E+02
M	20	254.05	1.98E+03	102.46			1.98E+03	1.02E+02
m	21	256.35	7.89E+03	138.57			7.89E+03	1.39E+02
m	22	259.10	2.20E+03	102.08			2.20E+03	1.02E+02
M	23	269.62	1.57E+04	161.27			1.57E+04	1.61E+02
m	24	271.39	1.25E+04	149.03			1.25E+04	1.49E+02
m	25	274.70	1.29E+03	92.82			1.29E+03	9.28E+01
	26	286.27	-8.80E+04	423.05			-8.80E+04	4.23E+02
M	27	295.38	8.67E+04	310.03			8.67E+04	3.10E+02
m	28	300.19	4.77E+03	101.23			4.77E+03	1.01E+02
m	29	302.81	2.69E+03	90.04			2.69E+03	9.00E+01
	30	314.95	4.50E+02	194.45			4.50E+02	1.94E+02
	31	324.08	1.98E+03	143.23			1.98E+03	1.43E+02
M	32	330.04	1.10E+03	168.14			1.10E+03	1.68E+02
m	33	334.40	1.89E+02	30.65			1.89E+02	3.06E+01
m	34	338.46	8.65E+02	131.84			8.65E+02	1.32E+02
	35	352.07	1.62E+05	449.21			1.62E+05	4.49E+02
M	36	386.98	1.10E+03	73.46			1.10E+03	7.35E+01
m	37	389.04	1.48E+03	79.62			1.48E+03	7.96E+01
M	38	402.05	6.09E+03	108.13			6.09E+03	1.08E+02
m	39	405.16	4.29E+03	96.30			4.29E+03	9.63E+01
	40	427.35	1.88E+03	147.60			1.88E+03	1.48E+02
	41	445.21	7.07E+02	115.92			7.07E+02	1.16E+02
	42	455.07	8.11E+02	108.09			8.11E+02	1.08E+02
	43	462.24	-2.90E+02	142.13			-2.90E+02	1.42E+02
M	44	470.02	-3.88E+02	120.06			-3.88E+02	1.20E+02
m	45	474.53	-1.32E+02	43.45			-1.32E+02	4.34E+01
	46	480.83	3.04E+02	95.86			3.04E+02	9.59E+01

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	47	487.39	1.82E+02	137.40			1.82E+02	1.37E+02
	48	511.04	3.70E+03	150.56	7.31E+01	3.34E+00	3.63E+03	1.51E+02
	49	533.89	4.55E+02	87.12			4.55E+02	8.71E+01
	50	580.48	1.02E+03	109.89			1.02E+03	1.10E+02
	51	609.63	1.24E+05	364.29			1.24E+05	3.64E+02
	52	665.83	3.69E+03	95.86			3.69E+03	9.59E+01
	53	683.95	2.20E+02	85.62			2.20E+02	8.56E+01
	54	703.35	1.34E+03	80.15			1.34E+03	8.02E+01
	55	720.25	8.52E+02	89.45			8.52E+02	8.95E+01
	56	742.92	3.61E+02	117.41			3.61E+02	1.17E+02
	57	753.36	3.27E+02	68.92			3.27E+02	6.89E+01
	58	768.80	1.19E+04	149.43			1.19E+04	1.49E+02
	59	786.33	2.52E+03	121.19			2.52E+03	1.21E+02
	60	806.60	2.74E+03	91.14			2.74E+03	9.11E+01
M	61	821.65	1.08E+01	18.38			1.08E+01	1.84E+01
m	62	826.60	3.07E+00	5.28			3.07E+00	5.28E+00
m	63	832.41	8.83E+01	150.19			8.83E+01	1.50E+02
	64	839.50	-9.65E+00	84.46			-9.65E+00	8.45E+01
	65	934.54	6.07E+03	122.80			6.07E+03	1.23E+02
	66	964.68	6.36E+02	73.35			6.36E+02	7.34E+01
	67	1052.44	3.91E+02	58.23			3.91E+02	5.82E+01
	68	1070.65	5.72E+02	74.62			5.72E+02	7.46E+01
	69	1104.82	1.76E+02	58.65			1.76E+02	5.86E+01
	70	1120.88	2.60E+04	177.42			2.60E+04	1.77E+02
	71	1134.21	4.25E+02	61.73			4.25E+02	6.17E+01
	72	1155.80	2.83E+03	82.12			2.83E+03	8.21E+01
	73	1182.67	4.05E+02	64.76			4.05E+02	6.48E+01
	74	1208.24	6.72E+02	58.88			6.72E+02	5.89E+01
	75	1238.77	9.40E+03	114.87			9.40E+03	1.15E+02
	76	1281.67	2.23E+03	76.42			2.23E+03	7.64E+01
M	77	1378.37	6.07E+03	84.07			6.07E+03	8.41E+01
m	78	1385.92	1.19E+03	44.18			1.19E+03	4.42E+01
M	79	1402.18	1.89E+03	51.75			1.89E+03	5.17E+01
m	80	1408.66	3.56E+03	67.08			3.56E+03	6.71E+01
	81	1509.94	2.97E+03	78.17			2.97E+03	7.82E+01
M	82	1539.35	6.18E+02	39.56			6.18E+02	3.96E+01
m	83	1544.01	4.33E+02	34.64			4.33E+02	3.46E+01
	84	1584.03	8.20E+02	51.55			8.20E+02	5.16E+01
M	85	1595.64	3.05E+02	29.93			3.05E+02	2.99E+01
m	86	1600.05	3.50E+02	30.83			3.50E+02	3.08E+01
	87	1662.01	1.37E+03	52.09			1.37E+03	5.21E+01
	88	1684.91	2.53E+02	30.54			2.53E+02	3.05E+01
	89	1693.62	1.16E+02	39.61			1.16E+02	3.96E+01
	90	1730.36	3.62E+03	69.30			3.62E+03	6.93E+01
	91	1765.24	1.93E+04	144.71			1.93E+04	1.45E+02
	92	1839.14	-5.74E+02	47.67			-5.74E+02	4.77E+01
	93	1848.19	2.24E+03	61.07			2.24E+03	6.11E+01
	94	1873.82	2.78E+02	38.25			2.78E+02	3.82E+01
	95	1896.43	1.62E+02	32.09			1.62E+02	3.21E+01

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 3/30/2016 1:47:19PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\NHHJ-6\ApexRoot\Default\Data\0000006791.CNF

Corrected Area is: Original * Peak Ratio - Background

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	36.41	4.14E+03	202.82			4.14E+03	2.03E+02
	2	46.61	1.77E+03	213.89	2.73E+01	2.86E+00	1.75E+03	2.14E+02
	3	50.17	-4.74E+02	158.85			-4.74E+02	1.59E+02
	4	67.77	1.30E+04	281.78			1.30E+04	2.82E+02
M	5	74.93	5.63E+03	154.14			5.63E+03	1.54E+02
m	6	77.16	1.03E+04	278.15			1.03E+04	2.78E+02
m	7	81.15	2.26E+03	68.83			2.26E+03	6.88E+01
m	8	83.91	6.67E+03	181.56			6.67E+03	1.82E+02
m	9	87.34	3.67E+03	103.45			3.67E+03	1.03E+02
m	10	89.81	4.95E+02	35.61			4.95E+02	3.56E+01
M	11	94.74	-3.59E+03	378.50			-3.59E+03	3.79E+02
m	12	97.81	-1.69E+02	57.80			-1.69E+02	5.78E+01
	13	144.12	1.22E+04	335.66			1.22E+04	3.36E+02
	14	154.30	8.46E+03	269.17			8.46E+03	2.69E+02
	15	158.73	-3.40E+03	270.90			-3.40E+03	2.71E+02
	16	186.29	2.52E+04	394.48	2.96E+01	3.21E+00	2.51E+04	3.94E+02
	17	210.77	4.76E+02	251.26			4.76E+02	2.51E+02
	18	236.13	-1.12E+04	317.83			-1.12E+04	3.18E+02
	19	242.15	2.57E+04	314.71			2.57E+04	3.15E+02
M	20	254.05	1.98E+03	102.46			1.98E+03	1.02E+02
m	21	256.35	7.89E+03	138.57			7.89E+03	1.39E+02
m	22	259.10	2.20E+03	102.08			2.20E+03	1.02E+02
M	23	269.62	1.57E+04	161.27			1.57E+04	1.61E+02
m	24	271.39	1.25E+04	149.03			1.25E+04	1.49E+02
m	25	274.70	1.29E+03	92.82			1.29E+03	9.28E+01
	26	286.27	-8.80E+04	423.05			-8.80E+04	4.23E+02
M	27	295.38	8.67E+04	310.03			8.67E+04	3.10E+02
m	28	300.19	4.77E+03	101.23			4.77E+03	1.01E+02
m	29	302.81	2.69E+03	90.04			2.69E+03	9.00E+01
	30	314.95	4.50E+02	194.45			4.50E+02	1.94E+02
	31	324.08	1.98E+03	143.23			1.98E+03	1.43E+02
M	32	330.04	1.10E+03	168.14			1.10E+03	1.68E+02
m	33	334.40	1.89E+02	30.65			1.89E+02	3.06E+01
m	34	338.46	8.65E+02	131.84			8.65E+02	1.32E+02

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	35	352.07	1.62E+05	449.21			1.62E+05	4.49E+02
M	36	386.98	1.10E+03	73.46			1.10E+03	7.35E+01
m	37	389.04	1.48E+03	79.62			1.48E+03	7.96E+01
M	38	402.05	6.09E+03	108.13			6.09E+03	1.08E+02
m	39	405.16	4.29E+03	96.30			4.29E+03	9.63E+01
	40	427.35	1.88E+03	147.60			1.88E+03	1.48E+02
	41	445.21	7.07E+02	115.92			7.07E+02	1.16E+02
	42	455.07	8.11E+02	108.09			8.11E+02	1.08E+02
	43	462.24	-2.90E+02	142.13			-2.90E+02	1.42E+02
M	44	470.02	-3.88E+02	120.06			-3.88E+02	1.20E+02
m	45	474.53	-1.32E+02	43.45			-1.32E+02	4.34E+01
	46	480.83	3.04E+02	95.86			3.04E+02	9.59E+01
	47	487.39	1.82E+02	137.40			1.82E+02	1.37E+02
	48	511.04	3.70E+03	150.56	7.31E+01	3.34E+00	3.63E+03	1.51E+02
	49	533.89	4.55E+02	87.12			4.55E+02	8.71E+01
	50	580.48	1.02E+03	109.89			1.02E+03	1.10E+02
	51	609.63	1.24E+05	364.29			1.24E+05	3.64E+02
	52	665.83	3.69E+03	95.86			3.69E+03	9.59E+01
	53	683.95	2.20E+02	85.62			2.20E+02	8.56E+01
	54	703.35	1.34E+03	80.15			1.34E+03	8.02E+01
	55	720.25	8.52E+02	89.45			8.52E+02	8.95E+01
	56	742.92	3.61E+02	117.41			3.61E+02	1.17E+02
	57	753.36	3.27E+02	68.92			3.27E+02	6.89E+01
	58	768.80	1.19E+04	149.43			1.19E+04	1.49E+02
	59	786.33	2.52E+03	121.19			2.52E+03	1.21E+02
	60	806.60	2.74E+03	91.14			2.74E+03	9.11E+01
M	61	821.65	1.08E+01	18.38			1.08E+01	1.84E+01
m	62	826.60	3.07E+00	5.28			3.07E+00	5.28E+00
m	63	832.41	8.83E+01	150.19			8.83E+01	1.50E+02
	64	839.50	-9.65E+00	84.46			-9.65E+00	8.45E+01
	65	934.54	6.07E+03	122.80			6.07E+03	1.23E+02
	66	964.68	6.36E+02	73.35			6.36E+02	7.34E+01
	67	1052.44	3.91E+02	58.23			3.91E+02	5.82E+01
	68	1070.65	5.72E+02	74.62			5.72E+02	7.46E+01
	69	1104.82	1.76E+02	58.65			1.76E+02	5.86E+01
	70	1120.88	2.60E+04	177.42			2.60E+04	1.77E+02
	71	1134.21	4.25E+02	61.73			4.25E+02	6.17E+01
	72	1155.80	2.83E+03	82.12			2.83E+03	8.21E+01
	73	1182.67	4.05E+02	64.76			4.05E+02	6.48E+01
	74	1208.24	6.72E+02	58.88			6.72E+02	5.89E+01
	75	1238.77	9.40E+03	114.87			9.40E+03	1.15E+02
	76	1281.67	2.23E+03	76.42			2.23E+03	7.64E+01
M	77	1378.37	6.07E+03	84.07			6.07E+03	8.41E+01
m	78	1385.92	1.19E+03	44.18			1.19E+03	4.42E+01
M	79	1402.18	1.89E+03	51.75			1.89E+03	5.17E+01
m	80	1408.66	3.56E+03	67.08			3.56E+03	6.71E+01
	81	1509.94	2.97E+03	78.17			2.97E+03	7.82E+01
M	82	1539.35	6.18E+02	39.56			6.18E+02	3.96E+01
m	83	1544.01	4.33E+02	34.64			4.33E+02	3.46E+01
	84	1584.03	8.20E+02	51.55			8.20E+02	5.16E+01
M	85	1595.64	3.05E+02	29.93			3.05E+02	2.99E+01
m	86	1600.05	3.50E+02	30.83			3.50E+02	3.08E+01
	87	1662.01	1.37E+03	52.09			1.37E+03	5.21E+01
	88	1684.91	2.53E+02	30.54			2.53E+02	3.05E+01

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
89	1693.62	1.16E+02	39.61			1.16E+02	3.96E+01
90	1730.36	3.62E+03	69.30			3.62E+03	6.93E+01
91	1765.24	1.93E+04	144.71			1.93E+04	1.45E+02
92	1839.14	-5.74E+02	47.67			-5.74E+02	4.77E+01
93	1848.19	2.24E+03	61.07			2.24E+03	6.11E+01
94	1873.82	2.78E+02	38.25			2.78E+02	3.82E+01
95	1896.43	1.62E+02	32.09			1.62E+02	3.21E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
I-126	0.891	388.63	*	34.10	5.51E+02	4.92E+01
BA-133	0.350	53.16		2.20		
		79.62		2.62		
		81.00	*	34.06	2.26E+01	1.39E+00
		160.61		0.64		
		223.23		0.45		
		276.40		7.16		
		302.85	*	18.33	8.47E+01	6.09E+00
		356.02		62.05		
		383.85		8.94		
CS-134	0.999	475.35	*	1.47	-7.67E+01	2.57E+01
		563.23		8.38		
		569.32		15.43		
		604.70		97.56		
		795.84		85.44		
		801.93		8.73		
		1038.57		1.00		
		1167.94		1.80		
		1365.15		3.04		
GD-153	0.987	69.67		2.54		
		97.43	*	30.20	-2.21E+00	7.67E-01
		103.18		21.44		
PB-210	0.999	46.54	*	4.25	1.78E+02	2.84E+01
PB-211	0.984	404.85	*	3.78	8.08E+02	5.76E+01
		427.09	*	1.76	7.95E+02	8.30E+01
		704.64		0.46		

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-211	0.984	766.51		0.62		
		832.01	*	3.52	3.19E+01	5.42E+01
BI-214	0.947	609.31	*	44.80	2.73E+03	1.20E+02
		665.45	*	1.29	3.03E+03	1.44E+02
		768.36	*	4.80	2.94E+03	1.50E+02
		806.17	*	1.22	2.78E+03	1.87E+02
		934.06	*	3.03	2.79E+03	1.95E+02
		1120.29	*	14.80	2.83E+03	1.19E+02
		1155.19	*	1.64	2.84E+03	1.43E+02
		1207.68	*	0.49	2.34E+03	3.23E+02
		1238.11	*	5.86	2.80E+03	9.88E+01
		1280.96	*	1.44	2.78E+03	1.39E+02
		1377.67	*	3.92	2.94E+03	1.15E+02
		1385.31	*	0.89	2.54E+03	2.84E+02
		1401.50	*	1.55	2.34E+03	2.74E+02
		1407.98	*	2.80	2.45E+03	3.61E+02
		1415.80		0.48		
		1509.23	*	2.12	2.85E+03	1.29E+02
		1583.22	*	0.70	2.46E+03	1.80E+02
		1661.28	*	1.14	2.63E+03	1.48E+02
		1729.59	*	2.88	2.84E+03	1.22E+02
		1764.49	*	15.36	2.88E+03	1.03E+02
		1847.42	*	2.04	2.61E+03	1.22E+02
PB-214	0.962	53.23		1.11		
		241.98	*	7.50	1.68E+03	1.04E+02
		258.79	*	0.55	2.05E+03	2.43E+02
		295.21	*	18.50	2.63E+03	1.72E+02
		351.92	*	35.80	2.89E+03	1.95E+02
		785.91	*	0.85	3.60E+03	4.91E+02
		839.03	*	0.63	-1.96E+01	1.71E+02
RN-219 ✓	0.994	130.59		0.12		
		271.23	*	10.80	6.12E+02	4.24E+01
		401.81	*	6.37	6.76E+02	4.66E+01
RA-223 ✓	0.908	122.32		1.19		
		144.23	*	3.22	1.41E+03	9.09E+01
		154.21	*	5.62	5.75E+02	3.86E+01
		158.63	*	0.69	-1.90E+03	1.87E+02
		179.54		0.15		
		269.46	*	13.70	6.05E+02	3.95E+01
		288.18		0.16		
		323.87	*	3.93	3.03E+02	2.99E+01
		328.40		0.21		
		338.28	*	2.79	1.93E+02	3.21E+01
		342.90		0.22		
		346.80		0.18		
		371.68		0.48		
TH-227	0.994	50.13	*	8.00	-2.41E+01	8.23E+00
		79.72		1.89		
		93.93	*	1.37	-8.82E+02	1.28E+02
		210.65	*	1.10	1.95E+02	1.10E+02
		235.97	*	12.70	-4.24E+02	4.34E+01
		✓256.25	*	7.01	5.73E+02	4.71E+01
		286.12	*	1.54	-3.14E+04	3.14E+03

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
TH-227	0.994	300.00	*	2.67	1.02E+03	1.08E+02
		304.51		1.23		
		329.85	*	2.69	2.50E+02	4.84E+01
		334.38	*	1.05	1.11E+02	2.21E+01
TH-228	0.724	84.37	*	1.23	1.83E+03	1.17E+02
		215.99		0.26		
PA-231	0.640	283.69		1.70		
		300.07	*	2.46	1.10E+03	8.02E+01
		302.65	*	2.20	6.99E+02	9.93E+01
		330.06	*	1.40	4.81E+02	1.05E+02
TH-231	0.988	81.23	*	0.89	8.56E+02	7.10E+01
		84.21	*	6.60	3.40E+02	2.61E+01
		89.95	*	0.94	1.77E+02	2.00E+01
U-233	0.988	42.44		0.09		
		54.70		0.02		
		97.13	*	0.02	-2.85E+03	1.08E+03
U-235	0.710	109.16		1.54		
		143.76	*	10.96	4.13E+02	2.53E+01
		163.36		5.08		
		185.71	*	57.20	1.84E+02	1.06E+01
		194.94		0.63		
		202.11		1.08		
		205.31		5.01		
NP-237	0.896	57.10		0.39		
		86.48	*	12.40	9.93E+01	7.22E+00
		94.64	*	0.60	-2.01E+03	7.14E+02
		143.25	*	0.43	1.05E+04	8.06E+02
AM-243	0.989	74.66	*	68.20	2.82E+01	1.64E+00

* = Energy line found in the spectrum.
- = Manually added nuclide.
? = Manually edited nuclide.
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 3/30/2016 1:47:19PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	36.41	1.14925E+00	4.90		
	4	67.77	3.60089E+00	2.17		
m	6	77.16	2.86750E+00	2.69		
M	20	254.05	5.51185E-01	5.16	Sum	
m	25	274.70	3.57887E-01	7.20		
	30	314.95	1.24945E-01	43.23		

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M	36	386.98	3.04695E-01	6.70	D-Esc	
	41	445.21	1.96333E-01	16.40	Sum	
	42	455.07	2.25208E-01	13.33	Sum	
	43	462.24	-8.06527E-02	- 48.9	Sum	
M	44	470.02	-1.07674E-01	- 30.9	Sum	
	46	480.83	8.43056E-02	31.58	Sum	
	47	487.39	5.06668E-02	75.33	D-Esc	
	48	511.04	1.00702E+00	4.15	Sum	
	49	533.89	1.26250E-01	19.17	Sum	
	50	580.48	2.82000E-01	10.82	Sum	
	53	683.95	6.10000E-02	38.99	Sum	
	54	703.35	3.72500E-01	5.98	Sum	
	55	720.25	2.36667E-01	10.50	Tol.	SB-126
	56	742.92	1.00278E-01	32.52	D-Esc	
	57	753.36	9.07778E-02	21.09	Sum	
M	61	821.65	2.99964E-03	170.17		
m	62	826.60	8.53196E-04	172.00	D-Esc	
	66	964.68	1.76694E-01	11.53	Sum	
	67	1052.44	1.08611E-01	14.89		
	68	1070.65	1.58944E-01	13.04	Sum	
	69	1104.82	4.89028E-02	33.31		
	71	1134.21	1.17917E-01	14.54	Sum	
	73	1182.67	1.12597E-01	15.98		
M	82	1539.35	1.71582E-01	6.40	Sum	
m	83	1544.01	1.20173E-01	8.01	Sum	
M	85	1595.64	8.47532E-02	9.81	Sum	
m	86	1600.05	9.71416E-02	8.82	Sum	
	88	1684.91	7.03333E-02	12.06		
	89	1693.62	3.21111E-02	34.26	Tol.	PA-234
	92	1839.14	-1.59444E-01	- 8.3	Sum	
	94	1873.82	7.71389E-02	13.77	Sum	
	95	1896.43	4.48889E-02	19.86		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

IDENTIFIED NUCLIDES

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
I-126	0.89	388.63	*	34.10	5.51E+02	4.92E+01
BA-133	0.35	53.16		2.20		
		79.62		2.62		
		81.00	*	34.06	2.26E+01	1.39E+00
		160.61		0.64		
		223.23		0.45		
		276.40		7.16		
		302.85	*	18.33	8.47E+01	6.09E+00
		356.02		62.05		
		383.85		8.94		
CS-134	0.99	475.35	*	1.47	-7.67E+01	2.57E+01
		563.23	@	8.38		
		569.32	@	15.43		
		604.70		97.56		
		795.84		85.44		
		801.93	@	8.73		
		1038.57	@	1.00		
		1167.94	@	1.80		
		1365.15	@	3.04		
GD-153	0.98	69.67		2.54		
		97.43	*	30.20	-2.21E+00	7.67E-01
		103.18		21.44		
PB-210	0.99	46.54	*	4.25	1.78E+02	2.84E+01
PB-211	0.98	404.85	*	3.78	8.08E+02	5.76E+01
		427.09	*	1.76	7.95E+02	8.30E+01
		704.64		0.46		
		766.51		0.62		
		832.01	*	3.52	3.19E+01	5.42E+01
BI-214	0.94	609.31	*	44.80	2.73E+03	1.20E+02
		665.45	*	1.29	3.03E+03	1.44E+02
		768.36	*	4.80	2.94E+03	1.50E+02
		806.17	*	1.22	2.78E+03	1.87E+02
		934.06	*	3.03	2.79E+03	1.95E+02
		1120.29	*	14.80	2.83E+03	1.19E+02
		1155.19	*	1.64	2.84E+03	1.43E+02
		1207.68	*	0.49	2.34E+03	3.23E+02
		1238.11	*	5.86	2.80E+03	9.88E+01
		1280.96	*	1.44	2.78E+03	1.39E+02
		1377.67	*	3.92	2.94E+03	1.15E+02
		1385.31	*	0.89	2.54E+03	2.84E+02
		1401.50	*	1.55	2.34E+03	2.74E+02
		1407.98	*	2.80	2.45E+03	3.61E+02
		1415.80		0.48		
		1509.23	*	2.12	2.85E+03	1.29E+02
		1583.22	*	0.70	2.46E+03	1.80E+02
		1661.28	*	1.14	2.63E+03	1.48E+02
		1729.59	*	2.88	2.84E+03	1.22E+02
		1764.49	*	15.36	2.88E+03	1.03E+02
		1847.42	*	2.04	2.61E+03	1.22E+02
PB-214	0.96	53.23		1.11		
		241.98	*	7.50	1.68E+03	1.04E+02
		258.79	*	0.55	2.05E+03	2.43E+02
		295.21	*	18.50	2.63E+03	1.72E+02

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-214	0.96	351.92	*	35.80	2.89E+03	1.95E+02
		785.91	*	0.85	3.60E+03	4.91E+02
		839.03	*	0.63	-1.96E+01	1.71E+02
RN-219	0.99	130.59		0.12		
		271.23	*	10.80	6.12E+02	4.24E+01
		401.81	*	6.37	6.76E+02	4.66E+01
RA-223	0.90	122.32		1.19		
		144.23	*	3.22	1.41E+03	9.09E+01
		154.21	*	5.62	5.75E+02	3.86E+01
		158.63	*	0.69	-1.90E+03	1.87E+02
		179.54		0.15		
		269.46	*	13.70	6.05E+02	3.95E+01
		288.18		0.16		
		323.87	*	3.93	3.03E+02	2.99E+01
		328.40		0.21		
		338.28	*	2.79	1.93E+02	3.21E+01
		342.90		0.22		
		346.80		0.18		
		371.68		0.48		
TH-227	0.99	50.13	*	8.00	-2.41E+01	8.23E+00
		79.72		1.89		
		93.93	*	1.37	-8.82E+02	1.28E+02
		210.65	*	1.10	1.95E+02	1.10E+02
		235.97	*	12.70	-4.24E+02	4.34E+01
		256.25	*	7.01	5.73E+02	4.71E+01
		286.12	*	1.54	-3.14E+04	3.14E+03
		300.00	*	2.67	1.02E+03	1.08E+02
		304.51		1.23		
		329.85	*	2.69	2.50E+02	4.84E+01
		334.38	*	1.05	1.11E+02	2.21E+01
TH-228	0.72	84.37	*	1.23	1.83E+03	1.17E+02
		215.99		0.26		
PA-231	0.64	283.69		1.70		
		300.07	*	2.46	1.10E+03	8.02E+01
		302.65	*	2.20	6.99E+02	9.93E+01
		330.06	*	1.40	4.81E+02	1.05E+02
TH-231	0.98	81.23	*	0.89	8.56E+02	7.10E+01
		84.21	*	6.60	3.40E+02	2.61E+01
		89.95	*	0.94	1.77E+02	2.00E+01
U-233	0.98	42.44		0.09		
		54.70		0.02		
		97.13	*	0.02	-2.85E+03	1.08E+03
U-235	0.71	109.16		1.54		
		143.76	*	10.96	4.13E+02	2.53E+01
		163.36		5.08		
		185.71	*	57.20	1.84E+02	1.06E+01
		194.94		0.63		
		202.11		1.08		
		205.31		5.01		
NP-237	0.89	57.10		0.39		
		86.48	*	12.40	9.93E+01	7.22E+00
		94.64	*	0.60	-2.01E+03	7.14E+02
		143.25	*	0.43	1.05E+04	8.06E+02

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
AM-243	0.98	74.66	*	68.20	2.82E+01	1.64E+00

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 1.000 sigma

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

	Nuclide Name		Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
X	NB-95m		0.303			
X	CD-109		0.925			
	I-126		0.891	5.51E+02	4.92E+01	
	BA-133		0.350	1.80E+01	1.43E+00	
	CS-134	@	0.999	-7.67E+01	2.57E+01	
?	GD-153		0.987	-2.21E+00	7.67E-01	
X	EU-155		0.321			
	PB-210		0.999	1.78E+02	2.84E+01	
	PB-211		0.984	4.70E+02	3.56E+01	
	BI-214		0.947	2.79E+03	3.20E+01	
	PB-214		0.962	2.13E+03	7.59E+01	
	RN-219		0.994	6.41E+02	3.14E+01	
	RA-223		0.908	4.02E+02	1.64E+01	
X	RA-226		0.994			
	TH-227		0.994	1.96E+02	1.59E+01	
	TH-228		0.724	8.79E+02	1.43E+02	
	PA-231		0.640	5.40E+02	3.89E+01	
	TH-231		0.988	1.76E+02	1.64E+01	
?	U-233		0.988	-2.85E+03	1.08E+03	
X	PA-234		0.995			
	U-235		0.710	2.00E+02	9.68E+00	
	NP-237		0.896	9.96E+01	6.47E+00	
	AM-243		0.989	2.82E+01	1.64E+00	

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

UNIDENTIFIED PEAKS

Peak Locate Performed on : 3/30/2016 1:47:19PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	36.41	1.14925E+00	4.90		
	4	67.77	3.60089E+00	2.17		
m	6	77.16	2.86750E+00	2.69		
M	20	254.05	5.51185E-01	5.16	Sum	
m	25	274.70	3.57887E-01	7.20		
	30	314.95	1.24945E-01	43.23		
M	36	386.98	3.04695E-01	6.70	D-Esc	
	41	445.21	1.96333E-01	16.40	Sum	
	42	455.07	2.25208E-01	13.33	Sum	
	43	462.24	-8.06527E-02	- 48.9	Sum	
M	44	470.02	-1.07674E-01	- 30.9	Sum	
	46	480.83	8.43056E-02	31.58	Sum	
	47	487.39	5.06668E-02	75.33	D-Esc	
	48	511.04	1.00702E+00	4.15	Sum	
	49	533.89	1.26250E-01	19.17	Sum	
	50	580.48	2.82000E-01	10.82	Sum	
	53	683.95	6.10000E-02	38.99	Sum	
	54	703.35	3.72500E-01	5.98	Sum	
	55	720.25	2.36667E-01	10.50	Tol.	SB-126
	56	742.92	1.00278E-01	32.52	D-Esc	
	57	753.36	9.07778E-02	21.09	Sum	
M	61	821.65	2.99964E-03	170.17		
m	62	826.60	8.53196E-04	172.00	D-Esc	
	66	964.68	1.76694E-01	11.53	Sum	
	67	1052.44	1.08611E-01	14.89		
	68	1070.65	1.58944E-01	13.04	Sum	
	69	1104.82	4.89028E-02	33.31		
	71	1134.21	1.17917E-01	14.54	Sum	
	73	1182.67	1.12597E-01	15.98		
M	82	1539.35	1.71582E-01	6.40	Sum	
m	83	1544.01	1.20173E-01	8.01	Sum	
M	85	1595.64	8.47532E-02	9.81	Sum	
m	86	1600.05	9.71416E-02	8.82	Sum	
	88	1684.91	7.03333E-02	12.06		
	89	1693.62	3.21111E-02	34.26	Tol.	PA-234
	92	1839.14	-1.59444E-01	- 8.3	Sum	

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
94	1873.82	7.71389E-02	13.77	Sum	
95	1896.43	4.48889E-02	19.86		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
BE-7	477.60	10.42	1.01E+02	1.13E+02	1.13E+02
NA-22	1274.53	99.94	-2.50E+01	6.67E+00	6.67E+00
@ NA-24	1368.63	100.00	1.00E+26	1.00E+26	1.00E+26
> @	2754.03	99.94	0.00E+00		0.00E+00
K-40	1460.83	10.67	-1.07E+00	6.39E+01	6.39E+01
@ AR-41	1293.59	99.10	1.00E+26	1.00E+26	1.00E+26
CR-51	320.08	9.86	-2.75E+02	2.20E+02	2.20E+02
MN-54	834.85	99.98	3.31E+01	8.41E+00	8.41E+00
CO-56	846.77	99.93	-2.42E+01	1.59E+00	9.90E+00
	977.37	1.44	-5.67E+01		7.20E+02
	1037.84	13.99	2.02E+01		7.10E+01
	1175.10	2.28	-3.87E+02		4.59E+02
	1238.28	67.56	3.99E+02		3.08E+01
	1360.21	4.33	6.18E+01		2.36E+02
	1771.35	15.69	-2.39E+03		2.13E+02
	2015.18	3.08	0.00E+00		4.06E+00
	2034.76	7.89	0.00E+00		1.59E+00
@ MN-56	846.75	98.87	1.00E+26	1.00E+26	1.00E+26
@	1810.72	27.19	1.00E+26		1.00E+26
> @	2113.05	14.34	0.00E+00		0.00E+00
CO-57	122.06	85.60	2.41E+00	6.91E+00	6.91E+00
	136.47	10.68	-1.91E+02		5.97E+01
	692.41	0.16	-3.62E+03		3.57E+03
CO-58	810.78	99.45	-3.10E+01	1.23E+01	1.23E+01
	863.96	0.68	2.41E+01		1.64E+03
	1674.73	0.52	-9.80E+03		1.52E+03
FE-59	142.65	1.02	1.07E+04	2.75E+01	1.46E+03
	192.35	3.08	-3.05E+03		4.57E+02
	1099.25	56.50	-8.47E+00		2.75E+01
	1291.60	43.20	-1.83E+02		3.31E+01
CO-60	1173.24	99.90	-5.79E+00	6.36E+00	6.52E+00
	1332.50	99.98	7.96E-01		6.36E+00
@ CU-64	1345.77	0.47	1.00E+26	1.00E+26	1.00E+26

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
ZN-65	1115.55		50.60	-4.70E+02	4.00E+01	4.00E+01
SE-75	66.05		1.12	2.86E+03	1.24E+01	5.53E+02
	96.73		3.42	4.54E+02		1.69E+02
	121.12		17.14	1.60E+01		4.12E+01
	136.00		58.27	-1.49E+01		1.30E+01
	198.61		1.47	1.87E+02		5.60E+02
	264.66		58.50	-7.08E+01		1.24E+01
	279.54		24.79	-3.82E+02		3.15E+01
	303.93		1.31	-3.07E+04		6.65E+02
	400.66		11.37	-9.69E+01		8.56E+01
RB-83	520.39		44.70	-8.66E+01	1.79E+01	1.79E+01
	529.59		29.30	-1.58E+01		2.80E+01
	552.59		15.96	-4.45E+01		5.06E+01
@ BR-84	881.60		42.00	1.00E+26	1.00E+26	1.00E+26
@	1897.60		14.90	1.00E+26		1.00E+26
KR-85	514.01		0.43	-2.12E+03	1.45E+03	1.45E+03
@ KR-85M	151.20		75.00	1.00E+26	1.00E+26	1.00E+26
@	304.87		14.00	1.00E+26		1.00E+26
SR-85	514.01		95.70	-1.70E+01	1.16E+01	1.16E+01
@ SR-85m	151.19		12.90	1.00E+26	1.00E+26	1.00E+26
@	231.86		84.40	1.00E+26		1.00E+26
RB-86	1077.00		8.64	-3.09E+02	5.56E+02	5.56E+02
@ KR-87	402.59		49.60	1.00E+26	1.00E+26	1.00E+26
@	673.83		1.89	1.00E+26		1.00E+26
@	845.44		7.30	1.00E+26		1.00E+26
@	1175.40		1.11	1.00E+26		1.00E+26
@	1740.52		2.04	1.00E+26		1.00E+26
@ KR-88	165.98		3.10	1.00E+26	1.00E+26	1.00E+26
@	196.30		26.00	1.00E+26		1.00E+26
@	362.23		2.25	1.00E+26		1.00E+26
@	834.83		13.00	1.00E+26		1.00E+26
@	985.78		1.52	1.00E+26		1.00E+26
@	1141.33		1.28	1.00E+26		1.00E+26
@	1179.51		1.00	1.00E+26		1.00E+26
@	1250.67		1.12	1.00E+26		1.00E+26
@	1369.50		1.48	1.00E+26		1.00E+26
@	1518.39		2.15	1.00E+26		1.00E+26
@	1529.77		10.90	1.00E+26		1.00E+26
@ RB-88	898.03		14.04	1.00E+26	1.00E+26	1.00E+26
@	1836.01		21.40	1.00E+26		1.00E+26
Y-88	898.04		93.68	2.89E+00	7.49E+00	1.08E+01
	1836.06		99.24	4.02E-01		7.49E+00
NB-94x	702.62		97.90	1.59E+01	5.94E+00	5.94E+00
	871.09		99.90	1.25E+00		6.69E+00
NB-95	765.81		99.81	-2.08E+00	3.01E+01	3.01E+01
NB-95m	204.12		2.33	-2.98E+03	1.20E+06	1.01E+07
	235.69	*	24.80	-8.59E+06		1.20E+06
ZR-95	724.20		44.17	-7.86E+00	1.85E+01	2.31E+01
	756.73		54.46	-1.80E+01		1.85E+01
NB-96	460.04		26.62	-9.77E+17	6.38E+17	2.31E+18
	568.87		57.97	3.30E+17		1.05E+18
	778.22		96.45	-9.59E+18		6.38E+17

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
NB-96	849.93		20.40	-4.84E+18	6.38E+17	3.31E+18
	1200.23		19.96	-7.40E+18		3.42E+18
MO-99	140.51		4.52	-2.77E+08	4.97E+07	1.37E+08
	181.06		6.08	-3.08E+08		1.06E+08
	366.42		1.20	-1.32E+08		4.68E+08
	739.50		12.13	-1.61E+06		4.97E+07
	777.92		4.28	-2.10E+09		1.40E+08
@ TC-99M	140.51		89.06	1.00E+26	1.00E+26	1.00E+26
RU-103	443.80		3.27	-2.86E+02	1.52E+01	4.51E+02
	497.08		90.90	-1.48E+01		1.52E+01
	610.33		5.75	5.62E+04		1.08E+03
RHRU-106	621.93		9.93	-2.87E+01	5.37E+01	5.37E+01
	1050.41		1.56	5.27E+02		4.55E+02
AG-108M	433.94		90.50	-4.89E+00	6.16E+00	6.23E+00
	614.28		89.90	-7.45E+02		2.34E+01
	722.94		90.90	-1.63E+00		6.16E+00
CD-109	88.03	*	3.61	3.71E+02	1.14E+02	1.14E+02
AG-110M	116.48		1.36	-1.26E+02	6.07E+00	4.28E+02
	446.81		3.72	-4.41E+01		1.73E+02
	620.36		2.79	-9.45E+03		2.06E+02
	657.76		94.00	-4.63E+01		6.07E+00
	677.62		10.28	-6.58E+00		5.58E+01
	687.02		6.39	-1.02E+01		9.18E+01
	706.68		16.32	-3.58E+01		4.23E+01
	744.28		4.70	1.55E+02		1.38E+02
	763.94		22.14	-1.57E+01		4.66E+01
	818.03		7.29	-4.30E+01		9.49E+01
	884.68		72.19	-6.27E+00		1.08E+01
	937.49		34.13	-2.41E+00		3.28E+01
	1384.30		24.12	-1.24E+01		5.37E+01
	1475.79		3.97	3.73E+01		2.06E+02
	1505.04		12.95	-3.89E+02		9.66E+01
	1562.30		1.02	8.21E+01		7.66E+02
SN-113	255.06		1.82	3.55E+03	1.24E+01	4.92E+02
	391.69		64.00	-1.33E+01		1.24E+01
IN-114	190.27		15.40	-3.19E+02	8.69E+01	8.69E+01
	558.43		4.40	1.11E+01		2.58E+02
	725.24		4.40	-1.09E+02		2.69E+02
SB-122	564.24		69.30	-1.38E+06	1.07E+07	1.07E+07
I-124	602.72		60.50	-1.42E+07	8.38E+04	8.38E+04
	722.78		9.98	-1.36E+05		5.21E+05
	1509.49		2.99	1.96E+07		3.36E+06
	1691.02		10.40	1.30E+05		5.22E+05
SB-124	602.73		97.80	-1.78E+03	1.05E+01	1.05E+01
	645.85		7.38	-7.77E+00		1.24E+02
	709.32		1.35	-1.16E+03		7.65E+02
	713.78		2.27	-1.25E+03		4.29E+02
	722.79		10.76	-2.56E+01		9.79E+01
	968.20		1.89	-4.32E+02		6.88E+02
	1045.13		1.84	-7.39E+02		6.16E+02
	1325.51		1.62	-2.18E+02		7.16E+02
	1355.18		1.04	-7.28E+02		1.10E+03

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-124	1368.16		2.62	-7.97E+03	1.05E+01	4.50E+02
		1436.56		1.23	-1.84E+02		1.01E+03
		1690.98		47.30	5.82E+00		2.33E+01
	I-125	30.98		20.10	5.82E+02	6.72E+01	6.72E+01
		35.49		6.68	1.61E+01		1.87E+02
	SB-125	176.31		6.82	-8.15E+01	2.23E+01	8.84E+01
		380.45		1.52	-2.95E+02		3.57E+02
		427.88		29.60	-5.42E+00		2.23E+01
		463.36		10.49	-2.28E+01		5.38E+01
		600.60		17.86	-5.36E+03		3.15E+01
		606.72		5.03	-9.60E+03		4.82E+02
		635.95		11.31	2.33E+01		4.53E+01
		671.45		1.80	-1.61E+03		2.90E+02
@	XE-125	188.42		54.00	1.00E+26	1.00E+26	1.00E+26
@		243.38		30.10	1.00E+26		1.00E+26
+	I-126	388.63	*	34.10	5.51E+02	2.26E+02	2.26E+02
	SB-126	414.80		83.30	-1.77E+02	1.06E+02	1.56E+02
		666.30		99.60	8.50E+02		1.40E+02
		695.00		99.60	-2.99E+02		1.06E+02
		697.00		28.90	-1.06E+03		3.69E+02
		720.50		53.80	-6.96E+01		2.22E+02
		856.70		17.60	-2.31E+02		7.74E+02
	I-129	39.58		7.45	-2.02E+02	6.76E+01	6.76E+01
@	I-130	418.01		34.15	1.00E+26	1.00E+26	1.00E+26
@		536.09		99.00	1.00E+26		1.00E+26
@		668.54		96.10	1.00E+26		1.00E+26
@		739.48		82.30	1.00E+26		1.00E+26
@		1157.47		11.30	1.00E+26		1.00E+26
	I-131	284.30		6.14	4.01E+04	7.36E+02	1.15E+04
		364.49		81.70	-2.95E+02		7.36E+02
		636.99		7.17	3.16E+03		8.03E+03
		722.91		1.77	-9.81E+03		3.70E+04
	XE-131M	163.93		1.91	-3.16E+03	7.75E+03	7.75E+03
	TE-132	111.76		1.74	4.37E+07	9.82E+05	3.62E+07
		116.30		1.96	-1.15E+07		3.89E+07
		228.16		88.00	-5.69E+06		9.82E+05
+	BA-133	53.16		2.20	-5.39E+01	1.07E+01	1.83E+02
		79.62		2.62	-4.30E+02		1.86E+02
		81.00	*	34.06	2.26E+01		1.07E+01
		160.61		0.64	-1.52E+00		9.34E+02
		223.23		0.45	-5.78E+01		1.27E+03
		276.40		7.16	-1.53E+03		8.36E+01
		302.85	*	18.33	8.47E+01		2.32E+01
		356.02		62.05	-6.64E+02		1.88E+01
		383.85		8.94	-1.37E+01		6.17E+01
	I-133	529.87		87.00	-4.72E+19	8.37E+19	8.37E+19
		875.33		4.51	7.92E+20		2.06E+21
+	CS-134	475.35	*	1.47	-7.67E+01	6.98E+00	2.32E+02
		563.23		8.38	1.43E+01		6.69E+01
		569.32		15.43	1.24E+01		3.69E+01
		604.70		97.56	-7.51E+02		1.27E+01
		795.84		85.44	-1.16E+01		6.98E+00

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
CS-134	801.93	8.73	-2.80E+02	6.98E+00	8.18E+01
	1038.57	1.00	1.32E+02		6.37E+02
	1167.94	1.80	-1.06E+03		3.71E+02
	1365.15	3.04	7.98E+01		2.18E+02
@ I-134	405.45	7.35	1.00E+26	1.00E+26	1.00E+26
@	540.83	7.60	1.00E+26		1.00E+26
@	595.36	11.20	1.00E+26		1.00E+26
@	621.79	10.60	1.00E+26		1.00E+26
@	677.34	7.80	1.00E+26		1.00E+26
@	847.03	95.40	1.00E+26		1.00E+26
@	884.09	64.90	1.00E+26		1.00E+26
@	1072.55	15.00	1.00E+26		1.00E+26
@	1136.16	9.20	1.00E+26		1.00E+26
CS-135	787.20	100.00	3.13E+01	6.33E+00	6.90E+00
	846.10	95.90	-1.41E+01		6.33E+00
@ I-135	417.63	3.55	1.00E+26	1.00E+26	1.00E+26
@	546.56	7.20	1.00E+26		1.00E+26
@	836.80	6.73	1.00E+26		1.00E+26
@	1038.76	8.00	1.00E+26		1.00E+26
@	1124.00	3.64	1.00E+26		1.00E+26
@	1131.51	22.74	1.00E+26		1.00E+26
@	1260.41	28.90	1.00E+26		1.00E+26
@	1457.56	8.73	1.00E+26		1.00E+26
@	1678.03	9.62	1.00E+26		1.00E+26
@	1706.46	4.13	1.00E+26		1.00E+26
@	1791.20	7.77	1.00E+26		1.00E+26
@ XE-135	249.79	90.20	1.00E+26	1.00E+26	1.00E+26
@	608.18	2.90	1.00E+26		1.00E+26
@ XE-135M	526.56	80.50	1.00E+26	1.00E+26	1.00E+26
CS-136	66.88	4.80	2.16E+04	1.08E+02	1.87E+03
	86.36	5.20	1.14E+04		1.71E+03
	153.25	5.77	-2.22E+03		2.01E+03
	163.92	3.40	-1.28E+03		3.15E+03
	176.60	10.00	-1.04E+03		1.06E+03
	273.65	11.10	1.19E+04		1.25E+03
	340.55	42.30	-1.01E+02		2.57E+02
	818.51	100.00	-2.09E+01		1.08E+02
	1048.07	80.00	-1.17E+02		1.45E+02
	1235.36	20.10	-1.36E+03		1.15E+03
CS-137	661.66	85.10	-2.69E+01	7.14E+00	7.14E+00
@ CS-138	138.10	1.49	1.00E+26	1.00E+26	1.00E+26
@	227.76	1.51	1.00E+26		1.00E+26
@	408.98	4.66	1.00E+26		1.00E+26
@	462.80	30.70	1.00E+26		1.00E+26
@	547.00	10.76	1.00E+26		1.00E+26
@	871.80	5.11	1.00E+26		1.00E+26
@	1009.78	29.80	1.00E+26		1.00E+26
@	1147.22	1.24	1.00E+26		1.00E+26
@	1343.59	1.14	1.00E+26		1.00E+26
@	1435.86	76.30	1.00E+26		1.00E+26
LA-138	788.74	33.60	-3.43E+00	9.91E+00	2.05E+01
	1435.80	66.40	-2.02E+00		9.91E+00

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
@ BA-139	165.86	23.60	1.00E+26	1.00E+26	1.00E+26
CE-139	165.85	79.90	-7.07E+00	9.66E+00	9.66E+00
BA-140	162.66	6.21	-4.08E+02	4.45E+02	1.90E+03
	304.85	4.30	-3.67E+04		2.75E+03
	423.72	3.10	-2.44E+03		4.13E+03
	437.58	1.93	-9.44E+03		5.70E+03
	537.26	24.39	-2.76E+02		4.45E+02
LA-140	328.76	20.32	1.89E+11	5.86E+10	2.22E+11
	432.49	2.90	-9.62E+11		1.47E+12
	487.02	45.50	1.26E+10		9.18E+10
	751.64	4.33	4.40E+11		9.63E+11
	815.77	23.30	-8.70E+11		1.85E+11
	867.85	5.50	-1.10E+11		8.96E+11
	919.55	2.66	-1.26E+12		1.86E+12
	925.19	6.90	-9.77E+12		7.02E+11
	1596.21	95.40	-3.19E+10		5.86E+10
CE-141	145.44	48.20	-4.66E+01	4.28E+01	4.28E+01
CE-144	80.12	1.36	-3.72E+03	5.61E+01	3.78E+02
	133.51	11.09	5.75E+00		5.61E+01
PM-144	476.78	41.98	1.49E+00	5.52E+00	1.41E+01
	618.01	98.59	-1.31E+03		5.59E+00
	694.00	0.55	-1.98E+03		9.93E+02
	696.49	99.49	-1.71E+01		5.52E+00
	778.57	1.51	-6.07E+03		4.05E+02
	814.14	0.55	-5.46E+03		1.17E+03
PM-146	146.20	0.22	-7.26E+03	8.55E+00	2.96E+03
	453.88	66.00	-3.71E+00		8.55E+00
	589.80	0.43	-1.91E+03		1.24E+03
	633.25	1.12	2.18E+02		4.49E+02
	735.93	22.80	-6.29E+00		2.32E+01
	747.24	17.71	-5.81E+00		3.13E+01
ND-147	91.11	27.90	-3.32E+03	4.71E+02	4.71E+02
	319.41	1.95	-1.13E+04		8.87E+03
	398.15	0.87	-6.34E+04		2.18E+04
	439.89	1.20	-2.01E+04		1.47E+04
	531.02	13.09	-6.23E+02		1.32E+03
EU-152	121.78	28.42	7.82E+00	1.82E+01	1.82E+01
	244.70	7.49	-2.06E+02		1.11E+02
	295.94	0.44	1.04E+05		2.80E+03
	344.28	26.58	-1.95E+02		2.12E+01
	411.12	2.23	-1.87E+02		2.73E+02
	443.98	3.09	-1.12E+02		1.82E+02
	688.67	0.83	-1.65E+02		6.05E+02
	778.90	12.96	-4.42E+02		4.28E+01
	867.39	4.15	-2.60E+01		1.60E+02
	964.13	14.50	6.23E+01		4.75E+01
	1005.28	0.65	2.92E+02		9.92E+02
	1085.87	10.16	-2.38E+00		6.24E+01
	1089.70	1.71	-3.48E+01		3.72E+02
	1112.12	13.54	-1.73E+03		4.87E+01
	1212.95	1.40	-6.23E+02		4.93E+02
	1299.12	1.63	5.04E+01		3.77E+02

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	EU-152	1408.01		20.87	-4.35E+01	1.82E+01	5.35E+01
+	GD-153	69.67		2.54	-5.10E+02	1.20E+01	2.18E+02
		97.43	*	30.20	-2.21E+00		1.20E+01
		103.18		21.44	-1.25E+01		2.12E+01
	EU-154	123.07		40.78	5.41E+00	1.28E+01	1.28E+01
		247.93		6.95	-9.35E+02		7.99E+01
		444.49		0.56	-5.76E+02		1.00E+03
		582.10		0.89	9.37E+02		6.48E+02
		591.76		4.99	-6.96E+01		1.07E+02
		692.42		1.80	-2.78E+02		2.74E+02
		723.30		20.22	-7.43E+00		2.80E+01
		756.80		4.57	-1.20E+02		1.23E+02
		815.53		0.52	-5.27E+03		1.12E+03
		845.39		0.59	-2.07E+03		1.06E+03
		873.19		12.27	2.50E+01		5.55E+01
		892.78		0.52	5.78E+02		1.36E+03
		904.08		0.90	2.36E+02		8.02E+02
		996.26		10.59	3.36E+01		6.16E+01
		1004.72		18.00	5.06E+00		3.59E+01
		1246.15		0.87	-1.97E+04		8.52E+02
		1274.44		35.19	-6.90E+01		1.84E+01
		1494.05		0.70	-3.18E+01		1.13E+03
		1596.49		1.80	-1.29E+02		4.20E+02
	EU-155	45.30		1.32	6.77E+02	1.26E+01	3.57E+02
		60.01		1.13	-3.32E+02		3.48E+02
		86.54	*	30.70	4.10E+01		1.26E+01
		105.31		21.15	-1.85E+01		1.89E+01
	W-187	72.00		11.10	-6.01E+18	1.12E+18	2.19E+18
		134.25		8.80	-4.23E+17		3.77E+18
		479.55		21.80	-1.29E+18		1.58E+18
		618.26		6.28	-1.13E+21		4.80E+18
		625.52		1.09	-2.81E+19		2.67E+19
		685.73		27.30	-2.80E+16		1.12E+18
		772.89		4.12	-8.49E+19		1.46E+19
	IR-192	295.96		28.66	2.67E+03	1.11E+01	7.17E+01
		308.46		30.00	-4.10E+01		3.02E+01
		316.51		82.81	-6.40E+00		1.11E+01
		468.07		47.83	-1.73E+01		1.85E+01
		588.58		4.51	-2.33E+02		1.95E+02
		604.41		8.23	-1.42E+04		2.39E+02
		612.47		5.31	-1.53E+04		7.42E+02
	TL-201	135.34		2.56	-1.90E+06	1.68E+07	6.20E+07
		167.43		10.00	-8.44E+06		1.68E+07
	HG-203	279.20		81.46	-2.17E+02	1.58E+01	1.58E+01
	TL-208	277.36		6.31	-1.88E+03	6.75E+00	9.25E+01
		510.77		22.60	1.44E+02		2.75E+01
		583.19		84.50	-1.71E+00		6.75E+00
		763.13		1.81	-2.56E+02		3.60E+02
		860.56		12.42	-1.76E+00		5.18E+01
+	PB-210	46.54	*	4.25	1.78E+02	9.98E+01	9.98E+01
	BI-211	351.06		12.91	8.00E+03	1.37E+02	1.37E+02
+	PB-211	404.85	*	3.78	8.08E+02	1.15E+02	1.15E+02

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PB-211	427.09	*	1.76	7.95E+02	1.15E+02	2.78E+02
		704.64		0.46	3.76E+03		1.28E+03
		766.51		0.62	-5.02E+01		1.63E+03
		832.01	*	3.52	3.19E+01		1.23E+02
	BI-212	727.33		6.58	-6.69E+01	7.88E+01	7.88E+01
		785.37		1.10	2.81E+03		6.25E+02
		1078.62		0.56	-5.80E+02		1.08E+03
		1620.50		1.49	1.51E+01		3.93E+02
	PB-212	115.18		0.59	1.14E+02	1.73E+01	7.02E+02
		238.63		43.30	5.63E+01		1.73E+01
		300.09		3.28	-9.11E+03		2.04E+02
+	BI-214	609.31	*	44.80	2.73E+03	9.76E+00	9.76E+00
		665.45	*	1.29	3.03E+03		2.86E+02
		768.36	*	4.80	2.94E+03		1.19E+02
		806.17	*	1.22	2.78E+03		3.55E+02
		934.06	*	3.03	2.79E+03		2.04E+02
		1120.29	*	14.80	2.83E+03		3.78E+01
		1155.19	*	1.64	2.84E+03		2.96E+02
		1207.68	*	0.49	2.34E+03		8.68E+02
		1238.11	*	5.86	2.80E+03		8.61E+01
		1280.96	*	1.44	2.78E+03		3.51E+02
		1377.67	*	3.92	2.94E+03		1.15E+02
		1385.31	*	0.89	2.54E+03		5.16E+02
		1401.50	*	1.55	2.34E+03		2.79E+02
		1407.98	*	2.80	2.45E+03		1.57E+02
		1415.80		0.48	-1.28E+04		1.47E+03
		1509.23	*	2.12	2.85E+03		2.53E+02
		1583.22	*	0.70	2.46E+03		6.08E+02
		1661.28	*	1.14	2.63E+03		3.33E+02
		1729.59	*	2.88	2.84E+03		1.28E+02
		1764.49	*	15.36	2.88E+03		2.90E+01
		1847.42	*	2.04	2.61E+03		2.13E+02
+	PB-214	53.23		1.11	-1.06E+02	1.67E+01	3.59E+02
		241.98	*	7.50	1.68E+03		8.26E+01
		258.79	*	0.55	2.05E+03		7.78E+02
		295.21	*	18.50	2.63E+03		2.20E+01
		351.92	*	35.80	2.89E+03		1.67E+01
		785.91	*	0.85	3.60E+03		7.36E+02
		839.03	*	0.63	-1.96E+01		8.04E+02
+	RN-219	130.59		0.12	-2.09E+03	3.93E+01	4.45E+03
		271.23	*	10.80	6.12E+02		3.93E+01
		401.81	*	6.37	6.76E+02		6.77E+01
	RN-220	549.73		0.11	-7.42E+02	4.76E+03	4.76E+03
+	RA-223	122.32		1.19	1.51E+02	3.08E+01	4.32E+02
		144.23	*	3.22	1.41E+03		1.70E+02
		154.21	*	5.62	5.75E+02		8.02E+01
		158.63	*	0.69	-1.90E+03		7.24E+02
		179.54		0.15	-1.94E+04		3.91E+03
		269.46	*	13.70	6.05E+02		3.08E+01
		288.18		0.16	-2.20E+05		3.66E+03
		323.87	*	3.93	3.03E+02		9.73E+01
		328.40		0.21	8.37E+03		2.94E+03

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	RA-223	338.28	*	2.79	1.93E+02	3.08E+01	1.50E+02
		342.90		0.22	-2.33E+04		2.58E+03
		346.80		0.18	-2.04E+04		3.16E+03
		371.68		0.48	4.95E+02		1.09E+03
	RA-224	240.99		3.97	3.47E+03	2.12E+02	2.12E+02
	RA-226	186.10	*	3.50	3.01E+03	2.02E+02	2.02E+02
+	TH-227	50.13	*	8.00	-2.41E+01	3.81E+01	3.81E+01
		79.72		1.89	-5.90E+02		2.55E+02
		93.93	*	1.37	-8.82E+02		2.34E+02
		210.65	*	1.10	1.95E+02		4.77E+02
		235.97	*	12.70	-4.24E+02		5.93E+01
		256.25	*	7.01	5.73E+02		6.14E+01
		286.12	*	1.54	-3.14E+04		8.59E+02
		300.00	*	2.67	1.02E+03		1.59E+02
		304.51		1.23	-1.62E+04		4.97E+02
		329.85	*	2.69	2.50E+02		1.64E+02
		334.38	*	1.05	1.11E+02		3.83E+02
	AC-228	99.50		1.28	-1.56E+02	2.63E+01	3.13E+02
		129.07		2.45	-7.56E+01		2.17E+02
		153.98		0.74	-6.96E+02		8.62E+02
		209.25		3.88	-3.26E+01		1.52E+02
		270.24		3.43	4.34E+03		2.40E+02
		327.90		3.06	1.07E+03		2.08E+02
		332.37		0.40	1.23E+03		1.55E+03
		338.32		11.25	-8.55E+00		5.31E+01
		409.46		1.94	-1.39E+02		3.41E+02
		463.01		4.44	-5.17E+01		1.22E+02
		508.96		0.47	6.35E+03		1.31E+03
		562.50		0.87	2.46E+02		6.12E+02
		755.32		1.00	-3.04E+02		5.54E+02
		772.29		1.50	-3.07E+03		6.71E+02
		782.14		0.50	-7.81E+01		1.33E+03
		794.95		4.34	-8.53E+01		1.30E+02
		830.49		0.55	1.53E+03		1.29E+03
		835.71		1.68	2.04E+03		4.49E+02
		840.38		0.94	-1.11E+03		7.09E+02
		904.20		0.78	2.69E+02		9.14E+02
		911.21		26.60	1.49E+01		2.63E+01
		964.77		5.11	2.02E+02		1.34E+02
		968.97		16.20	-3.06E+01		4.24E+01
		1247.08		0.50	-3.64E+04		1.26E+03
		1459.14		0.80	2.39E+02		8.58E+02
		1495.91		0.89	1.93E+01		8.79E+02
		1580.54		0.61	2.84E+03		1.26E+03
		1588.21		3.27	-2.64E+02		2.41E+02
		1630.63		1.60	-3.54E+01		3.47E+02
+	TH-228	84.37	*	1.23	1.83E+03	2.89E+02	2.89E+02
		215.99		0.26	-1.59E+03		2.17E+03
	TH-229	75.09		0.61	9.15E+03	1.25E+02	8.81E+02
		86.35		3.90	8.34E+02		1.25E+02
		124.60		1.43	2.11E+02		3.65E+02
		136.99		1.18	-2.12E+03		4.71E+02

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	TH-229	148.15		0.88	-3.87E+03	1.25E+02	6.69E+02
		154.34		0.77	-4.73E+02		8.29E+02
		156.41		1.19	3.17E+03		5.40E+02
		193.51		4.41	-1.09E+03		1.36E+02
		204.69		0.60	4.07E+01		9.89E+02
		210.85		2.77	-6.88E+01		2.11E+02
+	PA-231	283.69		1.70	1.05E+03	1.73E+02	3.56E+02
		300.07	*	2.46	1.10E+03		1.73E+02
		302.65	*	2.20	6.99E+02		1.91E+02
		330.06	*	1.40	4.81E+02		3.15E+02
+	TH-231	81.23	*	0.89	8.56E+02	5.39E+01	4.06E+02
		84.21	*	6.60	3.40E+02		5.39E+01
		89.95	*	0.94	1.77E+02		3.97E+02
	TH-232	63.81		0.27	-5.06E+03	1.46E+03	1.46E+03
	U-232	57.78		0.20	-2.35E+03	1.92E+03	1.92E+03
		129.08		0.07	-2.69E+03		7.71E+03
	PA-233	75.35		1.39	4.01E+03	1.42E+01	3.86E+02
		86.81		1.97	5.74E+02		2.36E+02
		103.97		0.87	-3.39E+02		4.48E+02
		271.48		0.33	4.83E+04		2.53E+03
		300.34		6.62	-4.51E+03		1.01E+02
		312.17		38.60	-1.14E+01		1.42E+01
		340.81		4.47	-5.23E+01		1.34E+02
		375.45		0.68	1.95E+02		7.74E+02
		398.62		1.39	-9.86E+02		4.48E+02
		415.76		1.75	-2.13E+02		3.47E+02
+	U-233	42.44		0.09	-1.99E+04	5.36E+03	5.36E+03
		54.70		0.02	-7.13E+03		2.19E+04
		97.13	*	0.02	-2.85E+03		1.55E+04
	PA-234	62.70		1.55	-1.25E+03	2.98E+01	2.53E+02
		99.86		3.19	-1.13E+02		1.25E+02
		125.46		0.78	3.53E+02		6.71E+02
		131.30		18.00	-4.81E+00		2.98E+01
		140.50		0.81	-1.42E+03		7.02E+02
		152.71		5.97	-2.02E+02		1.07E+02
		159.48	*	0.65	-2.02E+03		7.69E+02
		170.85		0.50	-1.22E+02		1.16E+03
		186.15	*	1.76	5.99E+03		4.01E+02
		193.73		0.49	-1.04E+04		1.22E+03
		200.97		0.90	-1.25E+02		6.61E+02
		203.12		1.23	6.93E+01		4.85E+02
		227.00		9.99	-1.95E+01		5.67E+01
		245.37		0.75	-3.08E+03		1.04E+03
		249.22		2.47	-4.33E+03		2.22E+02
		272.28	*	1.08	6.12E+03		3.93E+02
		293.79		2.99	-1.64E+03		4.08E+02
		330.40	*	0.77	8.74E+02		5.73E+02
		369.50		2.47	1.60E+02		2.13E+02
		372.00		1.21	2.31E+02		4.34E+02
		458.68		1.13	-2.05E+02		4.99E+02
		506.75		1.29	-7.66E+01		4.45E+02
		513.40		1.10	-5.85E+02		5.66E+02

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PA-234	521.40		0.74	-1.94E+03	2.98E+01	6.97E+02
		565.20		1.03	-2.05E+02		5.16E+02
		569.32		11.80	1.55E+01		4.59E+01
		602.60		0.54	-1.71E+05		1.01E+03
		663.90		0.54	-2.59E+03		1.20E+03
		666.50	*	1.16	3.37E+03		3.18E+02
		669.70		0.99	-2.05E+03		6.54E+02
		692.60		1.24	-3.99E+02		3.93E+02
		699.03		3.61	-2.90E+02		1.49E+02
		705.90		2.27	-2.10E+02		2.60E+02
		730.90		0.63	1.46E+02		8.30E+02
		733.39		6.90	-1.68E+01		7.54E+01
		738.00		1.15	1.20E+01		4.67E+02
		742.81	*	2.06	2.03E+02		3.05E+02
		755.00		1.22	1.00E+02		4.54E+02
		780.40		0.90	-2.29E+02		6.35E+02
		786.27	*	1.19	2.57E+03		5.26E+02
		794.90		1.34	-2.76E+02		4.22E+02
		796.10		2.58	-3.64E+02		2.20E+02
		805.52		3.14	-3.63E+02		2.28E+02
		819.20		1.88	-6.30E+01		3.16E+02
		824.65		3.12	-5.83E+02		1.98E+02
		831.50	*	4.12	2.72E+01		1.05E+02
		876.00		2.52	1.32E+02		2.67E+02
		880.50		10.40	-2.45E+01		6.42E+01
		883.24		9.58	-3.53E+01		7.00E+01
		898.67		3.24	4.05E+01		2.19E+02
		926.00		16.80	-5.49E+02		3.85E+01
		946.18		15.00	8.49E-01		4.25E+01
		980.48		5.15	-3.74E+01		1.22E+02
		984.20		1.62	-1.24E+02		3.85E+02
		1028.70		0.57	-7.92E-01		1.07E+03
		1083.20		0.50	3.41E+02		1.27E+03
		1352.90		1.15	-3.96E+02		5.24E+02
		1393.90		2.06	-2.25E+03		3.03E+02
		1668.40		0.76	-2.25E+03		9.03E+02
		1693.80	*	0.69	3.73E+02		5.81E+02
	PA-234M	766.36		0.29	-1.06E+02	7.69E+02	3.44E+03
		811.00		0.51	-3.53E+03		1.40E+03
		1001.03		0.84	2.70E+02		7.69E+02
	TH-234	63.29		4.84	-3.36E+02	7.37E+01	8.12E+01
		83.30		0.08	1.15E+04		6.28E+03
		92.59		5.58	-2.04E+02		7.37E+01
		112.81		0.28	1.78E+03		1.48E+03
	U-234	53.20		0.12	-9.54E+02	3.24E+03	3.24E+03
		120.90		0.03	4.03E+03		1.51E+04
+	U-235	109.16		1.54	-3.88E+01	1.23E+01	2.60E+02
		143.76	*	10.96	4.13E+02		5.01E+01
		163.36		5.08	-3.32E+01		1.16E+02
		185.71	*	57.20	1.84E+02		1.23E+01
		194.94		0.63	-4.95E+03		9.52E+02
		202.11		1.08	1.53E+02		5.51E+02

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	U-235	205.31		5.01	-1.13E+01	1.23E+01	1.18E+02
+	NP-237	57.10		0.39	-1.30E+03	3.04E+01	9.89E+02
		86.48	*	12.40	9.93E+01		3.04E+01
		94.64	*	0.60	-2.01E+03		5.35E+02
		143.25	*	0.43	1.05E+04		1.28E+03
	NP-239	106.12		27.20	-1.71E+08	1.59E+08	1.59E+08
		209.75		3.42	-7.06E+08		1.90E+09
		228.18		10.76	-3.37E+09		5.82E+08
		277.60		14.38	-9.20E+09		4.47E+08
		334.31		2.07	-4.77E+09		3.13E+09
	AM-241	59.54		35.90	-1.01E+01	1.07E+01	1.07E+01
	CM-241	132.41		3.90	5.75E+01	2.39E+01	4.44E+02
		165.01		3.40	-2.80E+02		5.53E+02
		205.88		2.67	-6.22E+01		7.09E+02
		430.63		4.06	-1.45E+02		4.86E+02
		463.27		1.23	-5.99E+02		1.41E+03
		471.80		71.30	-4.83E+00		2.39E+01
		636.88		1.53	5.04E+02		1.03E+03
+	AM-243	74.66	*	68.20	2.82E+01	5.51E+00	5.51E+00

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.60	10.42	1.13E+02	1.13E+02	1.01E+02	5.61E+01
	NA-22	1274.53	99.94	6.67E+00	6.67E+00	-2.50E+01	3.31E+00
@	NA-24	1368.63	100.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
>@		2754.03	99.94	0.00E+00		0.00E+00	0.00E+00
	K-40	1460.83	10.67	6.39E+01	6.39E+01	-1.07E+00	3.17E+01
@	AR-41	1293.59	99.10	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	CR-51	320.08	9.86	2.20E+02	2.20E+02	-2.75E+02	1.10E+02
	MN-54	834.85	99.98	8.41E+00	8.41E+00	3.31E+01	4.18E+00
	CO-56	846.77	99.93	9.90E+00	1.59E+00	-2.42E+01	4.92E+00
		977.37	1.44	7.20E+02		-5.67E+01	3.57E+02
		1037.84	13.99	7.10E+01		2.02E+01	3.53E+01
		1175.10	2.28	4.59E+02		-3.87E+02	2.28E+02
		1238.28	67.56	3.08E+01		3.99E+02	1.53E+01
		1360.21	4.33	2.36E+02		6.18E+01	1.17E+02
		1771.35	15.69	2.13E+02		-2.39E+03	1.06E+02
		2015.18	3.08	4.06E+00		0.00E+00	0.00E+00

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CO-56	2034.76	7.89	1.59E+00	1.59E+00	0.00E+00	0.00E+00
@ MN-56	846.75	98.87	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1810.72	27.19	1.00E+26		1.00E+26	1.00E+20
>@	2113.05	14.34	0.00E+00		0.00E+00	0.00E+00
CO-57	122.06	85.60	6.91E+00	6.91E+00	2.41E+00	3.45E+00
	136.47	10.68	5.97E+01		-1.91E+02	2.98E+01
	692.41	0.16	3.57E+03		-3.62E+03	1.77E+03
CO-58	810.78	99.45	1.23E+01	1.23E+01	-3.10E+01	6.13E+00
	863.96	0.68	1.64E+03		2.41E+01	8.14E+02
	1674.73	0.52	1.52E+03		-9.80E+03	7.51E+02
FE-59	142.65	1.02	1.46E+03	2.75E+01	1.07E+04	7.29E+02
	192.35	3.08	4.57E+02		-3.05E+03	2.28E+02
	1099.25	56.50	2.75E+01		-8.47E+00	1.36E+01
	1291.60	43.20	3.31E+01		-1.83E+02	1.64E+01
CO-60	1173.24	99.90	6.52E+00	6.36E+00	-5.79E+00	3.23E+00
	1332.50	99.98	6.36E+00		7.96E-01	3.15E+00
@ CU-64	1345.77	0.47	1.00E+26	1.00E+26	1.00E+26	1.00E+20
ZN-65	1115.55	50.60	4.00E+01	4.00E+01	-4.70E+02	1.99E+01
SE-75	66.05	1.12	5.53E+02	1.24E+01	2.86E+03	2.76E+02
	96.73	3.42	1.69E+02		4.54E+02	8.43E+01
	121.12	17.14	4.12E+01		1.60E+01	2.05E+01
	136.00	58.27	1.30E+01		-1.49E+01	6.50E+00
	198.61	1.47	5.60E+02		1.87E+02	2.80E+02
	264.66	58.50	1.24E+01		-7.08E+01	6.20E+00
	279.54	24.79	3.15E+01		-3.82E+02	1.57E+01
	303.93	1.31	6.65E+02		-3.07E+04	3.32E+02
	400.66	11.37	8.56E+01		-9.69E+01	4.27E+01
RB-83	520.39	44.70	1.79E+01	1.79E+01	-8.66E+01	8.92E+00
	529.59	29.30	2.80E+01		-1.58E+01	1.39E+01
	552.59	15.96	5.06E+01		-4.45E+01	2.52E+01
@ BR-84	881.60	42.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1897.60	14.90	1.00E+26		1.00E+26	1.00E+20
KR-85	514.01	0.43	1.45E+03	1.45E+03	-2.12E+03	7.22E+02
@ KR-85M	151.20	75.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	304.87	14.00	1.00E+26		1.00E+26	1.00E+20
SR-85	514.01	95.70	1.16E+01	1.16E+01	-1.70E+01	5.79E+00
@ SR-85m	151.19	12.90	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	231.86	84.40	1.00E+26		1.00E+26	1.00E+20
RB-86	1077.00	8.64	5.56E+02	5.56E+02	-3.09E+02	2.76E+02
@ KR-87	402.59	49.60	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	673.83	1.89	1.00E+26		1.00E+26	1.00E+20
@	845.44	7.30	1.00E+26		1.00E+26	1.00E+20
@	1175.40	1.11	1.00E+26		1.00E+26	1.00E+20
@	1740.52	2.04	1.00E+26		1.00E+26	1.00E+20
@ KR-88	165.98	3.10	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	196.30	26.00	1.00E+26		1.00E+26	1.00E+20
@	362.23	2.25	1.00E+26		1.00E+26	1.00E+20
@	834.83	13.00	1.00E+26		1.00E+26	1.00E+20
@	985.78	1.52	1.00E+26		1.00E+26	1.00E+20
@	1141.33	1.28	1.00E+26		1.00E+26	1.00E+20
@	1179.51	1.00	1.00E+26		1.00E+26	1.00E+20
@	1250.67	1.12	1.00E+26		1.00E+26	1.00E+20
@	1369.50	1.48	1.00E+26		1.00E+26	1.00E+20

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
@ KR-88	1518.39		2.15	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1529.77		10.90	1.00E+26		1.00E+26	1.00E+20
@ RB-88	898.03		14.04	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1836.01		21.40	1.00E+26		1.00E+26	1.00E+20
Y-88	898.04		93.68	1.08E+01	7.49E+00	2.89E+00	5.38E+00
	1836.06		99.24	7.49E+00		4.02E-01	3.69E+00
NB-94x	702.62		97.90	5.94E+00	5.94E+00	1.59E+01	2.95E+00
	871.09		99.90	6.69E+00		1.25E+00	3.32E+00
NB-95	765.81		99.81	3.01E+01	3.01E+01	-2.08E+00	1.50E+01
NB-95m	204.12		2.33	1.01E+07	1.20E+06	-2.98E+03	5.03E+06
	235.69	*	24.80	1.20E+06		-8.59E+06	5.99E+05
ZR-95	724.20		44.17	2.31E+01	1.85E+01	-7.86E+00	1.15E+01
	756.73		54.46	1.85E+01		-1.80E+01	9.17E+00
NB-96	460.04		26.62	2.31E+18	6.38E+17	-9.77E+17	1.15E+18
	568.87		57.97	1.05E+18		3.30E+17	5.21E+17
	778.22		96.45	6.38E+17		-9.59E+18	3.17E+17
	849.93		20.40	3.31E+18		-4.84E+18	1.64E+18
	1200.23		19.96	3.42E+18		-7.40E+18	1.69E+18
MO-99	140.51		4.52	1.37E+08	4.97E+07	-2.77E+08	6.84E+07
	181.06		6.08	1.06E+08		-3.08E+08	5.30E+07
	366.42		1.20	4.68E+08		-1.32E+08	2.33E+08
	739.50		12.13	4.97E+07		-1.61E+06	2.47E+07
	777.92		4.28	1.40E+08		-2.10E+09	6.93E+07
@ TC-99M	140.51		89.06	1.00E+26	1.00E+26	1.00E+26	1.00E+20
RU-103	443.80		3.27	4.51E+02	1.52E+01	-2.86E+02	2.25E+02
	497.08		90.90	1.52E+01		-1.48E+01	7.55E+00
	610.33		5.75	1.08E+03		5.62E+04	5.39E+02
RHRU-106	621.93		9.93	5.37E+01	5.37E+01	-2.87E+01	2.67E+01
	1050.41		1.56	4.55E+02		5.27E+02	2.26E+02
AG-108M	433.94		90.50	6.23E+00	6.16E+00	-4.89E+00	3.10E+00
	614.28		89.90	2.34E+01		-7.45E+02	1.17E+01
	722.94		90.90	6.16E+00		-1.63E+00	3.06E+00
CD-109	88.03	*	3.61	1.14E+02	1.14E+02	3.71E+02	5.66E+01
AG-110M	116.48		1.36	4.28E+02	6.07E+00	-1.26E+02	2.13E+02
	446.81		3.72	1.73E+02		-4.41E+01	8.62E+01
	620.36		2.79	2.06E+02		-9.45E+03	1.03E+02
	657.76		94.00	6.07E+00		-4.63E+01	3.01E+00
	677.62		10.28	5.58E+01		-6.58E+00	2.77E+01
	687.02		6.39	9.18E+01		-1.02E+01	4.56E+01
	706.68		16.32	4.23E+01		-3.58E+01	2.10E+01
	744.28		4.70	1.38E+02		1.55E+02	6.87E+01
	763.94		22.14	4.66E+01		-1.57E+01	2.32E+01
	818.03		7.29	9.49E+01		-4.30E+01	4.71E+01
	884.68		72.19	1.08E+01		-6.27E+00	5.39E+00
	937.49		34.13	3.28E+01		-2.41E+00	1.63E+01
	1384.30		24.12	5.37E+01		-1.24E+01	2.67E+01
	1475.79		3.97	2.06E+02		3.73E+01	1.02E+02
	1505.04		12.95	9.66E+01		-3.89E+02	4.80E+01
	1562.30		1.02	7.66E+02		8.21E+01	3.79E+02
SN-113	255.06		1.82	4.92E+02	1.24E+01	3.55E+03	2.45E+02
	391.69		64.00	1.24E+01		-1.33E+01	6.20E+00
IN-114	190.27		15.40	8.69E+01	8.69E+01	-3.19E+02	4.33E+01
	558.43		4.40	2.58E+02		1.11E+01	1.28E+02

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	IN-114	725.24		4.40	2.69E+02	8.69E+01	-1.09E+02	1.34E+02
	SB-122	564.24		69.30	1.07E+07	1.07E+07	-1.38E+06	5.33E+06
	I-124	602.72		60.50	8.38E+04	8.38E+04	-1.42E+07	4.17E+04
		722.78		9.98	5.21E+05		-1.36E+05	2.59E+05
		1509.49		2.99	3.36E+06		1.96E+07	1.67E+06
		1691.02		10.40	5.22E+05		1.30E+05	2.58E+05
	SB-124	602.73		97.80	1.05E+01	1.05E+01	-1.78E+03	5.23E+00
		645.85		7.38	1.24E+02		-7.77E+00	6.16E+01
		709.32		1.35	7.65E+02		-1.16E+03	3.80E+02
		713.78		2.27	4.29E+02		-1.25E+03	2.13E+02
		722.79		10.76	9.79E+01		-2.56E+01	4.87E+01
		968.20		1.89	6.88E+02		-4.32E+02	3.42E+02
		1045.13		1.84	6.16E+02		-7.39E+02	3.06E+02
		1325.51		1.62	7.16E+02		-2.18E+02	3.55E+02
		1355.18		1.04	1.10E+03		-7.28E+02	5.45E+02
		1368.16		2.62	4.50E+02		-7.97E+03	2.23E+02
		1436.56		1.23	1.01E+03		-1.84E+02	5.02E+02
		1690.98		47.30	2.33E+01		5.82E+00	1.15E+01
	I-125	30.98		20.10	6.72E+01	6.72E+01	5.82E+02	3.35E+01
		35.49		6.68	1.87E+02		1.61E+01	9.34E+01
	SB-125	176.31		6.82	8.84E+01	2.23E+01	-8.15E+01	4.41E+01
		380.45		1.52	3.57E+02		-2.95E+02	1.78E+02
		427.88		29.60	2.23E+01		-5.42E+00	1.11E+01
		463.36		10.49	5.38E+01		-2.28E+01	2.68E+01
		600.60		17.86	3.15E+01		-5.36E+03	1.57E+01
		606.72		5.03	4.82E+02		-9.60E+03	2.41E+02
		635.95		11.31	4.53E+01		2.33E+01	2.25E+01
		671.45		1.80	2.90E+02		-1.61E+03	1.44E+02
@	XE-125	188.42		54.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		243.38		30.10	1.00E+26		1.00E+26	1.00E+20
+	I-126	388.63	*	34.10	2.26E+02	2.26E+02	5.51E+02	1.12E+02
	SB-126	414.80		83.30	1.56E+02	1.06E+02	-1.77E+02	7.76E+01
		666.30		99.60	1.40E+02		8.50E+02	6.95E+01
		695.00		99.60	1.06E+02		-2.99E+02	5.26E+01
		697.00		28.90	3.69E+02		-1.06E+03	1.83E+02
		720.50		53.80	2.22E+02		-6.96E+01	1.10E+02
		856.70		17.60	7.74E+02		-2.31E+02	3.85E+02
	I-129	39.58		7.45	6.76E+01	6.76E+01	-2.02E+02	3.37E+01
@	I-130	418.01		34.15	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		536.09		99.00	1.00E+26		1.00E+26	1.00E+20
@		668.54		96.10	1.00E+26		1.00E+26	1.00E+20
@		739.48		82.30	1.00E+26		1.00E+26	1.00E+20
@		1157.47		11.30	1.00E+26		1.00E+26	1.00E+20
	I-131	284.30		6.14	1.15E+04	7.36E+02	4.01E+04	5.76E+03
		364.49		81.70	7.36E+02		-2.95E+02	3.67E+02
		636.99		7.17	8.03E+03		3.16E+03	3.99E+03
		722.91		1.77	3.70E+04		-9.81E+03	1.84E+04
	XE-131M	163.93		1.91	7.75E+03	7.75E+03	-3.16E+03	3.87E+03
	TE-132	111.76		1.74	3.62E+07	9.82E+05	4.37E+07	1.80E+07
		116.30		1.96	3.89E+07		-1.15E+07	1.94E+07
		228.16		88.00	9.82E+05		-5.69E+06	4.90E+05
+	BA-133	53.16		2.20	1.83E+02	1.07E+01	-5.39E+01	9.14E+01
		79.62		2.62	1.86E+02		-4.30E+02	9.27E+01

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BA-133	81.00	*	34.06	1.07E+01	1.07E+01	2.26E+01	5.35E+00
		160.61		0.64	9.34E+02		-1.52E+00	4.66E+02
		223.23		0.45	1.27E+03		-5.78E+01	6.35E+02
		276.40		7.16	8.36E+01		-1.53E+03	4.17E+01
		302.85	*	18.33	2.32E+01		8.47E+01	1.15E+01
		356.02		62.05	1.88E+01		-6.64E+02	9.37E+00
		383.85		8.94	6.17E+01		-1.37E+01	3.07E+01
	I-133	529.87		87.00	8.37E+19	8.37E+19	-4.72E+19	4.16E+19
		875.33		4.51	2.06E+21		7.92E+20	1.02E+21
+	CS-134	475.35	*	1.47	2.32E+02	6.98E+00	-7.67E+01	1.15E+02
		563.23		8.38	6.69E+01		1.43E+01	3.33E+01
		569.32		15.43	3.69E+01		1.24E+01	1.84E+01
		604.70		97.56	1.27E+01		-7.51E+02	6.31E+00
		795.84		85.44	6.98E+00		-1.16E+01	3.47E+00
		801.93		8.73	8.18E+01		-2.80E+02	4.07E+01
		1038.57		1.00	6.37E+02		1.32E+02	3.16E+02
		1167.94		1.80	3.71E+02		-1.06E+03	1.84E+02
		1365.15		3.04	2.18E+02		7.98E+01	1.08E+02
	@ I-134	405.45		7.35	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	540.83		7.60	1.00E+26		1.00E+26	1.00E+20
	@	595.36		11.20	1.00E+26		1.00E+26	1.00E+20
	@	621.79		10.60	1.00E+26		1.00E+26	1.00E+20
	@	677.34		7.80	1.00E+26		1.00E+26	1.00E+20
	@	847.03		95.40	1.00E+26		1.00E+26	1.00E+20
	@	884.09		64.90	1.00E+26		1.00E+26	1.00E+20
	@	1072.55		15.00	1.00E+26		1.00E+26	1.00E+20
	@	1136.16		9.20	1.00E+26		1.00E+26	1.00E+20
	CS-135	787.20		100.00	6.90E+00	6.33E+00	3.13E+01	3.43E+00
		846.10		95.90	6.33E+00		-1.41E+01	3.14E+00
	@ I-135	417.63		3.55	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	546.56		7.20	1.00E+26		1.00E+26	1.00E+20
	@	836.80		6.73	1.00E+26		1.00E+26	1.00E+20
	@	1038.76		8.00	1.00E+26		1.00E+26	1.00E+20
	@	1124.00		3.64	1.00E+26		1.00E+26	1.00E+20
	@	1131.51		22.74	1.00E+26		1.00E+26	1.00E+20
	@	1260.41		28.90	1.00E+26		1.00E+26	1.00E+20
	@	1457.56		8.73	1.00E+26		1.00E+26	1.00E+20
	@	1678.03		9.62	1.00E+26		1.00E+26	1.00E+20
	@	1706.46		4.13	1.00E+26		1.00E+26	1.00E+20
	@	1791.20		7.77	1.00E+26		1.00E+26	1.00E+20
	@ XE-135	249.79		90.20	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	608.18		2.90	1.00E+26		1.00E+26	1.00E+20
	@ XE-135M	526.56		80.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	CS-136	66.88		4.80	1.87E+03	1.08E+02	2.16E+04	9.31E+02
		86.36		5.20	1.71E+03		1.14E+04	8.52E+02
		153.25		5.77	2.01E+03		-2.22E+03	1.00E+03
		163.92		3.40	3.15E+03		-1.28E+03	1.57E+03
		176.60		10.00	1.06E+03		-1.04E+03	5.28E+02
		273.65		11.10	1.25E+03		1.19E+04	6.24E+02
		340.55		42.30	2.57E+02		-1.01E+02	1.28E+02
		818.51		100.00	1.08E+02		-2.09E+01	5.38E+01
		1048.07		80.00	1.45E+02		-1.17E+02	7.20E+01
		1235.36		20.10	1.15E+03		-1.36E+03	5.72E+02

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	CS-137	661.66	85.10	7.14E+00	7.14E+00	-2.69E+01	3.55E+00
@	CS-138	138.10	1.49	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		227.76	1.51	1.00E+26		1.00E+26	1.00E+20
@		408.98	4.66	1.00E+26		1.00E+26	1.00E+20
@		462.80	30.70	1.00E+26		1.00E+26	1.00E+20
@		547.00	10.76	1.00E+26		1.00E+26	1.00E+20
@		871.80	5.11	1.00E+26		1.00E+26	1.00E+20
@		1009.78	29.80	1.00E+26		1.00E+26	1.00E+20
@		1147.22	1.24	1.00E+26		1.00E+26	1.00E+20
@		1343.59	1.14	1.00E+26		1.00E+26	1.00E+20
@		1435.86	76.30	1.00E+26		1.00E+26	1.00E+20
	LA-138	788.74	33.60	2.05E+01	9.91E+00	-3.43E+00	1.02E+01
		1435.80	66.40	9.91E+00		-2.02E+00	4.91E+00
@	BA-139	165.86	23.60	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	CE-139	165.85	79.90	9.66E+00	9.66E+00	-7.07E+00	4.82E+00
	BA-140	162.66	6.21	1.90E+03	4.45E+02	-4.08E+02	9.48E+02
		304.85	4.30	2.75E+03		-3.67E+04	1.37E+03
		423.72	3.10	4.13E+03		-2.44E+03	2.06E+03
		437.58	1.93	5.70E+03		-9.44E+03	2.84E+03
		537.26	24.39	4.45E+02		-2.76E+02	2.21E+02
	LA-140	328.76	20.32	2.22E+11	5.86E+10	1.89E+11	1.11E+11
		432.49	2.90	1.47E+12		-9.62E+11	7.33E+11
		487.02	45.50	9.18E+10		1.26E+10	4.57E+10
		751.64	4.33	9.63E+11		4.40E+11	4.78E+11
		815.77	23.30	1.85E+11		-8.70E+11	9.19E+10
		867.85	5.50	8.96E+11		-1.10E+11	4.45E+11
		919.55	2.66	1.86E+12		-1.26E+12	9.23E+11
		925.19	6.90	7.02E+11		-9.77E+12	3.49E+11
		1596.21	95.40	5.86E+10		-3.19E+10	2.91E+10
	CE-141	145.44	48.20	4.28E+01	4.28E+01	-4.66E+01	2.14E+01
	CE-144	80.12	1.36	3.78E+02	5.61E+01	-3.72E+03	1.89E+02
		133.51	11.09	5.61E+01		5.75E+00	2.80E+01
	PM-144	476.78	41.98	1.41E+01	5.52E+00	1.49E+00	7.00E+00
		618.01	98.59	5.59E+00		-1.31E+03	2.78E+00
		694.00	0.55	9.93E+02		-1.98E+03	4.93E+02
		696.49	99.49	5.52E+00		-1.71E+01	2.74E+00
		778.57	1.51	4.05E+02		-6.07E+03	2.01E+02
		814.14	0.55	1.17E+03		-5.46E+03	5.79E+02
	PM-146	146.20	0.22	2.96E+03	8.55E+00	-7.26E+03	1.48E+03
		453.88	66.00	8.55E+00		-3.71E+00	4.26E+00
		589.80	0.43	1.24E+03		-1.91E+03	6.15E+02
		633.25	1.12	4.49E+02		2.18E+02	2.23E+02
		735.93	22.80	2.32E+01		-6.29E+00	1.15E+01
		747.24	17.71	3.13E+01		-5.81E+00	1.56E+01
	ND-147	91.11	27.90	4.71E+02	4.71E+02	-3.32E+03	2.35E+02
		319.41	1.95	8.87E+03		-1.13E+04	4.42E+03
		398.15	0.87	2.18E+04		-6.34E+04	1.08E+04
		439.89	1.20	1.47E+04		-2.01E+04	7.31E+03
		531.02	13.09	1.32E+03		-6.23E+02	6.56E+02
	EU-152	121.78	28.42	1.82E+01	1.82E+01	7.82E+00	9.09E+00
		244.70	7.49	1.11E+02		-2.06E+02	5.56E+01
		295.94	0.44	2.80E+03		1.04E+05	1.40E+03
		344.28	26.58	2.12E+01		-1.95E+02	1.05E+01

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	EU-152	411.12		2.23	2.73E+02	1.82E+01	-1.87E+02	1.36E+02
		443.98		3.09	1.82E+02		-1.12E+02	9.04E+01
		688.67		0.83	6.05E+02		-1.65E+02	3.01E+02
		778.90		12.96	4.28E+01		-4.42E+02	2.13E+01
		867.39		4.15	1.60E+02		-2.60E+01	7.94E+01
		964.13		14.50	4.75E+01		6.23E+01	2.36E+01
		1005.28		0.65	9.92E+02		2.92E+02	4.93E+02
		1085.87		10.16	6.24E+01		-2.38E+00	3.10E+01
		1089.70		1.71	3.72E+02		-3.48E+01	1.85E+02
		1112.12		13.54	4.87E+01		-1.73E+03	2.42E+01
		1212.95		1.40	4.93E+02		-6.23E+02	2.45E+02
		1299.12		1.63	3.77E+02		5.04E+01	1.87E+02
		1408.01		20.87	5.35E+01		-4.35E+01	2.66E+01
+	GD-153	69.67		2.54	2.18E+02	1.20E+01	-5.10E+02	1.09E+02
		97.43	*	30.20	1.20E+01		-2.21E+00	5.97E+00
		103.18		21.44	2.12E+01		-1.25E+01	1.06E+01
	EU-154	123.07		40.78	1.28E+01	1.28E+01	5.41E+00	6.40E+00
		247.93		6.95	7.99E+01		-9.35E+02	3.98E+01
		444.49		0.56	1.00E+03		-5.76E+02	5.00E+02
		582.10		0.89	6.48E+02		9.37E+02	3.22E+02
		591.76		4.99	1.07E+02		-6.96E+01	5.33E+01
		692.42		1.80	2.74E+02		-2.78E+02	1.36E+02
		723.30		20.22	2.80E+01		-7.43E+00	1.39E+01
		756.80		4.57	1.23E+02		-1.20E+02	6.09E+01
		815.53		0.52	1.12E+03		-5.27E+03	5.57E+02
		845.39		0.59	1.06E+03		-2.07E+03	5.28E+02
		873.19		12.27	5.55E+01		2.50E+01	2.76E+01
		892.78		0.52	1.36E+03		5.78E+02	6.76E+02
		904.08		0.90	8.02E+02		2.36E+02	3.99E+02
		996.26		10.59	6.16E+01		3.36E+01	3.06E+01
		1004.72		18.00	3.59E+01		5.06E+00	1.78E+01
		1246.15		0.87	8.52E+02		-1.97E+04	4.23E+02
		1274.44		35.19	1.84E+01		-6.90E+01	9.13E+00
		1494.05		0.70	1.13E+03		-3.18E+01	5.58E+02
		1596.49		1.80	4.20E+02		-1.29E+02	2.08E+02
	EU-155	45.30		1.32	3.57E+02	1.26E+01	6.77E+02	1.78E+02
		60.01		1.13	3.48E+02		-3.32E+02	1.73E+02
		86.54	*	30.70	1.26E+01		4.10E+01	6.27E+00
		105.31		21.15	1.89E+01		-1.85E+01	9.43E+00
	W-187	72.00		11.10	2.19E+18	1.12E+18	-6.01E+18	1.09E+18
		134.25		8.80	3.77E+18		-4.23E+17	1.88E+18
		479.55		21.80	1.58E+18		-1.29E+18	7.85E+17
		618.26		6.28	4.80E+18		-1.13E+21	2.39E+18
		625.52		1.09	2.67E+19		-2.81E+19	1.32E+19
		685.73		27.30	1.12E+18		-2.80E+16	5.58E+17
		772.89		4.12	1.46E+19		-8.49E+19	7.26E+18
	IR-192	295.96		28.66	7.17E+01	1.11E+01	2.67E+03	3.58E+01
		308.46		30.00	3.02E+01		-4.10E+01	1.51E+01
		316.51		82.81	1.11E+01		-6.40E+00	5.54E+00
		468.07		47.83	1.85E+01		-1.73E+01	9.19E+00
		588.58		4.51	1.95E+02		-2.33E+02	9.71E+01
		604.41		8.23	2.39E+02		-1.42E+04	1.19E+02
		612.47		5.31	7.42E+02		-1.53E+04	3.71E+02

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TL-201	135.34		2.56	6.20E+07	1.68E+07	-1.90E+06	3.10E+07
		167.43		10.00	1.68E+07		-8.44E+06	8.40E+06
	HG-203	279.20		81.46	1.58E+01	1.58E+01	-2.17E+02	7.90E+00
	TL-208	277.36		6.31	9.25E+01	6.75E+00	-1.88E+03	4.61E+01
		510.77		22.60	2.75E+01		1.44E+02	1.37E+01
		583.19		84.50	6.75E+00		-1.71E+00	3.36E+00
		763.13		1.81	3.60E+02		-2.56E+02	1.79E+02
		860.56		12.42	5.18E+01		-1.76E+00	2.57E+01
+	PB-210	46.54	*	4.25	9.98E+01	9.98E+01	1.78E+02	4.97E+01
	BI-211	351.06		12.91	1.37E+02	1.37E+02	8.00E+03	6.86E+01
+	PB-211	404.85	*	3.78	1.15E+02	1.15E+02	8.08E+02	5.70E+01
		427.09	*	1.76	2.78E+02		7.95E+02	1.38E+02
		704.64		0.46	1.28E+03		3.76E+03	6.35E+02
		766.51		0.62	1.63E+03		-5.02E+01	8.12E+02
		832.01	*	3.52	1.23E+02		3.19E+01	6.12E+01
	BI-212	727.33		6.58	7.88E+01	7.88E+01	-6.69E+01	3.91E+01
		785.37		1.10	6.25E+02		2.81E+03	3.11E+02
		1078.62		0.56	1.08E+03		-5.80E+02	5.36E+02
		1620.50		1.49	3.93E+02		1.51E+01	1.94E+02
	PB-212	115.18		0.59	7.02E+02	1.73E+01	1.14E+02	3.50E+02
		238.63		43.30	1.73E+01		5.63E+01	8.65E+00
		300.09		3.28	2.04E+02		-9.11E+03	1.02E+02
+	BI-214	609.31	*	44.80	9.76E+00	9.76E+00	2.73E+03	4.84E+00
		665.45	*	1.29	2.86E+02		3.03E+03	1.42E+02
		768.36	*	4.80	1.19E+02		2.94E+03	5.90E+01
		806.17	*	1.22	3.55E+02		2.78E+03	1.76E+02
		934.06	*	3.03	2.04E+02		2.79E+03	1.02E+02
		1120.29	*	14.80	3.78E+01		2.83E+03	1.87E+01
		1155.19	*	1.64	2.96E+02		2.84E+03	1.47E+02
		1207.68	*	0.49	8.68E+02		2.34E+03	4.29E+02
		1238.11	*	5.86	8.61E+01		2.80E+03	4.26E+01
		1280.96	*	1.44	3.51E+02		2.78E+03	1.74E+02
		1377.67	*	3.92	1.15E+02		2.94E+03	5.65E+01
		1385.31	*	0.89	5.16E+02		2.54E+03	2.55E+02
		1401.50	*	1.55	2.79E+02		2.34E+03	1.37E+02
		1407.98	*	2.80	1.57E+02		2.45E+03	7.74E+01
		1415.80		0.48	1.47E+03		-1.28E+04	7.30E+02
		1509.23	*	2.12	2.53E+02		2.85E+03	1.25E+02
		1583.22	*	0.70	6.08E+02		2.46E+03	2.99E+02
		1661.28	*	1.14	3.33E+02		2.63E+03	1.64E+02
		1729.59	*	2.88	1.28E+02		2.84E+03	6.27E+01
		1764.49	*	15.36	2.90E+01		2.88E+03	1.43E+01
		1847.42	*	2.04	2.13E+02		2.61E+03	1.05E+02
+	PB-214	53.23		1.11	3.59E+02	1.67E+01	-1.06E+02	1.79E+02
		241.98	*	7.50	8.26E+01		1.68E+03	4.12E+01
		258.79	*	0.55	7.78E+02		2.05E+03	3.88E+02
		295.21	*	18.50	2.20E+01		2.63E+03	1.10E+01
		351.92	*	35.80	1.67E+01		2.89E+03	8.32E+00
		785.91	*	0.85	7.36E+02		3.60E+03	3.66E+02
		839.03	*	0.63	8.04E+02		-1.96E+01	3.99E+02
+	RN-219	130.59		0.12	4.45E+03	3.93E+01	-2.09E+03	2.22E+03
		271.23	*	10.80	3.93E+01		6.12E+02	1.96E+01
		401.81	*	6.37	6.77E+01		6.76E+02	3.37E+01

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	RN-220	549.73		0.11	4.76E+03	4.76E+03	-7.42E+02	2.37E+03
+	RA-223	122.32		1.19	4.32E+02	3.08E+01	1.51E+02	2.16E+02
		144.23	*	3.22	1.70E+02		1.41E+03	8.50E+01
		154.21	*	5.62	8.02E+01		5.75E+02	4.00E+01
		158.63	*	0.69	7.24E+02		-1.90E+03	3.61E+02
		179.54		0.15	3.91E+03		-1.94E+04	1.95E+03
		269.46	*	13.70	3.08E+01		6.05E+02	1.53E+01
		288.18		0.16	3.66E+03		-2.20E+05	1.83E+03
		323.87	*	3.93	9.73E+01		3.03E+02	4.84E+01
		328.40		0.21	2.94E+03		8.37E+03	1.47E+03
		338.28	*	2.79	1.50E+02		1.93E+02	7.44E+01
		342.90		0.22	2.58E+03		-2.33E+04	1.29E+03
		346.80		0.18	3.16E+03		-2.04E+04	1.58E+03
		371.68		0.48	1.09E+03		4.95E+02	5.44E+02
	RA-224	240.99		3.97	2.12E+02	2.12E+02	3.47E+03	1.06E+02
	RA-226	186.10	*	3.50	2.02E+02	2.02E+02	3.01E+03	1.01E+02
+	TH-227	50.13	*	8.00	3.81E+01	3.81E+01	-2.41E+01	1.90E+01
		79.72		1.89	2.55E+02		-5.90E+02	1.27E+02
		93.93	*	1.37	2.34E+02		-8.82E+02	1.17E+02
		210.65	*	1.10	4.77E+02		1.95E+02	2.38E+02
		235.97	*	12.70	5.93E+01		-4.24E+02	2.96E+01
		256.25	*	7.01	6.14E+01		5.73E+02	3.06E+01
		286.12	*	1.54	8.59E+02		-3.14E+04	4.29E+02
		300.00	*	2.67	1.59E+02		1.02E+03	7.92E+01
		304.51		1.23	4.97E+02		-1.62E+04	2.48E+02
		329.85	*	2.69	1.64E+02		2.50E+02	8.17E+01
		334.38	*	1.05	3.83E+02		1.11E+02	1.91E+02
	AC-228	99.50		1.28	3.13E+02	2.63E+01	-1.56E+02	1.56E+02
		129.07		2.45	2.17E+02		-7.56E+01	1.08E+02
		153.98		0.74	8.62E+02		-6.96E+02	4.30E+02
		209.25		3.88	1.52E+02		-3.26E+01	7.57E+01
		270.24		3.43	2.40E+02		4.34E+03	1.20E+02
		327.90		3.06	2.08E+02		1.07E+03	1.04E+02
		332.37		0.40	1.55E+03		1.23E+03	7.74E+02
		338.32		11.25	5.31E+01		-8.55E+00	2.65E+01
		409.46		1.94	3.41E+02		-1.39E+02	1.70E+02
		463.01		4.44	1.22E+02		-5.17E+01	6.08E+01
		508.96		0.47	1.31E+03		6.35E+03	6.54E+02
		562.50		0.87	6.12E+02		2.46E+02	3.04E+02
		755.32		1.00	5.54E+02		-3.04E+02	2.75E+02
		772.29		1.50	6.71E+02		-3.07E+03	3.34E+02
		782.14		0.50	1.33E+03		-7.81E+01	6.62E+02
		794.95		4.34	1.30E+02		-8.53E+01	6.47E+01
		830.49		0.55	1.29E+03		1.53E+03	6.39E+02
		835.71		1.68	4.49E+02		2.04E+03	2.23E+02
		840.38		0.94	7.09E+02		-1.11E+03	3.53E+02
		904.20		0.78	9.14E+02		2.69E+02	4.54E+02
		911.21		26.60	2.63E+01		1.49E+01	1.31E+01
		964.77		5.11	1.34E+02		2.02E+02	6.67E+01
		968.97		16.20	4.24E+01		-3.06E+01	2.11E+01
		1247.08		0.50	1.26E+03		-3.64E+04	6.24E+02
		1459.14		0.80	8.58E+02		2.39E+02	4.25E+02
		1495.91		0.89	8.79E+02		1.93E+01	4.36E+02

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	AC-228	1580.54		0.61	1.26E+03	2.63E+01	2.84E+03	6.27E+02
		1588.21		3.27	2.41E+02		-2.64E+02	1.20E+02
		1630.63		1.60	3.47E+02		-3.54E+01	1.71E+02
+	TH-228	84.37	*	1.23	2.89E+02	2.89E+02	1.83E+03	1.44E+02
		215.99		0.26	2.17E+03		-1.59E+03	1.08E+03
	TH-229	75.09		0.61	8.81E+02	1.25E+02	9.15E+03	4.40E+02
		86.35		3.90	1.25E+02		8.34E+02	6.24E+01
		124.60		1.43	3.65E+02		2.11E+02	1.82E+02
		136.99		1.18	4.71E+02		-2.12E+03	2.35E+02
		148.15		0.88	6.69E+02		-3.87E+03	3.34E+02
		154.34		0.77	8.29E+02		-4.73E+02	4.14E+02
		156.41		1.19	5.40E+02		3.17E+03	2.69E+02
		193.51		4.41	1.36E+02		-1.09E+03	6.77E+01
		204.69		0.60	9.89E+02		4.07E+01	4.93E+02
		210.85		2.77	2.11E+02		-6.88E+01	1.05E+02
+	PA-231	283.69		1.70	3.56E+02	1.73E+02	1.05E+03	1.77E+02
		300.07	*	2.46	1.73E+02		1.10E+03	8.60E+01
		302.65	*	2.20	1.91E+02		6.99E+02	9.52E+01
		330.06	*	1.40	3.15E+02		4.81E+02	1.57E+02
+	TH-231	81.23	*	0.89	4.06E+02	5.39E+01	8.56E+02	2.03E+02
		84.21	*	6.60	5.39E+01		3.40E+02	2.69E+01
		89.95	*	0.94	3.97E+02		1.77E+02	1.98E+02
	TH-232	63.81		0.27	1.46E+03	1.46E+03	-5.06E+03	7.27E+02
	U-232	57.78		0.20	1.92E+03	1.92E+03	-2.35E+03	9.59E+02
		129.08		0.07	7.71E+03		-2.69E+03	3.85E+03
	PA-233	75.35		1.39	3.86E+02	1.42E+01	4.01E+03	1.93E+02
		86.81		1.97	2.36E+02		5.74E+02	1.18E+02
		103.97		0.87	4.48E+02		-3.39E+02	2.24E+02
		271.48		0.33	2.53E+03		4.83E+04	1.26E+03
		300.34		6.62	1.01E+02		-4.51E+03	5.05E+01
		312.17		38.60	1.42E+01		-1.14E+01	7.08E+00
		340.81		4.47	1.34E+02		-5.23E+01	6.66E+01
		375.45		0.68	7.74E+02		1.95E+02	3.86E+02
		398.62		1.39	4.48E+02		-9.86E+02	2.23E+02
		415.76		1.75	3.47E+02		-2.13E+02	1.73E+02
+	U-233	42.44		0.09	5.36E+03	5.36E+03	-1.99E+04	2.67E+03
		54.70		0.02	2.19E+04		-7.13E+03	1.09E+04
		97.13	*	0.02	1.55E+04		-2.85E+03	7.70E+03
	PA-234	62.70		1.55	2.53E+02	2.98E+01	-1.25E+03	1.26E+02
		99.86		3.19	1.25E+02		-1.13E+02	6.23E+01
		125.46		0.78	6.71E+02		3.53E+02	3.35E+02
		131.30		18.00	2.98E+01		-4.81E+00	1.49E+01
		140.50		0.81	7.02E+02		-1.42E+03	3.50E+02
		152.71		5.97	1.07E+02		-2.02E+02	5.32E+01
		159.48	*	0.65	7.69E+02		-2.02E+03	3.84E+02
		170.85		0.50	1.16E+03		-1.22E+02	5.81E+02
		186.15	*	1.76	4.01E+02		5.99E+03	2.00E+02
		193.73		0.49	1.22E+03		-1.04E+04	6.10E+02
		200.97		0.90	6.61E+02		-1.25E+02	3.30E+02
		203.12		1.23	4.85E+02		6.93E+01	2.42E+02
		227.00		9.99	5.67E+01		-1.95E+01	2.83E+01
		245.37		0.75	1.04E+03		-3.08E+03	5.19E+02
		249.22		2.47	2.22E+02		-4.33E+03	1.11E+02

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PA-234	272.28	*	1.08	3.93E+02	2.98E+01	6.12E+03	1.96E+02
	293.79		2.99	4.08E+02		-1.64E+03	2.04E+02
	330.40	*	0.77	5.73E+02		8.74E+02	2.85E+02
	369.50		2.47	2.13E+02		1.60E+02	1.06E+02
	372.00		1.21	4.34E+02		2.31E+02	2.16E+02
	458.68		1.13	4.99E+02		-2.05E+02	2.49E+02
	506.75		1.29	4.45E+02		-7.66E+01	2.21E+02
	513.40		1.10	5.66E+02		-5.85E+02	2.82E+02
	521.40		0.74	6.97E+02		-1.94E+03	3.46E+02
	565.20		1.03	5.16E+02		-2.05E+02	2.57E+02
	569.32		11.80	4.59E+01		1.55E+01	2.28E+01
	602.60		0.54	1.01E+03		-1.71E+05	5.02E+02
	663.90		0.54	1.20E+03		-2.59E+03	5.96E+02
	666.50	*	1.16	3.18E+02		3.37E+03	1.57E+02
	669.70		0.99	6.54E+02		-2.05E+03	3.25E+02
	692.60		1.24	3.93E+02		-3.99E+02	1.95E+02
	699.03		3.61	1.49E+02		-2.90E+02	7.42E+01
	705.90		2.27	2.60E+02		-2.10E+02	1.29E+02
	730.90		0.63	8.30E+02		1.46E+02	4.12E+02
	733.39		6.90	7.54E+01		-1.68E+01	3.75E+01
	738.00		1.15	4.67E+02		1.20E+01	2.32E+02
	742.81	*	2.06	3.05E+02		2.03E+02	1.51E+02
	755.00		1.22	4.54E+02		1.00E+02	2.25E+02
	780.40		0.90	6.35E+02		-2.29E+02	3.15E+02
	786.27	*	1.19	5.26E+02		2.57E+03	2.61E+02
	794.90		1.34	4.22E+02		-2.76E+02	2.09E+02
	796.10		2.58	2.20E+02		-3.64E+02	1.09E+02
	805.52		3.14	2.28E+02		-3.63E+02	1.13E+02
	819.20		1.88	3.16E+02		-6.30E+01	1.57E+02
	824.65		3.12	1.98E+02		-5.83E+02	9.81E+01
	831.50	*	4.12	1.05E+02		2.72E+01	5.22E+01
	876.00		2.52	2.67E+02		1.32E+02	1.33E+02
	880.50		10.40	6.42E+01		-2.45E+01	3.19E+01
	883.24		9.58	7.00E+01		-3.53E+01	3.48E+01
	898.67		3.24	2.19E+02		4.05E+01	1.09E+02
	926.00		16.80	3.85E+01		-5.49E+02	1.91E+01
	946.18		15.00	4.25E+01		8.49E-01	2.11E+01
	980.48		5.15	1.22E+02		-3.74E+01	6.06E+01
	984.20		1.62	3.85E+02		-1.24E+02	1.91E+02
	1028.70		0.57	1.07E+03		-7.92E-01	5.32E+02
	1083.20		0.50	1.27E+03		3.41E+02	6.28E+02
	1352.90		1.15	5.24E+02		-3.96E+02	2.59E+02
	1393.90		2.06	3.03E+02		-2.25E+03	1.50E+02
	1668.40		0.76	9.03E+02		-2.25E+03	4.47E+02
	1693.80	*	0.69	5.81E+02		3.73E+02	2.86E+02
PA-234M	766.36		0.29	3.44E+03	7.69E+02	-1.06E+02	1.71E+03
	811.00		0.51	1.40E+03		-3.53E+03	6.97E+02
	1001.03		0.84	7.69E+02		2.70E+02	3.82E+02
TH-234	63.29		4.84	8.12E+01	7.37E+01	-3.36E+02	4.05E+01
	83.30		0.08	6.28E+03		1.15E+04	3.13E+03
	92.59		5.58	7.37E+01		-2.04E+02	3.67E+01
	112.81		0.28	1.48E+03		1.78E+03	7.37E+02
U-234	53.20		0.12	3.24E+03	3.24E+03	-9.54E+02	1.62E+03

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	U-234	120.90		0.03	1.51E+04	3.24E+03	4.03E+03	7.51E+03
+	U-235	109.16		1.54	2.60E+02	1.23E+01	-3.88E+01	1.30E+02
		143.76	*	10.96	5.01E+01		4.13E+02	2.50E+01
		163.36		5.08	1.16E+02		-3.32E+01	5.78E+01
		185.71	*	57.20	1.23E+01		1.84E+02	6.15E+00
		194.94		0.63	9.52E+02		-4.95E+03	4.75E+02
		202.11		1.08	5.51E+02		1.53E+02	2.75E+02
		205.31		5.01	1.18E+02		-1.13E+01	5.89E+01
+	NP-237	57.10		0.39	9.89E+02	3.04E+01	-1.30E+03	4.93E+02
		86.48	*	12.40	3.04E+01		9.93E+01	1.52E+01
		94.64	*	0.60	5.35E+02		-2.01E+03	2.66E+02
		143.25	*	0.43	1.28E+03		1.05E+04	6.37E+02
	NP-239	106.12		27.20	1.59E+08	1.59E+08	-1.71E+08	7.94E+07
		209.75		3.42	1.90E+09		-7.06E+08	9.47E+08
		228.18		10.76	5.82E+08		-3.37E+09	2.90E+08
		277.60		14.38	4.47E+08		-9.20E+09	2.23E+08
		334.31		2.07	3.13E+09		-4.77E+09	1.56E+09
	AM-241	59.54		35.90	1.07E+01	1.07E+01	-1.01E+01	5.34E+00
	CM-241	132.41		3.90	4.44E+02	2.39E+01	5.75E+01	2.22E+02
		165.01		3.40	5.53E+02		-2.80E+02	2.76E+02
		205.88		2.67	7.09E+02		-6.22E+01	3.54E+02
		430.63		4.06	4.86E+02		-1.45E+02	2.42E+02
		463.27		1.23	1.41E+03		-5.99E+02	7.04E+02
		471.80		71.30	2.39E+01		-4.83E+00	1.19E+01
		636.88		1.53	1.03E+03		5.04E+02	5.13E+02
+	AM-243	74.66	*	68.20	5.51E+00	5.51E+00	2.82E+01	2.75E+00

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

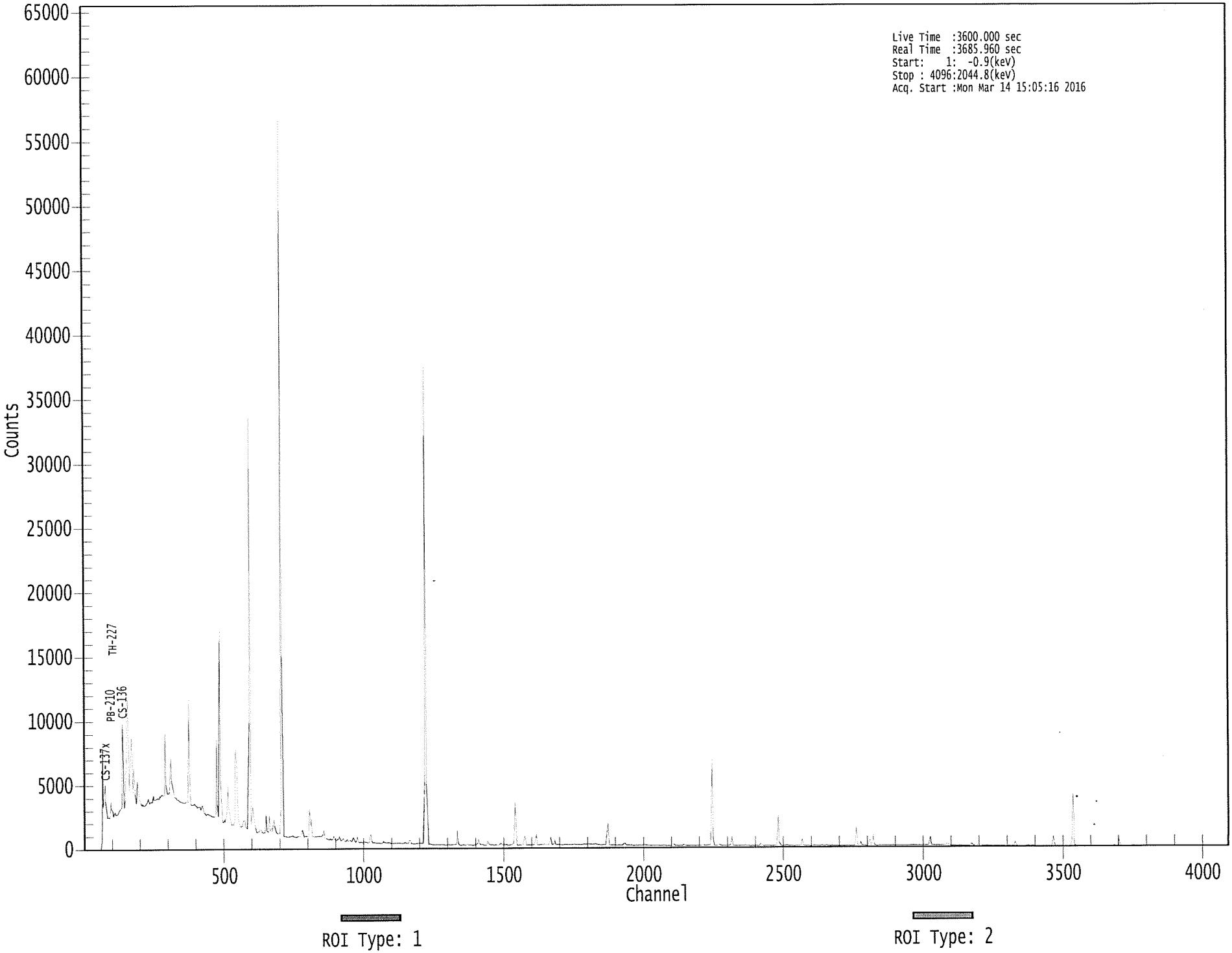
Creation Date	Comment	User

No Data Review Comments Entered.

Analysis Report for 588049R2

Tetra Tech TO# 160115-1

0000007047.CNF



011540

Apex™

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 588556R2
Sample Description	: Tetra Tech TO# 160115-1
Sample Type	: Soil
Sample Size	: 2.084E+02 grams
Facility	: Default
Sample Taken On	: 1/19/2016 12:35:00PM
Acquisition Started	: 3/14/2016 4:12:12PM
Procedure	: Raised 300g can soil
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3639.9 seconds
Dead Time	: 1.10 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7049

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

ENERGY CALIBRATION REPORT

Detector Name : DET01

ENERGY CALIBRATION COEFFICIENTS

Energy Calibrate Performed on : 11/30/2015 7:51:04PM
by : Administrator
Energy Calibrate Type : POLY

Energy (keV) = -1.445 + 0.500*ch + -1.06E-07*ch^2 + 0.00E+00*ch^3

SHAPE CALIBRATION COEFFICIENTS

Shape Calibrate Performed on : 11/30/2015 7:51:04PM
by : Administrator

FWHM = 0.610 + 3.62E-02 *E^1/2

LOW TAIL = 0.00E+00 + 0.00E+00*E

ENERGY CALIBRATION RESULTS TABLE

Centroid Channel	Centroid error	Energy (keV)
121.97	0.13	59.54
1326.58	0.01	661.66
2669.40	0.03	1332.50

SHAPE CALIBRATION RESULTS TABLE

Energy (keV)	FWHM channels	FWHM error	TAIL channels	TAIL error
59.54	2.12	0.24	0.00	0.00
661.66	3.08	0.02	0.00	0.00
1332.50	3.90	0.06	0.00	0.00

EFFICIENCY CALIBRATION REPORT

Detector Name : DET01
Geometry Description : Raised 300gm Can Soil
Efficiency Calibration Performed on : 12/20/2005 11:10:05AM
by : Administrator
Efficiency Type Used : EMPIRICAL

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

Efficiency Triplets

Energy	*% Efficiency*	*Error*	*Computed*	*Error*	*% Difference*
59.50	6.77E-01	2.04E-02			
88.00	6.93E-01	2.10E-02			
122.10	7.30E-01	2.28E-02			
165.90	6.33E-01	3.05E-02			
391.70	3.38E-01	1.74E-02			
661.70	2.30E-01	6.91E-03			
898.00	1.91E-01	8.56E-03			
1173.20	1.46E-01	4.40E-03			
1332.50	1.33E-01	3.99E-03			
1836.00	1.03E-01	3.36E-03			

DUAL Efficiency Calibration Equation

Single Equation Terms

Offset :	-3.20E+01
Slope :	1.70E+01
Quadratic :	-3.77E+00
Cubic :	3.53E-01
4th Order :	-1.23E-02
5th Order :	0.00E+00
6th Order :	0.00E+00
7th Order :	0.00E+00
8th Order :	0.00E+00
9th Order :	0.00E+00

EMPIRICAL Efficiency Calibration Equation

Empirical Equation Terms

Scaling :	9.48E+02
Offset :	-6.35E+00
Slope :	8.02E-01
Quadratic :	2.35E-02
Cubic :	-1.58E-02
4th Order :	-1.23E-02
5th Order :	0.00E+00

LINEAR Efficiency Calibration Equation

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

Linear Equation Terms

Offset :	-1.79E-04
Slope :	-2.75E+00
Quadratic :	1.74E+02
Cubic :	-1.42E+04
4th Order :	2.49E+05
5th Order :	6.29E+06
6th Order :	0.00E+00
7th Order :	0.00E+00
8th Order :	0.00E+00
9th Order :	0.00E+00

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

PEAK LOCATE REPORT

Peak Locate Performed on : 3/30/2016 1:50:42PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 4.30

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	32.19	67.26	0.1809	22.47
2	36.39	75.68	0.2403	11.76
3	46.66	96.21	0.2683	11.04
4	50.28	103.37	0.3091	6.56
5	53.29	109.38	0.3518	5.02
6	67.76	138.42	0.1205	40.05
7	74.90	152.61	0.1448	29.14
8	77.16	157.33	0.1216	45.34
9	81.14	165.31	0.1724	23.22
10	83.88	170.58	0.1317	33.27
11	87.37	177.52	0.1912	14.29
12	89.98	183.11	0.3138	9.08
13	94.77	192.44	0.2054	11.69
14	122.39	247.69	0.2812	8.78
15	144.13	291.17	0.1439	28.24
16	154.30	311.51	0.1548	21.19
17	158.68	320.27	0.3692	4.79
18	186.29	375.51	0.1111	41.29
19	210.80	424.52	0.3126	5.37
20	236.15	475.23	0.1131	43.03
21	242.15	487.24	0.0894	66.53
22	254.06	510.59	0.3364	5.23
23	256.38	515.67	0.1422	27.70
24	259.05	521.23	0.2484	10.97

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
25	269.64	542.10	0.1300	37.15
26	271.41	546.03	0.1648	28.74
27	274.78	552.78	0.2912	6.46
28	283.77	570.51	0.2481	8.23
29	295.39	593.74	0.0694	106.50
30	300.19	603.33	0.1546	21.31
31	302.92	608.65	0.2221	11.21
32	324.05	651.09	0.1603	20.43
33	330.02	663.03	0.1619	19.66
34	352.07	707.14	0.0562	148.91
35	387.09	776.85	0.3794	4.71
36	389.10	781.38	0.2850	7.29
37	402.08	807.17	0.1338	27.71
38	405.17	813.37	0.1717	17.44
39	427.35	857.74	0.2289	9.77
40	445.29	893.63	0.2446	8.09
41	455.15	913.37	0.2615	5.93
42	480.61	964.32	0.2448	8.52
43	487.46	978.01	0.2379	8.44
44	511.18	1025.46	0.2306	6.10
45	533.98	1071.10	0.3246	4.73
46	580.42	1164.02	0.2340	8.57
47	609.65	1222.51	0.0550	131.24
48	665.83	1334.94	0.1403	21.81
49	703.47	1410.26	0.2277	7.85
50	720.28	1443.89	0.2482	6.57
51	768.82	1541.03	0.1035	39.40
52	786.33	1576.07	0.1645	14.95
53	806.64	1616.72	0.1439	18.94
54	821.67	1646.80	0.2906	5.49
55	832.46	1668.39	0.1642	13.70
56	839.40	1682.29	0.1997	10.37
57	934.58	1872.80	0.1165	27.98
58	964.76	1933.21	0.2461	6.12
59	1052.52	2108.87	0.2692	5.41
60	1070.48	2144.83	0.2709	4.40
61	1120.92	2245.80	0.0768	61.95
62	1134.15	2272.29	0.2550	5.56
63	1155.85	2315.74	0.1397	18.84
64	1208.42	2420.98	0.2128	7.55
65	1238.80	2481.81	0.0970	37.11
66	1254.23	2512.69	0.2527	4.53
67	1281.70	2567.68	0.1422	17.43
68	1378.38	2761.35	0.1086	28.04
69	1386.00	2776.54	0.1769	10.26
70	1402.27	2809.11	0.1443	16.60
71	1408.71	2822.10	0.1254	21.27
72	1509.97	3024.77	0.1329	18.87
73	1539.41	3083.72	0.2468	5.84
74	1583.93	3172.88	0.1825	8.65
75	1595.53	3196.00	0.2506	5.38
76	1600.16	3205.51	0.2221	6.81
77	1662.13	3329.51	0.1556	12.67
78	1684.69	3374.69	0.2323	6.49
79	1730.39	3466.23	0.1153	23.13

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
80	1765.31	3536.15	0.0762	51.46
81	1839.00	3683.77	0.2141	6.52
82	1848.19	3702.17	0.1285	17.69
83	1874.14	3754.17	0.2325	6.59

? = Adjacent peak noted
Errors quoted at 1.000 sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 3/30/2016 1:50:42PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	32.19	62 -	71	67.26	9.72E+03	149.29	8.38E+03	1.34
	2	36.39	72 -	82	75.68	1.33E+03	164.39	1.66E+04	1.06
	3	46.66	92 -	99	96.21	1.68E+03	127.65	1.04E+04	0.99
M	4	50.28	100 -	113	103.46	-3.89E+02	119.80	4.38E+03	0.34
m	5	53.29	100 -	113	109.47	-2.16E+02	67.91	4.38E+03	0.35
	6	67.76	131 -	143	138.42	9.86E+03	242.87	2.98E+04	1.07
M	7	74.90	145 -	186	152.70	3.38E+03	109.08	1.92E+04	0.81
m	8	77.16	145 -	186	157.22	7.27E+03	228.08	1.86E+04	0.82
m	9	81.14	145 -	186	165.19	1.91E+03	65.87	1.74E+04	0.83
m	10	83.88	145 -	186	170.66	5.25E+03	165.70	1.64E+04	0.83
m	11	87.37	145 -	186	177.63	2.16E+03	72.80	1.54E+04	0.84
m	12	89.98	145 -	186	182.86	2.69E+02	28.49	1.46E+04	0.84
	13	94.77	187 -	205	192.44	-2.10E+03	283.37	4.23E+04	1.08
	14	122.39	242 -	252	247.69	8.35E+02	176.63	1.96E+04	0.89
	15	144.13	286 -	295	291.17	7.83E+03	195.21	2.02E+04	1.23
	16	154.30	303 -	317	311.51	5.30E+03	241.70	3.04E+04	1.21
	17	158.68	317 -	328	320.27	-2.38E+03	197.84	2.60E+04	0.50
	18	186.29	369 -	380	375.51	1.34E+04	209.56	1.91E+04	1.27
	19	210.80	420 -	433	424.52	2.17E+02	176.70	1.82E+04	1.04
	20	236.15	470 -	482	475.23	-2.81E+03	200.06	2.60E+04	0.96
	21	242.15	483 -	496	487.24	1.24E+04	216.75	2.03E+04	1.15
M	22	254.06	507 -	530	511.07	1.12E+03	69.02	7.22E+03	1.20
m	23	256.38	507 -	530	515.70	4.58E+03	96.78	7.05E+03	1.20
m	24	259.05	507 -	530	521.06	1.28E+03	69.49	6.88E+03	1.21
M	25	269.64	537 -	560	542.23	8.95E+03	116.92	6.28E+03	1.19
m	26	271.41	537 -	560	545.77	7.14E+03	107.30	6.22E+03	1.20
m	27	274.78	537 -	560	552.52	8.46E+02	62.15	6.90E+03	1.20
	28	283.77	561 -	585	570.51	-5.10E+04	327.13	7.02E+04	0.50
M	29	295.39	586 -	618	593.74	4.38E+04	220.91	5.39E+03	1.21
m	30	300.19	586 -	618	603.34	2.85E+03	76.39	5.60E+03	1.22
m	31	302.92	586 -	618	608.82	1.56E+03	65.43	4.74E+03	1.22
	32	324.05	641 -	656	651.09	-3.03E+02	137.40	1.07E+04	0.99
	33	330.02	656 -	695	663.03	-1.39E+04	321.08	3.90E+04	0.90
	34	352.07	696 -	714	707.14	8.09E+04	313.17	8.83E+03	1.38

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	35	387.09	767 -	787	777.19	5.13E+02	49.37	3.71E+03	1.32
m	36	389.10	767 -	787	781.23	7.80E+02	55.03	3.75E+03	1.32
M	37	402.08	802 -	821	807.20	3.15E+03	74.83	3.84E+03	1.29
m	38	405.17	802 -	821	813.38	2.11E+03	65.60	3.83E+03	1.29
	39	427.35	852 -	868	857.74	9.50E+02	113.03	6.39E+03	1.26
	40	445.29	886 -	900	893.63	4.73E+02	89.45	4.30E+03	1.29
	41	455.15	909 -	921	913.37	2.72E+02	79.41	3.66E+03	1.77
	42	480.61	962 -	971	964.32	5.35E+01	64.16	2.71E+03	1.11
	43	487.46	973 -	984	978.01	2.45E+02	69.77	2.89E+03	0.99
	44	511.18	1017 -	1036	1025.46	1.71E+03	95.42	3.70E+03	2.66
	45	533.98	1066 -	1075	1071.10	1.76E+02	54.06	1.83E+03	0.82
	46	580.42	1159 -	1167	1164.02	3.26E+02	50.50	1.53E+03	1.27
	47	609.65	1210 -	1230	1222.51	5.89E+04	256.03	3.23E+03	1.52
	48	665.83	1330 -	1341	1334.94	1.78E+03	62.40	1.32E+03	1.61
	49	703.47	1404 -	1417	1410.26	6.27E+02	59.93	1.74E+03	1.73
	50	720.28	1437 -	1453	1443.89	3.99E+02	62.22	1.88E+03	1.79
	51	768.82	1531 -	1549	1541.03	5.61E+03	96.98	1.95E+03	1.58
	52	786.33	1568 -	1584	1576.07	1.17E+03	66.83	1.78E+03	1.79
	53	806.64	1609 -	1624	1616.72	1.32E+03	66.20	1.70E+03	1.49
	54	821.67	1642 -	1651	1646.80	2.70E+01	41.41	1.13E+03	1.07
	55	832.46	1662 -	1674	1668.39	5.62E+02	59.53	1.81E+03	1.53
	56	839.40	1677 -	1687	1682.29	3.55E+00	51.43	1.70E+03	1.00
	57	934.58	1867 -	1878	1872.80	2.80E+03	68.56	1.19E+03	1.72
	58	964.76	1920 -	1937	1933.21	2.61E+02	58.68	1.67E+03	2.06
	59	1052.52	2099 -	2119	2108.87	2.89E+02	56.84	1.44E+03	1.84
	60	1070.48	2136 -	2150	2144.83	2.05E+02	43.54	9.66E+02	1.61
	61	1120.92	2235 -	2253	2245.80	1.22E+04	120.45	1.18E+03	1.79
	62	1134.15	2263 -	2281	2272.29	2.00E+02	50.25	1.19E+03	1.91
	63	1155.85	2310 -	2323	2315.74	1.28E+03	52.74	8.85E+02	1.71
	64	1208.42	2415 -	2431	2420.98	3.16E+02	44.53	9.01E+02	1.92
	65	1238.80	2473 -	2491	2481.81	4.51E+03	79.91	9.62E+02	1.84
	66	1254.23	2504 -	2518	2512.69	2.87E+02	39.27	7.17E+02	2.28
	67	1281.70	2558 -	2575	2567.68	1.07E+03	52.02	8.60E+02	1.77
M	68	1378.38	2751 -	2787	2761.28	2.77E+03	56.81	5.70E+02	1.97
m	69	1386.00	2751 -	2787	2776.52	5.90E+02	30.43	5.62E+02	1.97
M	70	1402.27	2803 -	2828	2809.11	8.90E+02	35.54	5.33E+02	1.91
m	71	1408.71	2803 -	2828	2822.00	1.55E+03	44.46	5.40E+02	1.91
	72	1509.97	3014 -	3033	3024.77	1.32E+03	59.15	1.09E+03	1.88
	73	1539.41	3072 -	3088	3083.72	1.28E+02	44.77	1.01E+03	1.23
	74	1583.93	3167 -	3180	3172.88	4.12E+02	34.73	4.67E+02	2.42
M	75	1595.53	3191 -	3213	3196.11	1.54E+02	19.49	3.69E+02	1.69
m	76	1600.16	3191 -	3213	3205.38	1.85E+02	20.51	3.64E+02	1.69
	77	1662.13	3324 -	3337	3329.51	6.12E+02	32.96	2.79E+02	2.10
	78	1684.69	3366 -	3380	3374.69	1.00E+02	23.15	2.49E+02	1.82
	79	1730.39	3458 -	3477	3466.23	1.73E+03	46.85	2.32E+02	2.07
	80	1765.31	3526 -	3546	3536.15	8.81E+03	96.57	2.52E+02	2.16
	81	1839.00	3675 -	3689	3683.77	1.14E+02	23.92	2.62E+02	1.62
	82	1848.19	3692 -	3709	3702.17	9.63E+02	41.17	3.85E+02	2.08
	83	1874.14	3750 -	3759	3754.17	7.55E+01	16.83	1.39E+02	1.50

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 3/30/2016 1:50:42PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	32.19	62 -	71	9.72E+03	149.29	8.38E+03	1.84E+02
	2	36.39	72 -	82	1.33E+03	164.39	1.66E+04	2.64E+02
	3	46.66	92 -	99	1.68E+03	127.65	1.04E+04	1.99E+02
M	4	50.28	100 -	113	-3.89E+02	119.80	4.38E+03	1.54E+02
m	5	53.29	100 -	113	-2.16E+02	67.91	4.38E+03	1.54E+02
	6	67.76	131 -	143	9.86E+03	242.87	2.98E+04	3.65E+02
M	7	74.90	145 -	186	3.38E+03	109.08	1.92E+04	3.22E+02
m	8	77.16	145 -	186	7.27E+03	228.08	1.86E+04	3.17E+02
m	9	81.14	145 -	186	1.91E+03	65.87	1.74E+04	3.07E+02
m	10	83.88	145 -	186	5.25E+03	165.70	1.64E+04	2.98E+02
m	11	87.37	145 -	186	2.16E+03	72.80	1.54E+04	2.88E+02
m	12	89.98	145 -	186	2.69E+02	28.49	1.46E+04	2.81E+02
	13	94.77	187 -	205	-2.10E+03	283.37	4.23E+04	4.72E+02
	14	122.39	242 -	252	8.35E+02	176.63	1.96E+04	2.87E+02
	15	144.13	286 -	295	7.83E+03	195.21	2.02E+04	2.86E+02
	16	154.30	303 -	317	5.30E+03	241.70	3.04E+04	3.79E+02
	17	158.68	317 -	328	-2.38E+03	197.84	2.60E+04	3.35E+02
	18	186.29	369 -	380	1.34E+04	209.56	1.91E+04	2.87E+02
	19	210.80	420 -	433	2.17E+02	176.70	1.82E+04	2.90E+02
	20	236.15	470 -	482	-2.81E+03	200.06	2.60E+04	3.40E+02
	21	242.15	483 -	496	1.24E+04	216.75	2.03E+04	3.06E+02
M	22	254.06	507 -	530	1.12E+03	69.02	7.22E+03	1.98E+02
m	23	256.38	507 -	530	4.58E+03	96.78	7.05E+03	1.95E+02
m	24	259.05	507 -	530	1.28E+03	69.49	6.88E+03	1.93E+02
M	25	269.64	537 -	560	8.95E+03	116.92	6.28E+03	1.84E+02
m	26	271.41	537 -	560	7.14E+03	107.30	6.22E+03	1.84E+02
m	27	274.78	537 -	560	8.46E+02	62.15	6.90E+03	1.93E+02
	28	283.77	561 -	585	-5.10E+04	327.13	7.02E+04	6.54E+02
M	29	295.39	586 -	618	4.38E+04	220.91	5.39E+03	1.71E+02
m	30	300.19	586 -	618	2.85E+03	76.39	5.60E+03	1.74E+02
m	31	302.92	586 -	618	1.56E+03	65.43	4.74E+03	1.60E+02
	32	324.05	641 -	656	-3.03E+02	137.40	1.07E+04	2.28E+02
	33	330.02	656 -	695	-1.39E+04	321.08	3.90E+04	5.63E+02
	34	352.07	696 -	714	8.09E+04	313.17	8.83E+03	2.16E+02
M	35	387.09	767 -	787	5.13E+02	49.37	3.71E+03	1.42E+02

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
m	36	389.10	767 -	787	7.80E+02	55.03	3.75E+03	1.43E+02
M	37	402.08	802 -	821	3.15E+03	74.83	3.84E+03	1.44E+02
m	38	405.17	802 -	821	2.11E+03	65.60	3.83E+03	1.44E+02
	39	427.35	852 -	868	9.50E+02	113.03	6.39E+03	1.79E+02
	40	445.29	886 -	900	4.73E+02	89.45	4.30E+03	1.43E+02
	41	455.15	909 -	921	2.72E+02	79.41	3.66E+03	1.28E+02
	42	480.61	962 -	971	5.35E+01	64.16	2.71E+03	1.05E+02
	43	487.46	973 -	984	2.45E+02	69.77	2.89E+03	1.12E+02
	44	511.18	1017 -	1036	1.71E+03	95.42	3.70E+03	1.41E+02
	45	533.98	1066 -	1075	1.76E+02	54.06	1.83E+03	8.62E+01
	46	580.42	1159 -	1167	3.26E+02	50.50	1.53E+03	7.76E+01
	47	609.65	1210 -	1230	5.89E+04	256.03	3.23E+03	1.34E+02
	48	665.83	1330 -	1341	1.78E+03	62.40	1.32E+03	7.56E+01
	49	703.47	1404 -	1417	6.27E+02	59.93	1.74E+03	8.96E+01
	50	720.28	1437 -	1453	3.99E+02	62.22	1.88E+03	9.69E+01
	51	768.82	1531 -	1549	5.61E+03	96.98	1.95E+03	1.01E+02
	52	786.33	1568 -	1584	1.17E+03	66.83	1.78E+03	9.44E+01
	53	806.64	1609 -	1624	1.32E+03	66.20	1.70E+03	9.10E+01
	54	821.67	1642 -	1651	2.70E+01	41.41	1.13E+03	6.76E+01
	55	832.46	1662 -	1674	5.62E+02	59.53	1.81E+03	8.98E+01
	56	839.40	1677 -	1687	3.55E+00	51.43	1.70E+03	8.46E+01
	57	934.58	1867 -	1878	2.80E+03	68.56	1.19E+03	7.18E+01
	58	964.76	1920 -	1937	2.61E+02	58.68	1.67E+03	9.28E+01
	59	1052.52	2099 -	2119	2.89E+02	56.84	1.44E+03	8.92E+01
	60	1070.48	2136 -	2150	2.05E+02	43.54	9.66E+02	6.76E+01
	61	1120.92	2235 -	2253	1.22E+04	120.45	1.18E+03	7.88E+01
	62	1134.15	2263 -	2281	2.00E+02	50.25	1.19E+03	7.93E+01
	63	1155.85	2310 -	2323	1.28E+03	52.74	8.85E+02	6.38E+01
	64	1208.42	2415 -	2431	3.16E+02	44.53	9.01E+02	6.72E+01
	65	1238.80	2473 -	2491	4.51E+03	79.91	9.62E+02	7.13E+01
	66	1254.23	2504 -	2518	2.87E+02	39.27	7.17E+02	5.83E+01
	67	1281.70	2558 -	2575	1.07E+03	52.02	8.60E+02	6.65E+01
M	68	1378.38	2751 -	2787	2.77E+03	56.81	5.70E+02	5.55E+01
m	69	1386.00	2751 -	2787	5.90E+02	30.43	5.62E+02	5.51E+01
M	70	1402.27	2803 -	2828	8.90E+02	35.54	5.33E+02	5.37E+01
m	71	1408.71	2803 -	2828	1.55E+03	44.46	5.40E+02	5.40E+01
	72	1509.97	3014 -	3033	1.32E+03	59.15	1.09E+03	7.69E+01
	73	1539.41	3072 -	3088	1.28E+02	44.77	1.01E+03	7.12E+01
	74	1583.93	3167 -	3180	4.12E+02	34.73	4.67E+02	4.63E+01
M	75	1595.53	3191 -	3213	1.54E+02	19.49	3.69E+02	4.47E+01
m	76	1600.16	3191 -	3213	1.85E+02	20.51	3.64E+02	4.44E+01
	77	1662.13	3324 -	3337	6.12E+02	32.96	2.79E+02	3.58E+01
	78	1684.69	3366 -	3380	1.00E+02	23.15	2.49E+02	3.43E+01
	79	1730.39	3458 -	3477	1.73E+03	46.85	2.32E+02	3.54E+01
	80	1765.31	3526 -	3546	8.81E+03	96.57	2.52E+02	3.74E+01
	81	1839.00	3675 -	3689	1.14E+02	23.92	2.62E+02	3.52E+01
	82	1848.19	3692 -	3709	9.63E+02	41.17	3.85E+02	4.45E+01
	83	1874.14	3750 -	3759	7.55E+01	16.83	1.39E+02	2.37E+01

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 3/30/2016 1:50:42PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB
Peak Match Tolerance : 1.000 keV

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	32.19	62 -	71	67.26	9.72E+03	149.29	8.38E+03	.....
	2	36.39	72 -	82	75.68	1.33E+03	164.39	1.66E+04	I-125
	3	46.66	92 -	99	96.21	1.68E+03	127.65	1.04E+04	PB-210
M	4	50.28	100 -	113	103.46	-3.89E+02	119.80	4.38E+03	TH-227
m	5	53.29	100 -	113	109.47	-2.16E+02	67.91	4.38E+03	PB-214
									U-234
									BA-133
	6	67.76	131 -	143	138.42	9.86E+03	242.87	2.98E+04	CS-136
M	7	74.90	145 -	186	152.70	3.38E+03	109.08	1.92E+04	TH-229
									AM-243
									PA-233
m	8	77.16	145 -	186	157.22	7.27E+03	228.08	1.86E+04	.....
m	9	81.14	145 -	186	165.19	1.91E+03	65.87	1.74E+04	TH-231
									BA-133
m	10	83.88	145 -	186	170.66	5.25E+03	165.70	1.64E+04	TH-231
									TH-228
									TH-234
m	11	87.37	145 -	186	177.63	2.16E+03	72.80	1.54E+04	PA-233
									CD-109
									EU-155
									NP-237
m	12	89.98	145 -	186	182.86	2.69E+02	28.49	1.46E+04	TH-231
	13	94.77	187 -	205	192.44	-2.10E+03	283.37	4.23E+04	NP-237
									TH-227
	14	122.39	242 -	252	247.69	8.35E+02	176.63	1.96E+04	RA-223
									CO-57
									EU-152
									EU-154
	15	144.13	286 -	295	291.17	7.83E+03	195.21	2.02E+04	RA-223
									U-235
									NP-237
	16	154.30	303 -	317	311.51	5.30E+03	241.70	3.04E+04	TH-229
									RA-223
									AC-228
	17	158.68	317 -	328	320.27	-2.38E+03	197.84	2.60E+04	RA-223

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
									PA-234
	18	186.29	369 -	380	375.51	1.34E+04	209.56	1.91E+04	PA-234
									RA-226
									U-235
	19	210.80	420 -	433	424.52	2.17E+02	176.70	1.82E+04	TH-229
									TH-227
	20	236.15	470 -	482	475.23	-2.81E+03	200.06	2.60E+04	TH-227
									NB-95m
	21	242.15	483 -	496	487.24	1.24E+04	216.75	2.03E+04	PB-214
M	22	254.06	507 -	530	511.07	1.12E+03	69.02	7.22E+03	SN-113
m	23	256.38	507 -	530	515.70	4.58E+03	96.78	7.05E+03	TH-227
m	24	259.05	507 -	530	521.06	1.28E+03	69.49	6.88E+03	PB-214
M	25	269.64	537 -	560	542.23	8.95E+03	116.92	6.28E+03	RA-223
									AC-228
m	26	271.41	537 -	560	545.77	7.14E+03	107.30	6.22E+03	PA-233
									RN-219
									PA-234
m	27	274.78	537 -	560	552.52	8.46E+02	62.15	6.90E+03	.....
	28	283.77	561 -	585	570.51	-5.10E+04	327.13	7.02E+04	PA-231
									I-131
M	29	295.39	586 -	618	593.74	4.38E+04	220.91	5.39E+03	PB-214
									EU-152
									IR-192
m	30	300.19	586 -	618	603.34	2.85E+03	76.39	5.60E+03	PB-212
									PA-231
									PA-233
									TH-227
m	31	302.92	586 -	618	608.82	1.56E+03	65.43	4.74E+03	BA-133
									PA-231
	32	324.05	641 -	656	651.09	-3.03E+02	137.40	1.07E+04	RA-223
	33	330.02	656 -	695	663.03	-1.39E+04	321.08	3.90E+04	PA-231
									TH-227
									PA-234
	34	352.07	696 -	714	707.14	8.09E+04	313.17	8.83E+03	PB-214
M	35	387.09	767 -	787	777.19	5.13E+02	49.37	3.71E+03	.....
m	36	389.10	767 -	787	781.23	7.80E+02	55.03	3.75E+03	I-126
M	37	402.08	802 -	821	807.20	3.15E+03	74.83	3.84E+03	RN-219
									KR-87
m	38	405.17	802 -	821	813.38	2.11E+03	65.60	3.83E+03	I-134
									PB-211
	39	427.35	852 -	868	857.74	9.50E+02	113.03	6.39E+03	PB-211
									SB-125
	40	445.29	886 -	900	893.63	4.73E+02	89.45	4.30E+03	EU-154
	41	455.15	909 -	921	913.37	2.72E+02	79.41	3.66E+03	.....
	42	480.61	962 -	971	964.32	5.35E+01	64.16	2.71E+03	.....
	43	487.46	973 -	984	978.01	2.45E+02	69.77	2.89E+03	LA-140
	44	511.18	1017 -	1036	1025.46	1.71E+03	95.42	3.70E+03	TL-208
	45	533.98	1066 -	1075	1071.10	1.76E+02	54.06	1.83E+03	.....
	46	580.42	1159 -	1167	1164.02	3.26E+02	50.50	1.53E+03	.....
	47	609.65	1210 -	1230	1222.51	5.89E+04	256.03	3.23E+03	BI-214
									RU-103
	48	665.83	1330 -	1341	1334.94	1.78E+03	62.40	1.32E+03	BI-214
									SB-126
									PA-234

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	49	703.47	1404 -	1417	1410.26	6.27E+02	59.93	1.74E+03	NB-94x
	50	720.28	1437 -	1453	1443.89	3.99E+02	62.22	1.88E+03	SB-126
	51	768.82	1531 -	1549	1541.03	5.61E+03	96.98	1.95E+03	BI-214
	52	786.33	1568 -	1584	1576.07	1.17E+03	66.83	1.78E+03	PA-234
									PB-214
									CS-135
									BI-212
	53	806.64	1609 -	1624	1616.72	1.32E+03	66.20	1.70E+03	BI-214
	54	821.67	1642 -	1651	1646.80	2.70E+01	41.41	1.13E+03	.....
	55	832.46	1662 -	1674	1668.39	5.62E+02	59.53	1.81E+03	PB-211
									PA-234
	56	839.40	1677 -	1687	1682.29	3.55E+00	51.43	1.70E+03	PB-214
									AC-228
	57	934.58	1867 -	1878	1872.80	2.80E+03	68.56	1.19E+03	BI-214
	58	964.76	1920 -	1937	1933.21	2.61E+02	58.68	1.67E+03	AC-228
									EU-152
	59	1052.52	2099 -	2119	2108.87	2.89E+02	56.84	1.44E+03	.....
	60	1070.48	2136 -	2150	2144.83	2.05E+02	43.54	9.66E+02	.....
	61	1120.92	2235 -	2253	2245.80	1.22E+04	120.45	1.18E+03	BI-214
	62	1134.15	2263 -	2281	2272.29	2.00E+02	50.25	1.19E+03	.....
	63	1155.85	2310 -	2323	2315.74	1.28E+03	52.74	8.85E+02	BI-214
	64	1208.42	2415 -	2431	2420.98	3.16E+02	44.53	9.01E+02	BI-214
	65	1238.80	2473 -	2491	2481.81	4.51E+03	79.91	9.62E+02	CO-56
									BI-214
	66	1254.23	2504 -	2518	2512.69	2.87E+02	39.27	7.17E+02	.....
	67	1281.70	2558 -	2575	2567.68	1.07E+03	52.02	8.60E+02	BI-214
M	68	1378.38	2751 -	2787	2761.28	2.77E+03	56.81	5.70E+02	BI-214
m	69	1386.00	2751 -	2787	2776.52	5.90E+02	30.43	5.62E+02	BI-214
M	70	1402.27	2803 -	2828	2809.11	8.90E+02	35.54	5.33E+02	BI-214
m	71	1408.71	2803 -	2828	2822.00	1.55E+03	44.46	5.40E+02	EU-152
									BI-214
	72	1509.97	3014 -	3033	3024.77	1.32E+03	59.15	1.09E+03	I-124
									BI-214
	73	1539.41	3072 -	3088	3083.72	1.28E+02	44.77	1.01E+03	.....
	74	1583.93	3167 -	3180	3172.88	4.12E+02	34.73	4.67E+02	BI-214
M	75	1595.53	3191 -	3213	3196.11	1.54E+02	19.49	3.69E+02	LA-140
									EU-154
m	76	1600.16	3191 -	3213	3205.38	1.85E+02	20.51	3.64E+02	.....
	77	1662.13	3324 -	3337	3329.51	6.12E+02	32.96	2.79E+02	BI-214
	78	1684.69	3366 -	3380	3374.69	1.00E+02	23.15	2.49E+02	.....
	79	1730.39	3458 -	3477	3466.23	1.73E+03	46.85	2.32E+02	BI-214
	80	1765.31	3526 -	3546	3536.15	8.81E+03	96.57	2.52E+02	BI-214
	81	1839.00	3675 -	3689	3683.77	1.14E+02	23.92	2.62E+02	.....
	82	1848.19	3692 -	3709	3702.17	9.63E+02	41.17	3.85E+02	BI-214
	83	1874.14	3750 -	3759	3754.17	7.55E+01	16.83	1.39E+02	.....

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 3/30/2016 1:50:42PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	32.19	9.72E+03	149.29	3.72E-03	2.28E-04
	2	36.39	1.33E+03	164.39	4.40E-03	2.28E-04
	3	46.66	1.68E+03	127.65	5.69E-03	2.28E-04
M	4	50.28	-3.89E+02	119.80	6.03E-03	2.28E-04
m	5	53.29	-2.16E+02	67.91	6.27E-03	2.28E-04
	6	67.76	9.86E+03	242.87	7.01E-03	2.87E-04
M	7	74.90	3.38E+03	109.08	7.19E-03	3.39E-04
m	8	77.16	7.27E+03	228.08	7.23E-03	3.56E-04
m	9	81.14	1.91E+03	65.87	7.27E-03	3.84E-04
m	10	83.88	5.25E+03	165.70	7.29E-03	4.04E-04
m	11	87.37	2.16E+03	72.80	7.31E-03	4.29E-04
m	12	89.98	2.69E+02	28.49	7.31E-03	4.32E-04
	13	94.77	-2.10E+03	283.37	7.29E-03	4.25E-04
	14	122.39	8.35E+02	176.63	6.98E-03	3.90E-04
	15	144.13	7.83E+03	195.21	6.61E-03	3.59E-04
	16	154.30	5.30E+03	241.70	6.42E-03	3.44E-04
	17	158.68	-2.38E+03	197.84	6.34E-03	3.38E-04
	18	186.29	1.34E+04	209.56	5.86E-03	3.19E-04
	19	210.80	2.17E+02	176.70	5.46E-03	3.09E-04
	20	236.15	-2.81E+03	200.06	5.09E-03	2.99E-04
	21	242.15	1.24E+04	216.75	5.00E-03	2.97E-04
M	22	254.06	1.12E+03	69.02	4.85E-03	2.92E-04
m	23	256.38	4.58E+03	96.78	4.82E-03	2.91E-04
m	24	259.05	1.28E+03	69.49	4.78E-03	2.90E-04
M	25	269.64	8.95E+03	116.92	4.65E-03	2.86E-04
m	26	271.41	7.14E+03	107.30	4.63E-03	2.85E-04
m	27	274.78	8.46E+02	62.15	4.59E-03	2.84E-04
	28	283.77	-5.10E+04	327.13	4.49E-03	2.80E-04
M	29	295.39	4.38E+04	220.91	4.37E-03	2.75E-04
m	30	300.19	2.85E+03	76.39	4.32E-03	2.74E-04
m	31	302.92	1.56E+03	65.43	4.29E-03	2.72E-04
	32	324.05	-3.03E+02	137.40	4.08E-03	2.64E-04
	33	330.02	-1.39E+04	321.08	4.03E-03	2.62E-04
	34	352.07	8.09E+04	313.17	3.84E-03	2.53E-04
M	35	387.09	5.13E+02	49.37	3.57E-03	2.39E-04
m	36	389.10	7.80E+02	55.03	3.56E-03	2.38E-04
M	37	402.08	3.15E+03	74.83	3.47E-03	2.30E-04
m	38	405.17	2.11E+03	65.60	3.45E-03	2.29E-04
	39	427.35	9.50E+02	113.03	3.31E-03	2.15E-04
	40	445.29	4.73E+02	89.45	3.20E-03	2.04E-04
	41	455.15	2.72E+02	79.41	3.15E-03	1.99E-04
	42	480.61	5.35E+01	64.16	3.01E-03	1.83E-04
	43	487.46	2.45E+02	69.77	2.98E-03	1.79E-04
	44	511.18	1.71E+03	95.42	2.87E-03	1.65E-04
	45	533.98	1.76E+02	54.06	2.77E-03	1.51E-04
	46	580.42	3.26E+02	50.50	2.59E-03	1.23E-04
	47	609.65	5.89E+04	256.03	2.49E-03	1.05E-04

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	48	665.83	1.78E+03	62.40	2.32E-03	7.49E-05
	49	703.47	6.27E+02	59.93	2.22E-03	8.30E-05
	50	720.28	3.99E+02	62.22	2.17E-03	8.66E-05
	51	768.82	5.61E+03	96.98	2.06E-03	9.70E-05
	52	786.33	1.17E+03	66.83	2.02E-03	1.01E-04
	53	806.64	1.32E+03	66.20	1.98E-03	1.05E-04
	54	821.67	2.70E+01	41.41	1.95E-03	1.08E-04
	55	832.46	5.62E+02	59.53	1.93E-03	1.11E-04
	56	839.40	3.55E+00	51.43	1.92E-03	1.12E-04
	57	934.58	2.80E+03	68.56	1.76E-03	1.14E-04
	58	964.76	2.61E+02	58.68	1.72E-03	1.05E-04
	59	1052.52	2.89E+02	56.84	1.60E-03	7.96E-05
	60	1070.48	2.05E+02	43.54	1.58E-03	7.43E-05
	61	1120.92	1.22E+04	120.45	1.52E-03	5.96E-05
	62	1134.15	2.00E+02	50.25	1.51E-03	5.57E-05
	63	1155.85	1.28E+03	52.74	1.49E-03	4.94E-05
	64	1208.42	3.16E+02	44.53	1.44E-03	4.33E-05
	65	1238.80	4.51E+03	79.91	1.41E-03	4.25E-05
	66	1254.23	2.87E+02	39.27	1.39E-03	4.21E-05
	67	1281.70	1.07E+03	52.02	1.37E-03	4.13E-05
M	68	1378.38	2.77E+03	56.81	1.29E-03	3.94E-05
m	69	1386.00	5.90E+02	30.43	1.29E-03	3.93E-05
M	70	1402.27	8.90E+02	35.54	1.28E-03	3.91E-05
m	71	1408.71	1.55E+03	44.46	1.27E-03	3.90E-05
	72	1509.97	1.32E+03	59.15	1.21E-03	3.78E-05
	73	1539.41	1.28E+02	44.77	1.19E-03	3.74E-05
	74	1583.93	4.12E+02	34.73	1.16E-03	3.69E-05
M	75	1595.53	1.54E+02	19.49	1.16E-03	3.67E-05
m	76	1600.16	1.85E+02	20.51	1.15E-03	3.67E-05
	77	1662.13	6.12E+02	32.96	1.12E-03	3.59E-05
	78	1684.69	1.00E+02	23.15	1.11E-03	3.56E-05
	79	1730.39	1.73E+03	46.85	1.09E-03	3.51E-05
	80	1765.31	8.81E+03	96.57	1.07E-03	3.47E-05
	81	1839.00	1.14E+02	23.92	1.04E-03	3.38E-05
	82	1848.19	9.63E+02	41.17	1.03E-03	3.38E-05
	83	1874.14	7.55E+01	16.83	1.02E-03	3.38E-05

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 3/30/2016 1:50:42PM

Env. Background File : \\NHHJ-6\ApexRoot\Default\Data\0000006791.CNF

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	32.19	9.72E+03	149.29			9.72E+03	1.49E+02
	2	36.39	1.33E+03	164.39			1.33E+03	1.64E+02
	3	46.66	1.68E+03	127.65	2.73E+01	2.86E+00	1.65E+03	1.28E+02
M	4	50.28	-3.89E+02	119.80			-3.89E+02	1.20E+02
m	5	53.29	-2.16E+02	67.91			-2.16E+02	6.79E+01
	6	67.76	9.86E+03	242.87			9.86E+03	2.43E+02
M	7	74.90	3.38E+03	109.08			3.38E+03	1.09E+02
m	8	77.16	7.27E+03	228.08			7.27E+03	2.28E+02
m	9	81.14	1.91E+03	65.87			1.91E+03	6.59E+01
m	10	83.88	5.25E+03	165.70			5.25E+03	1.66E+02
m	11	87.37	2.16E+03	72.80			2.16E+03	7.28E+01
m	12	89.98	2.69E+02	28.49			2.69E+02	2.85E+01
	13	94.77	-2.10E+03	283.37			-2.10E+03	2.83E+02
	14	122.39	8.35E+02	176.63			8.35E+02	1.77E+02
	15	144.13	7.83E+03	195.21			7.83E+03	1.95E+02
	16	154.30	5.30E+03	241.70			5.30E+03	2.42E+02
	17	158.68	-2.38E+03	197.84			-2.38E+03	1.98E+02
	18	186.29	1.34E+04	209.56	2.96E+01	3.21E+00	1.34E+04	2.10E+02
	19	210.80	2.17E+02	176.70			2.17E+02	1.77E+02
	20	236.15	-2.81E+03	200.06			-2.81E+03	2.00E+02
	21	242.15	1.24E+04	216.75			1.24E+04	2.17E+02
M	22	254.06	1.12E+03	69.02			1.12E+03	6.90E+01
m	23	256.38	4.58E+03	96.78			4.58E+03	9.68E+01
m	24	259.05	1.28E+03	69.49			1.28E+03	6.95E+01
M	25	269.64	8.95E+03	116.92			8.95E+03	1.17E+02
m	26	271.41	7.14E+03	107.30			7.14E+03	1.07E+02
m	27	274.78	8.46E+02	62.15			8.46E+02	6.22E+01
	28	283.77	-5.10E+04	327.13			-5.10E+04	3.27E+02
M	29	295.39	4.38E+04	220.91			4.38E+04	2.21E+02
m	30	300.19	2.85E+03	76.39			2.85E+03	7.64E+01
m	31	302.92	1.56E+03	65.43			1.56E+03	6.54E+01
	32	324.05	-3.03E+02	137.40			-3.03E+02	1.37E+02
	33	330.02	-1.39E+04	321.08			-1.39E+04	3.21E+02
	34	352.07	8.09E+04	313.17			8.09E+04	3.13E+02
M	35	387.09	5.13E+02	49.37			5.13E+02	4.94E+01
m	36	389.10	7.80E+02	55.03			7.80E+02	5.50E+01
M	37	402.08	3.15E+03	74.83			3.15E+03	7.48E+01
m	38	405.17	2.11E+03	65.60			2.11E+03	6.56E+01
	39	427.35	9.50E+02	113.03			9.50E+02	1.13E+02
	40	445.29	4.73E+02	89.45			4.73E+02	8.95E+01
	41	455.15	2.72E+02	79.41			2.72E+02	7.94E+01
	42	480.61	5.35E+01	64.16			5.35E+01	6.42E+01
	43	487.46	2.45E+02	69.77			2.45E+02	6.98E+01
	44	511.18	1.71E+03	95.42	7.31E+01	3.34E+00	1.63E+03	9.55E+01
	45	533.98	1.76E+02	54.06			1.76E+02	5.41E+01
	46	580.42	3.26E+02	50.50			3.26E+02	5.05E+01
	47	609.65	5.89E+04	256.03			5.89E+04	2.56E+02
	48	665.83	1.78E+03	62.40			1.78E+03	6.24E+01
	49	703.47	6.27E+02	59.93			6.27E+02	5.99E+01
	50	720.28	3.99E+02	62.22			3.99E+02	6.22E+01
	51	768.82	5.61E+03	96.98			5.61E+03	9.70E+01
	52	786.33	1.17E+03	66.83			1.17E+03	6.68E+01
	53	806.64	1.32E+03	66.20			1.32E+03	6.62E+01
	54	821.67	2.70E+01	41.41			2.70E+01	4.14E+01

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	55	832.46	5.62E+02	59.53			5.62E+02	5.95E+01
	56	839.40	3.55E+00	51.43			3.55E+00	5.14E+01
	57	934.58	2.80E+03	68.56			2.80E+03	6.86E+01
	58	964.76	2.61E+02	58.68			2.61E+02	5.87E+01
	59	1052.52	2.89E+02	56.84			2.89E+02	5.68E+01
	60	1070.48	2.05E+02	43.54			2.05E+02	4.35E+01
	61	1120.92	1.22E+04	120.45			1.22E+04	1.20E+02
	62	1134.15	2.00E+02	50.25			2.00E+02	5.02E+01
	63	1155.85	1.28E+03	52.74			1.28E+03	5.27E+01
	64	1208.42	3.16E+02	44.53			3.16E+02	4.45E+01
	65	1238.80	4.51E+03	79.91			4.51E+03	7.99E+01
	66	1254.23	2.87E+02	39.27			2.87E+02	3.93E+01
	67	1281.70	1.07E+03	52.02			1.07E+03	5.20E+01
M	68	1378.38	2.77E+03	56.81			2.77E+03	5.68E+01
m	69	1386.00	5.90E+02	30.43			5.90E+02	3.04E+01
M	70	1402.27	8.90E+02	35.54			8.90E+02	3.55E+01
m	71	1408.71	1.55E+03	44.46			1.55E+03	4.45E+01
	72	1509.97	1.32E+03	59.15			1.32E+03	5.92E+01
	73	1539.41	1.28E+02	44.77			1.28E+02	4.48E+01
	74	1583.93	4.12E+02	34.73			4.12E+02	3.47E+01
M	75	1595.53	1.54E+02	19.49			1.54E+02	1.95E+01
m	76	1600.16	1.85E+02	20.51			1.85E+02	2.05E+01
	77	1662.13	6.12E+02	32.96			6.12E+02	3.30E+01
	78	1684.69	1.00E+02	23.15			1.00E+02	2.31E+01
	79	1730.39	1.73E+03	46.85			1.73E+03	4.69E+01
	80	1765.31	8.81E+03	96.57			8.81E+03	9.66E+01
	81	1839.00	1.14E+02	23.92			1.14E+02	2.39E+01
	82	1848.19	9.63E+02	41.17			9.63E+02	4.12E+01
	83	1874.14	7.55E+01	16.83			7.55E+01	1.68E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 3/30/2016 1:50:42PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\NHHJ-6\ApexRoot\Default\Data\0000006791.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
1	32.19	9.72E+03	149.29			9.72E+03	1.49E+02

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	2	36.39	1.33E+03	164.39			1.33E+03	1.64E+02
	3	46.66	1.68E+03	127.65	2.73E+01	2.86E+00	1.65E+03	1.28E+02
M	4	50.28	-3.89E+02	119.80			-3.89E+02	1.20E+02
m	5	53.29	-2.16E+02	67.91			-2.16E+02	6.79E+01
	6	67.76	9.86E+03	242.87			9.86E+03	2.43E+02
M	7	74.90	3.38E+03	109.08			3.38E+03	1.09E+02
m	8	77.16	7.27E+03	228.08			7.27E+03	2.28E+02
m	9	81.14	1.91E+03	65.87			1.91E+03	6.59E+01
m	10	83.88	5.25E+03	165.70			5.25E+03	1.66E+02
m	11	87.37	2.16E+03	72.80			2.16E+03	7.28E+01
m	12	89.98	2.69E+02	28.49			2.69E+02	2.85E+01
	13	94.77	-2.10E+03	283.37			-2.10E+03	2.83E+02
	14	122.39	8.35E+02	176.63			8.35E+02	1.77E+02
	15	144.13	7.83E+03	195.21			7.83E+03	1.95E+02
	16	154.30	5.30E+03	241.70			5.30E+03	2.42E+02
	17	158.68	-2.38E+03	197.84			-2.38E+03	1.98E+02
	18	186.29	1.34E+04	209.56	2.96E+01	3.21E+00	1.34E+04	2.10E+02
	19	210.80	2.17E+02	176.70			2.17E+02	1.77E+02
	20	236.15	-2.81E+03	200.06			-2.81E+03	2.00E+02
	21	242.15	1.24E+04	216.75			1.24E+04	2.17E+02
M	22	254.06	1.12E+03	69.02			1.12E+03	6.90E+01
m	23	256.38	4.58E+03	96.78			4.58E+03	9.68E+01
m	24	259.05	1.28E+03	69.49			1.28E+03	6.95E+01
M	25	269.64	8.95E+03	116.92			8.95E+03	1.17E+02
m	26	271.41	7.14E+03	107.30			7.14E+03	1.07E+02
m	27	274.78	8.46E+02	62.15			8.46E+02	6.22E+01
	28	283.77	-5.10E+04	327.13			-5.10E+04	3.27E+02
M	29	295.39	4.38E+04	220.91			4.38E+04	2.21E+02
m	30	300.19	2.85E+03	76.39			2.85E+03	7.64E+01
m	31	302.92	1.56E+03	65.43			1.56E+03	6.54E+01
	32	324.05	-3.03E+02	137.40			-3.03E+02	1.37E+02
	33	330.02	-1.39E+04	321.08			-1.39E+04	3.21E+02
	34	352.07	8.09E+04	313.17			8.09E+04	3.13E+02
M	35	387.09	5.13E+02	49.37			5.13E+02	4.94E+01
m	36	389.10	7.80E+02	55.03			7.80E+02	5.50E+01
M	37	402.08	3.15E+03	74.83			3.15E+03	7.48E+01
m	38	405.17	2.11E+03	65.60			2.11E+03	6.56E+01
	39	427.35	9.50E+02	113.03			9.50E+02	1.13E+02
	40	445.29	4.73E+02	89.45			4.73E+02	8.95E+01
	41	455.15	2.72E+02	79.41			2.72E+02	7.94E+01
	42	480.61	5.35E+01	64.16			5.35E+01	6.42E+01
	43	487.46	2.45E+02	69.77			2.45E+02	6.98E+01
	44	511.18	1.71E+03	95.42	7.31E+01	3.34E+00	1.63E+03	9.55E+01
	45	533.98	1.76E+02	54.06			1.76E+02	5.41E+01
	46	580.42	3.26E+02	50.50			3.26E+02	5.05E+01
	47	609.65	5.89E+04	256.03			5.89E+04	2.56E+02
	48	665.83	1.78E+03	62.40			1.78E+03	6.24E+01
	49	703.47	6.27E+02	59.93			6.27E+02	5.99E+01
	50	720.28	3.99E+02	62.22			3.99E+02	6.22E+01
	51	768.82	5.61E+03	96.98			5.61E+03	9.70E+01
	52	786.33	1.17E+03	66.83			1.17E+03	6.68E+01
	53	806.64	1.32E+03	66.20			1.32E+03	6.62E+01
	54	821.67	2.70E+01	41.41			2.70E+01	4.14E+01
	55	832.46	5.62E+02	59.53			5.62E+02	5.95E+01

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	56	839.40	3.55E+00	51.43			3.55E+00	5.14E+01
	57	934.58	2.80E+03	68.56			2.80E+03	6.86E+01
	58	964.76	2.61E+02	58.68			2.61E+02	5.87E+01
	59	1052.52	2.89E+02	56.84			2.89E+02	5.68E+01
	60	1070.48	2.05E+02	43.54			2.05E+02	4.35E+01
	61	1120.92	1.22E+04	120.45			1.22E+04	1.20E+02
	62	1134.15	2.00E+02	50.25			2.00E+02	5.02E+01
	63	1155.85	1.28E+03	52.74			1.28E+03	5.27E+01
	64	1208.42	3.16E+02	44.53			3.16E+02	4.45E+01
	65	1238.80	4.51E+03	79.91			4.51E+03	7.99E+01
	66	1254.23	2.87E+02	39.27			2.87E+02	3.93E+01
	67	1281.70	1.07E+03	52.02			1.07E+03	5.20E+01
M	68	1378.38	2.77E+03	56.81			2.77E+03	5.68E+01
m	69	1386.00	5.90E+02	30.43			5.90E+02	3.04E+01
M	70	1402.27	8.90E+02	35.54			8.90E+02	3.55E+01
m	71	1408.71	1.55E+03	44.46			1.55E+03	4.45E+01
	72	1509.97	1.32E+03	59.15			1.32E+03	5.92E+01
	73	1539.41	1.28E+02	44.77			1.28E+02	4.48E+01
	74	1583.93	4.12E+02	34.73			4.12E+02	3.47E+01
M	75	1595.53	1.54E+02	19.49			1.54E+02	1.95E+01
m	76	1600.16	1.85E+02	20.51			1.85E+02	2.05E+01
	77	1662.13	6.12E+02	32.96			6.12E+02	3.30E+01
	78	1684.69	1.00E+02	23.15			1.00E+02	2.31E+01
	79	1730.39	1.73E+03	46.85			1.73E+03	4.69E+01
	80	1765.31	8.81E+03	96.57			8.81E+03	9.66E+01
	81	1839.00	1.14E+02	23.92			1.14E+02	2.39E+01
	82	1848.19	9.63E+02	41.17			9.63E+02	4.12E+01
	83	1874.14	7.55E+01	16.83			7.55E+01	1.68E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
SB-125	0.490	176.31		6.82		
		380.45		1.52		
		427.88	*	29.60	3.63E+01	5.05E+00
		463.36		10.49		
		600.60		17.86		

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
SB-125	0.490	606.72		5.03		
		635.95		11.31		
		671.45		1.80		
I-126	0.883	388.63	*	34.10	4.29E+02	4.30E+01
BA-133	0.999	53.16	*	2.20	-5.70E+01	1.80E+01
		79.62		2.62		
		81.00	*	34.06	2.81E+01	1.79E+00
		160.61		0.64		
		223.23		0.45		
		276.40		7.16		
		302.85	*	18.33	7.22E+01	5.50E+00
		356.02		62.05		
		383.85		8.94		
PB-210	0.998	46.54	*	4.25	2.47E+02	3.17E+01
PB-211	0.981	404.85	*	3.78	5.84E+02	4.35E+01
		427.09	*	1.76	5.88E+02	8.09E+01
		704.64		0.46		
		766.51		0.62		
		832.01	*	3.52	2.98E+02	3.61E+01
BI-214	0.941	609.31	*	44.80	1.90E+03	8.39E+01
		665.45	*	1.29	2.15E+03	1.14E+02
		768.36	*	4.80	2.04E+03	1.07E+02
		806.17	*	1.22	1.97E+03	1.51E+02
		934.06	*	3.03	1.89E+03	1.34E+02
		1120.29	*	14.80	1.95E+03	8.30E+01
		1155.19	*	1.64	1.89E+03	1.10E+02
		1207.68	*	0.49	1.62E+03	2.86E+02
		1238.11	*	5.86	1.97E+03	7.40E+01
		1280.96	*	1.44	1.96E+03	1.19E+02
		1377.67	*	3.92	1.96E+03	8.25E+01
		1385.31	*	0.89	1.85E+03	2.18E+02
		1401.50	*	1.55	1.62E+03	1.95E+02
		1407.98	*	2.80	1.57E+03	2.34E+02
		1415.80		0.48		
		1509.23	*	2.12	1.85E+03	1.07E+02
		1583.22	*	0.70	1.82E+03	1.68E+02
		1661.28	*	1.14	1.73E+03	1.17E+02
		1729.59	*	2.88	1.99E+03	9.38E+01
		1764.49	*	15.36	1.93E+03	7.08E+01
		1847.42	*	2.04	1.65E+03	9.44E+01
PB-214	0.996	53.23	*	1.11	-1.12E+02	3.57E+01
		241.98	*	7.50	1.19E+03	7.53E+01
		258.79	*	0.55	1.75E+03	2.13E+02
		295.21	*	18.50	1.95E+03	1.28E+02
		351.92	*	35.80	2.12E+03	1.43E+02
		785.91	*	0.85	2.45E+03	3.43E+02
		839.03	*	0.63	1.06E+01	1.53E+02
RN-219	0.992	130.59		0.12		
		271.23	*	10.80	5.14E+02	3.59E+01
		401.81	*	6.37	5.14E+02	3.63E+01
RA-223	0.876	122.32	*	1.19	3.62E+02	7.93E+01
		144.23	*	3.22	1.33E+03	8.43E+01
		154.21	*	5.62	5.29E+02	3.95E+01

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
RA-223	0.876	158.63	*	0.69	-1.96E+03	1.98E+02
		179.54		0.15		
		269.46	*	13.70	5.06E+02	3.33E+01
		288.18		0.16		
		323.87	*	3.93	-6.80E+01	3.12E+01
		328.40		0.21		
		338.28		2.79		
		342.90		0.22		
		346.80		0.18		
		371.68		0.48		
TH-227	0.993	50.13	*	8.00	-2.90E+01	9.13E+00
		79.72		1.89		
		93.93	*	1.37	-7.57E+02	1.27E+02
		210.65	*	1.10	1.30E+02	1.09E+02
		235.97	*	12.70	-1.57E+02	1.90E+01
		256.25	*	7.01	4.88E+02	4.05E+01
		286.12		1.54		
		300.00	*	2.67	8.91E+02	9.57E+01
		304.51		1.23		
		329.85	*	2.69	-4.63E+03	5.64E+02
		334.38		1.05		
TH-228	0.720	84.37	*	1.23	2.11E+03	1.39E+02
		215.99		0.26		
PA-231	0.996	283.69	*	1.70	-2.40E+04	2.07E+03
		300.07	*	2.46	9.67E+02	7.20E+01
		302.65	*	2.20	5.95E+02	8.60E+01
		330.06	*	1.40	-8.91E+03	1.41E+03
TH-231	0.986	81.23	*	0.89	1.07E+03	9.00E+01
		84.21	*	6.60	3.93E+02	3.08E+01
		89.95	*	0.94	1.41E+02	1.93E+01
U-235	0.710	109.16		1.54		
		143.76	*	10.96	3.89E+02	2.34E+01
		163.36		5.08		
		185.71	*	57.20	1.44E+02	8.27E+00
		194.94		0.63		
		202.11		1.08		
		205.31		5.01		
NP-237	0.889	57.10		0.39		
		86.48	*	12.40	8.60E+01	6.45E+00
		94.64	*	0.60	-1.73E+03	6.30E+02
		143.25	*	0.43	9.92E+03	7.52E+02
AM-243	0.991	74.66	*	68.20	2.49E+01	1.51E+00

* = Energy line found in the spectrum.
- = Manually added nuclide.
? = Manually edited nuclide.
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 1.000 sigma

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

UNIDENTIFIED PEAKS

Peak Locate Performed on : 3/30/2016 1:50:42PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.19	2.69944E+00	1.54		
	2	36.39	3.70055E-01	12.34	Tol.	I-125
	6	67.76	2.73983E+00	2.46		
m	8	77.16	2.02036E+00	3.14		
M	22	254.06	3.10476E-01	6.17	Sum	
m	27	274.78	2.34882E-01	7.35		
M	35	387.09	1.42371E-01	9.63	D-Esc	
	40	445.29	1.31389E-01	18.91	Sum	
	41	455.15	7.55834E-02	29.18	Sum	
	42	480.61	1.48611E-02	119.92	Sum	
	43	487.46	6.80556E-02	28.48	D-Esc	
	44	511.18	4.53869E-01	5.84	Sum	
	45	533.98	4.87500E-02	30.80	Sum	
	46	580.42	9.06667E-02	15.47	Sum	
	49	703.47	1.74250E-01	9.55	Sum	
	50	720.28	1.10889E-01	15.59	Tol.	SB-126
	54	821.67	7.50000E-03	153.36	Sum	
	58	964.76	7.25278E-02	22.47	Sum	
	59	1052.52	8.01806E-02	19.69	Sum	
	60	1070.48	5.69444E-02	21.24	Sum	
	62	1134.15	5.54861E-02	25.15	Sum	
	66	1254.23	7.97222E-02	13.68	S-Esc	
	73	1539.41	3.55417E-02	34.99	Sum	
M	75	1595.53	4.27078E-02	12.68	Sum	
m	76	1600.16	5.14368E-02	11.08	Sum	
	78	1684.69	2.77778E-02	23.15	Sum	
	81	1839.00	3.17361E-02	20.94	Sum	
	83	1874.14	2.09722E-02	22.29	Sum	

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

IDENTIFIED NUCLIDES

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
SB-125	0.49	176.31		6.82		
		380.45		1.52		
		427.88	*	29.60	3.63E+01	5.05E+00
		463.36		10.49		
		600.60		17.86		
		606.72		5.03		
		635.95		11.31		
		671.45		1.80		
I-126	0.88	388.63	*	34.10	4.29E+02	4.30E+01
BA-133	0.99	53.16	*	2.20	-5.70E+01	1.80E+01
		79.62		2.62		
		81.00	*	34.06	2.81E+01	1.79E+00
		160.61		0.64		
		223.23		0.45		
		276.40		7.16		
		302.85	*	18.33	7.22E+01	5.50E+00
		356.02		62.05		
		383.85		8.94		
PB-210	0.99	46.54	*	4.25	2.47E+02	3.17E+01
PB-211	0.98	404.85	*	3.78	5.84E+02	4.35E+01
		427.09	*	1.76	5.88E+02	8.09E+01
		704.64		0.46		
		766.51		0.62		
		832.01	*	3.52	2.98E+02	3.61E+01
BI-214	0.94	609.31	*	44.80	1.90E+03	8.39E+01
		665.45	*	1.29	2.15E+03	1.14E+02
		768.36	*	4.80	2.04E+03	1.07E+02
		806.17	*	1.22	1.97E+03	1.51E+02
		934.06	*	3.03	1.89E+03	1.34E+02
		1120.29	*	14.80	1.95E+03	8.30E+01
		1155.19	*	1.64	1.89E+03	1.10E+02
		1207.68	*	0.49	1.62E+03	2.86E+02
		1238.11	*	5.86	1.97E+03	7.40E+01
		1280.96	*	1.44	1.96E+03	1.19E+02
		1377.67	*	3.92	1.96E+03	8.25E+01
		1385.31	*	0.89	1.85E+03	2.18E+02
		1401.50	*	1.55	1.62E+03	1.95E+02
		1407.98	*	2.80	1.57E+03	2.34E+02
		1415.80		0.48		
		1509.23	*	2.12	1.85E+03	1.07E+02
		1583.22	*	0.70	1.82E+03	1.68E+02
		1661.28	*	1.14	1.73E+03	1.17E+02
		1729.59	*	2.88	1.99E+03	9.38E+01
		1764.49	*	15.36	1.93E+03	7.08E+01
		1847.42	*	2.04	1.65E+03	9.44E+01
PB-214	0.99	53.23	*	1.11	-1.12E+02	3.57E+01
		241.98	*	7.50	1.19E+03	7.53E+01
		258.79	*	0.55	1.75E+03	2.13E+02
		295.21	*	18.50	1.95E+03	1.28E+02
		351.92	*	35.80	2.12E+03	1.43E+02
		785.91	*	0.85	2.45E+03	3.43E+02
		839.03	*	0.63	1.06E+01	1.53E+02
RN-219	0.99	130.59		0.12		

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
RN-219	0.99	271.23	*	10.80	5.14E+02	3.59E+01
		401.81	*	6.37	5.14E+02	3.63E+01
RA-223	0.87	122.32	*	1.19	3.62E+02	7.93E+01
		144.23	*	3.22	1.33E+03	8.43E+01
		154.21	*	5.62	5.29E+02	3.95E+01
		158.63	*	0.69	-1.96E+03	1.98E+02
		179.54		0.15		
		269.46	*	13.70	5.06E+02	3.33E+01
		288.18		0.16		
		323.87	*	3.93	-6.80E+01	3.12E+01
		328.40		0.21		
		338.28		2.79		
		342.90		0.22		
		346.80		0.18		
		371.68		0.48		
TH-227	0.99	50.13	*	8.00	-2.90E+01	9.13E+00
		79.72		1.89		
		93.93	*	1.37	-7.57E+02	1.27E+02
		210.65	*	1.10	1.30E+02	1.09E+02
		235.97	*	12.70	-1.57E+02	1.90E+01
		256.25	*	7.01	4.88E+02	4.05E+01
		286.12		1.54		
		300.00	*	2.67	8.91E+02	9.57E+01
		304.51		1.23		
		329.85	*	2.69	-4.63E+03	5.64E+02
		334.38		1.05		
TH-228	0.72	84.37	*	1.23	2.11E+03	1.39E+02
		215.99		0.26		
PA-231	0.99	283.69	*	1.70	-2.40E+04	2.07E+03
		300.07	*	2.46	9.67E+02	7.20E+01
		302.65	*	2.20	5.95E+02	8.60E+01
		330.06	*	1.40	-8.91E+03	1.41E+03
TH-231	0.98	81.23	*	0.89	1.07E+03	9.00E+01
		84.21	*	6.60	3.93E+02	3.08E+01
		89.95	*	0.94	1.41E+02	1.93E+01
U-235	0.71	109.16		1.54		
		143.76	*	10.96	3.89E+02	2.34E+01
		163.36		5.08		
		185.71	*	57.20	1.44E+02	8.27E+00
		194.94		0.63		
		202.11		1.08		
		205.31		5.01		
NP-237	0.88	57.10		0.39		
		86.48	*	12.40	8.60E+01	6.45E+00
		94.64	*	0.60	-1.73E+03	6.30E+02
		143.25	*	0.43	9.92E+03	7.52E+02
AM-243	0.99	74.66	*	68.20	2.49E+01	1.51E+00

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 1.000 sigma

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
X	CO-57	0.984			
X	NB-95m	0.302			
X	CD-109	0.931			
	SB-125	0.490	1.07E+01	5.21E+00	
	I-126	0.883	4.29E+02	4.30E+01	
X	I-131	0.787			
	BA-133	0.999	2.41E+01	1.80E+00	
X	EU-152	0.647			
X	EU-154	0.980			
X	EU-155	0.317			
	PB-210	0.998	2.47E+02	3.17E+01	
	PB-211	0.981	4.16E+02	2.75E+01	
	BI-214	0.941	1.91E+03	2.40E+01	
	PB-214	0.996	1.45E+03	4.87E+01	
	RN-219	0.992	5.14E+02	2.55E+01	
	RA-223	0.876	5.25E+02	2.23E+01	
X	RA-226	0.994			
	TH-227	0.993	4.69E+02	2.79E+01	
	TH-228	0.720	1.35E+03	1.63E+02	
	PA-231	0.996	4.16E+02	4.02E+01	
	TH-231	0.986	1.42E+02	1.71E+01	
X	PA-234	0.995			
X	U-234	0.999			
	U-235	0.710	1.54E+02	7.75E+00	
	NP-237	0.889	8.62E+01	5.82E+00	
	AM-243	0.991	2.49E+01	1.51E+00	

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

UNIDENTIFIED PEAKS

Peak Locate Performed on : 3/30/2016 1:50:42PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.19	2.69944E+00	1.54		
	2	36.39	3.70055E-01	12.34	Tol.	I-125
	6	67.76	2.73983E+00	2.46		
m	8	77.16	2.02036E+00	3.14		
M	22	254.06	3.10476E-01	6.17	Sum	
m	27	274.78	2.34882E-01	7.35		
M	35	387.09	1.42371E-01	9.63	D-Esc	
	40	445.29	1.31389E-01	18.91	Sum	
	41	455.15	7.55834E-02	29.18	Sum	
	42	480.61	1.48611E-02	119.92	Sum	
	43	487.46	6.80556E-02	28.48	D-Esc	
	44	511.18	4.53869E-01	5.84	Sum	
	45	533.98	4.87500E-02	30.80	Sum	
	46	580.42	9.06667E-02	15.47	Sum	
	49	703.47	1.74250E-01	9.55	Sum	
	50	720.28	1.10889E-01	15.59	Tol.	SB-126
	54	821.67	7.50000E-03	153.36	Sum	
	58	964.76	7.25278E-02	22.47	Sum	
	59	1052.52	8.01806E-02	19.69	Sum	
	60	1070.48	5.69444E-02	21.24	Sum	
	62	1134.15	5.54861E-02	25.15	Sum	
	66	1254.23	7.97222E-02	13.68	S-Esc	
	73	1539.41	3.55417E-02	34.99	Sum	
M	75	1595.53	4.27078E-02	12.68	Sum	
m	76	1600.16	5.14368E-02	11.08	Sum	
	78	1684.69	2.77778E-02	23.15	Sum	
	81	1839.00	3.17361E-02	20.94	Sum	
	83	1874.14	2.09722E-02	22.29	Sum	

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BE-7	477.60		10.42	-2.93E+01	1.12E+02	1.12E+02
	NA-22	1274.53		99.94	-1.11E+01	6.47E+00	6.47E+00
@	NA-24	1368.63		100.00	1.00E+26	1.00E+26	1.00E+26
> @		2754.03		99.94	0.00E+00		0.00E+00
	K-40	1460.83		10.67	-2.18E+00	6.39E+01	6.39E+01
@	AR-41	1293.59		99.10	1.00E+26	1.00E+26	1.00E+26
	CR-51	320.08		9.86	-1.37E+02	2.12E+02	2.12E+02
	MN-54	834.85		99.98	-2.82E+00	8.48E+00	8.48E+00
	CO-56	846.77		99.93	-1.49E+01	2.34E+00	9.95E+00
		977.37		1.44	3.48E+01		7.30E+02
		1037.84		13.99	6.16E+00		7.15E+01
		1175.10		2.28	-1.80E+02		4.55E+02
		1238.28		67.56	2.81E+02		3.13E+01
		1360.21		4.33	6.47E+01		2.38E+02
		1771.35		15.69	-1.02E+03		2.13E+02
		2015.18		3.08	0.00E+00		5.96E+00
		2034.76		7.89	0.00E+00		2.34E+00
@	MN-56	846.75		98.87	1.00E+26	1.00E+26	1.00E+26
@		1810.72		27.19	1.00E+26		1.00E+26
> @		2113.05		14.34	0.00E+00		0.00E+00
	CO-57	122.06	*	85.60	5.79E+00	5.64E+00	5.64E+00
		136.47		10.68	-1.58E+02		6.09E+01
		692.41		0.16	-1.68E+03		3.60E+03
	CO-58	810.78		99.45	-2.09E+01	1.24E+01	1.24E+01
		863.96		0.68	4.95E+01		1.64E+03
		1674.73		0.52	-6.25E+03		1.48E+03
	FE-59	142.65		1.02	-1.96E+03	2.71E+01	1.53E+03
		192.35		3.08	-4.20E+03		4.48E+02
		1099.25		56.50	5.30E+00		2.71E+01
		1291.60		43.20	-1.81E+02		3.24E+01
	CO-60	1173.24		99.90	-2.66E+00	6.40E+00	6.48E+00
		1332.50		99.98	1.72E+00		6.40E+00
@	CU-64	1345.77		0.47	1.00E+26	1.00E+26	1.00E+26
	ZN-65	1115.55		50.60	-7.95E+01	3.97E+01	3.97E+01
	SE-75	66.05		1.12	4.19E+03	1.20E+01	6.71E+02
		96.73		3.42	5.61E+02		1.88E+02
		121.12		17.14	-1.05E+01		4.21E+01
		136.00		58.27	-1.10E+01		1.33E+01
		198.61		1.47	1.37E+02		5.50E+02
		264.66		58.50	-8.57E+01		1.20E+01
		279.54		24.79	-3.24E+02		3.02E+01
		303.93		1.31	-2.21E+04		6.66E+02
		400.66		11.37	-1.20E+02		8.61E+01
	RB-83	520.39		44.70	-1.79E+01	1.75E+01	1.75E+01
		529.59		29.30	-1.38E+01		2.70E+01
		552.59		15.96	-1.69E+01		4.99E+01
@	BR-84	881.60		42.00	1.00E+26	1.00E+26	1.00E+26

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
@	BR-84	1897.60		14.90	1.00E+26	1.00E+26	1.00E+26
	KR-85	514.01		0.43	-2.50E+02	1.41E+03	1.41E+03
@	KR-85M	151.20		75.00	1.00E+26	1.00E+26	1.00E+26
@		304.87		14.00	1.00E+26		1.00E+26
	SR-85	514.01		95.70	-2.01E+00	1.13E+01	1.13E+01
@	SR-85m	151.19		12.90	1.00E+26	1.00E+26	1.00E+26
@		231.86		84.40	1.00E+26		1.00E+26
	RB-86	1077.00		8.64	-4.98E+02	5.34E+02	5.34E+02
@	KR-87	402.59		49.60	1.00E+26	1.00E+26	1.00E+26
@		673.83		1.89	1.00E+26		1.00E+26
@		845.44		7.30	1.00E+26		1.00E+26
@		1175.40		1.11	1.00E+26		1.00E+26
@		1740.52		2.04	1.00E+26		1.00E+26
@	KR-88	165.98		3.10	1.00E+26	1.00E+26	1.00E+26
@		196.30		26.00	1.00E+26		1.00E+26
@		362.23		2.25	1.00E+26		1.00E+26
@		834.83		13.00	1.00E+26		1.00E+26
@		985.78		1.52	1.00E+26		1.00E+26
@		1141.33		1.28	1.00E+26		1.00E+26
@		1179.51		1.00	1.00E+26		1.00E+26
@		1250.67		1.12	1.00E+26		1.00E+26
@		1369.50		1.48	1.00E+26		1.00E+26
@		1518.39		2.15	1.00E+26		1.00E+26
@		1529.77		10.90	1.00E+26		1.00E+26
@	RB-88	898.03		14.04	1.00E+26	1.00E+26	1.00E+26
@		1836.01		21.40	1.00E+26		1.00E+26
	Y-88	898.04		93.68	1.43E+00	7.78E+00	1.06E+01
		1836.06		99.24	-1.99E+01		7.78E+00
	NB-94x	702.62		97.90	-1.68E+00	6.04E+00	6.04E+00
		871.09		99.90	1.13E-01		6.58E+00
	NB-95	765.81		99.81	-3.52E+01	3.03E+01	3.03E+01
	NB-95m	204.12		2.33	7.40E+05	1.10E+06	1.01E+07
		235.69	*	24.80	-3.22E+06		1.10E+06
	ZR-95	724.20		44.17	-3.19E+00	1.84E+01	2.29E+01
		756.73		54.46	2.18E+00		1.84E+01
	NB-96	460.04		26.62	8.99E+17	6.59E+17	2.35E+18
		568.87		57.97	5.39E+17		1.07E+18
		778.22		96.45	-1.08E+19		6.59E+17
		849.93		20.40	-2.46E+18		3.52E+18
		1200.23		19.96	-6.42E+18		3.61E+18
	MO-99	140.51		4.52	-4.19E+08	4.88E+07	1.42E+08
		181.06		6.08	-7.16E+08		1.06E+08
		366.42		1.20	-2.46E+08		4.56E+08
		739.50		12.13	3.57E+07		4.88E+07
		777.92		4.28	-2.29E+09		1.40E+08
@	TC-99M	140.51		89.06	1.00E+26	1.00E+26	1.00E+26
	RU-103	443.80		3.27	-1.13E+02	1.45E+01	4.43E+02
		497.08		90.90	-1.21E+01		1.45E+01
		610.33		5.75	-3.75E+03		1.09E+03
	RHRU-106	621.93		9.93	-1.32E+01	5.25E+01	5.25E+01
		1050.41		1.56	-2.33E+01		4.62E+02
	AG-108M	433.94		90.50	-3.19E+00	6.05E+00	6.05E+00

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AG-108M	614.28		89.90	-4.51E+02	6.05E+00	2.38E+01
		722.94		90.90	-7.04E-01		6.14E+00
	CD-109	88.03	*	3.61	3.21E+02	1.21E+02	1.21E+02
	AG-110M	116.48		1.36	-1.66E+02	5.92E+00	4.36E+02
		446.81		3.72	-7.48E+01		1.70E+02
		620.36		2.79	-6.76E+03		2.01E+02
		657.76		94.00	-3.15E+01		5.92E+00
		677.62		10.28	-3.04E+00		5.43E+01
		687.02		6.39	1.06E+01		8.96E+01
		706.68		16.32	-2.35E+01		4.26E+01
		744.28		4.70	7.04E+01		1.32E+02
		763.94		22.14	-1.02E+02		4.67E+01
		818.03		7.29	-3.38E+01		9.39E+01
		884.68		72.19	-5.37E-02		1.09E+01
		937.49		34.13	-1.07E+02		3.31E+01
		1384.30		24.12	1.85E+02		5.35E+01
		1475.79		3.97	-3.88E+00		2.06E+02
		1505.04		12.95	-4.83E+01		9.56E+01
		1562.30		1.02	-1.75E+02		7.58E+02
	SN-113	255.06		1.82	2.96E+03	1.24E+01	4.97E+02
		391.69		64.00	-6.59E+00		1.24E+01
	IN-114	190.27		15.40	-5.30E+02	8.59E+01	8.59E+01
		558.43		4.40	-9.62E+01		2.47E+02
		725.24		4.40	-7.46E+01		2.66E+02
	SB-122	564.24		69.30	7.27E+05	1.06E+07	1.06E+07
	I-124	602.72		60.50	-5.02E+04	8.49E+04	8.49E+04
		722.78		9.98	-7.14E+04		5.23E+05
		1509.49		2.99	1.30E+07		3.36E+06
		1691.02		10.40	1.92E+05		5.40E+05
	SB-124	602.73		97.80	-6.23E+00	1.05E+01	1.05E+01
		645.85		7.38	-5.25E+01		1.20E+02
		709.32		1.35	-8.42E+02		7.62E+02
		713.78		2.27	-8.11E+02		4.21E+02
		722.79		10.76	-1.33E+01		9.73E+01
		968.20		1.89	-4.65E+02		6.83E+02
		1045.13		1.84	-2.41E+02		6.15E+02
		1325.51		1.62	-3.84E+02		7.00E+02
		1355.18		1.04	2.82E+02		1.13E+03
		1368.16		2.62	-2.09E+03		4.45E+02
		1436.56		1.23	-2.62E+02		1.00E+03
		1690.98		47.30	8.49E+00		2.38E+01
	I-125	30.98		20.10	-1.76E+02	7.56E+01	7.56E+01
		35.49		6.68	9.49E+02		1.99E+02
+	SB-125	176.31		6.82	-8.31E+01	1.95E+01	8.68E+01
		380.45		1.52	-1.57E+02		3.50E+02
		427.88	*	29.60	3.63E+01		1.95E+01
		463.36		10.49	-2.13E+01		5.17E+01
		600.60		17.86	-3.04E+01		3.12E+01
		606.72		5.03	-3.56E+01		4.87E+02
		635.95		11.31	1.55E+01		4.43E+01
		671.45		1.80	-1.14E+03		2.84E+02
	@ XE-125	188.42		54.00	1.00E+26	1.00E+26	1.00E+26

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
@	XE-125	243.38		30.10	1.00E+26	1.00E+26	1.00E+26
+	I-126	388.63	*	34.10	4.29E+02	2.23E+02	2.23E+02
	SB-126	414.80		83.30	-2.27E+02	1.09E+02	1.56E+02
		666.30		99.60	6.04E+02		1.39E+02
		695.00		99.60	-1.68E+02		1.09E+02
		697.00		28.90	-5.38E+02		3.78E+02
		720.50		53.80	-3.25E+01		2.20E+02
		856.70		17.60	2.33E+01		7.90E+02
	I-129	39.58		7.45	-1.42E+02	6.93E+01	6.93E+01
@	I-130	418.01		34.15	1.00E+26	1.00E+26	1.00E+26
@		536.09		99.00	1.00E+26		1.00E+26
@		668.54		96.10	1.00E+26		1.00E+26
@		739.48		82.30	1.00E+26		1.00E+26
@		1157.47		11.30	1.00E+26		1.00E+26
	I-131	284.30	*	6.14	-7.83E+05	7.11E+02	2.85E+04
		364.49		81.70	-3.07E+02		7.11E+02
		636.99		7.17	3.61E+03		7.94E+03
		722.91		1.77	-4.26E+03		3.71E+04
	XE-131M	163.93		1.91	-3.30E+03	7.72E+03	7.72E+03
	TE-132	111.76		1.74	3.00E+07	9.61E+05	3.75E+07
		116.30		1.96	-1.53E+07		4.02E+07
		228.16		88.00	-4.70E+06		9.61E+05
+	BA-133	53.16	*	2.20	-5.70E+01	1.28E+01	1.16E+02
		79.62		2.62	-3.55E+02		2.26E+02
		81.00	*	34.06	2.81E+01		1.28E+01
		160.61		0.64	-6.88E+01		9.37E+02
		223.23		0.45	-8.77E+02		1.22E+03
		276.40		7.16	-1.25E+03		8.18E+01
		302.85	*	18.33	7.22E+01		2.11E+01
		356.02		62.05	-4.87E+02		1.92E+01
		383.85		8.94	-6.07E+00		6.00E+01
	I-133	529.87		87.00	-4.34E+19	8.51E+19	8.51E+19
		875.33		4.51	-2.30E+20		2.14E+21
	CS-134	475.35		1.47	-2.21E+02	6.92E+00	3.71E+02
		563.23		8.38	-1.48E+01		6.42E+01
		569.32		15.43	9.29E+00		3.58E+01
		604.70		97.56	-2.45E+00		1.26E+01
		795.84		85.44	-2.95E+01		6.92E+00
		801.93		8.73	-1.66E+02		8.19E+01
		1038.57		1.00	7.61E+00		6.40E+02
		1167.94		1.80	-6.62E+02		3.70E+02
		1365.15		3.04	-5.74E+01		2.15E+02
@	I-134	405.45		7.35	1.00E+26	1.00E+26	1.00E+26
@		540.83		7.60	1.00E+26		1.00E+26
@		595.36		11.20	1.00E+26		1.00E+26
@		621.79		10.60	1.00E+26		1.00E+26
@		677.34		7.80	1.00E+26		1.00E+26
@		847.03		95.40	1.00E+26		1.00E+26
@		884.09		64.90	1.00E+26		1.00E+26
@		1072.55		15.00	1.00E+26		1.00E+26
@		1136.16		9.20	1.00E+26		1.00E+26
	CS-135	787.20		100.00	2.16E+01	6.36E+00	6.87E+00

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CS-135	846.10	95.90	-8.52E+00	6.36E+00	6.36E+00
@	I-135	417.63	3.55	1.00E+26	1.00E+26	1.00E+26
@		546.56	7.20	1.00E+26		1.00E+26
@		836.80	6.73	1.00E+26		1.00E+26
@		1038.76	8.00	1.00E+26		1.00E+26
@		1124.00	3.64	1.00E+26		1.00E+26
@		1131.51	22.74	1.00E+26		1.00E+26
@		1260.41	28.90	1.00E+26		1.00E+26
@		1457.56	8.73	1.00E+26		1.00E+26
@		1678.03	9.62	1.00E+26		1.00E+26
@		1706.46	4.13	1.00E+26		1.00E+26
@		1791.20	7.77	1.00E+26		1.00E+26
@	XE-135	249.79	90.20	1.00E+26	1.00E+26	1.00E+26
@		608.18	2.90	1.00E+26		1.00E+26
@	XE-135M	526.56	80.50	1.00E+26	1.00E+26	1.00E+26
	CS-136	66.88	4.80	3.03E+04	1.07E+02	2.33E+03
		86.36	5.20	1.20E+04		2.03E+03
		153.25	5.77	9.01E+03		2.08E+03
		163.92	3.40	-1.34E+03		3.14E+03
		176.60	10.00	-1.02E+03		1.04E+03
		273.65	11.10	1.03E+04		1.29E+03
		340.55	42.30	3.91E+02		2.50E+02
		818.51	100.00	-1.63E+01		1.07E+02
		1048.07	80.00	-4.61E+01		1.45E+02
		1235.36	20.10	-3.79E+03		1.17E+03
	CS-137	661.66	85.10	-2.19E+01	6.99E+00	6.99E+00
@	CS-138	138.10	1.49	1.00E+26	1.00E+26	1.00E+26
@		227.76	1.51	1.00E+26		1.00E+26
@		408.98	4.66	1.00E+26		1.00E+26
@		462.80	30.70	1.00E+26		1.00E+26
@		547.00	10.76	1.00E+26		1.00E+26
@		871.80	5.11	1.00E+26		1.00E+26
@		1009.78	29.80	1.00E+26		1.00E+26
@		1147.22	1.24	1.00E+26		1.00E+26
@		1343.59	1.14	1.00E+26		1.00E+26
@		1435.86	76.30	1.00E+26		1.00E+26
	LA-138	788.74	33.60	-1.42E+01	9.86E+00	2.06E+01
		1435.80	66.40	-1.45E+00		9.86E+00
@	BA-139	165.86	23.60	1.00E+26	1.00E+26	1.00E+26
	CE-139	165.85	79.90	-5.80E+00	9.59E+00	9.59E+00
	BA-140	162.66	6.21	-6.19E+02	4.36E+02	1.89E+03
		304.85	4.30	-2.67E+04		2.72E+03
		423.72	3.10	-2.00E+03		4.10E+03
		437.58	1.93	-7.12E+03		5.56E+03
		537.26	24.39	-1.25E+02		4.36E+02
	LA-140	328.76	20.32	2.10E+11	6.05E+10	2.27E+11
		432.49	2.90	-5.28E+11		1.48E+12
		487.02	45.50	3.18E+10		9.23E+10
		751.64	4.33	-4.19E+11		9.71E+11
		815.77	23.30	-7.26E+11		1.88E+11
		867.85	5.50	-3.44E+11		9.06E+11
		919.55	2.66	-9.21E+11		1.89E+12

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
LA-140	925.19		6.90	-7.04E+12	6.05E+10	7.06E+11
	1596.21		95.40	-3.67E+10		6.05E+10
CE-141	145.44		48.20	-6.07E+01	4.48E+01	4.48E+01
CE-144	80.12		1.36	-4.05E+03	5.68E+01	4.54E+02
	133.51		11.09	-5.22E+00		5.68E+01
PM-144	476.78		41.98	-7.00E+00	5.45E+00	1.40E+01
	618.01		98.59	-8.29E+02		5.45E+00
	694.00		0.55	-9.58E+02		1.01E+03
	696.49		99.49	-9.17E+00		5.63E+00
	778.57		1.51	-6.50E+03		4.00E+02
	814.14		0.55	-4.44E+03		1.14E+03
PM-146	146.20		0.22	-8.04E+03	8.32E+00	3.09E+03
	453.88		66.00	-6.84E+00		8.32E+00
	589.80		0.43	-1.93E+03		1.21E+03
	633.25		1.12	-1.52E+01		4.31E+02
	735.93		22.80	-2.17E+01		2.25E+01
	747.24		17.71	-3.22E+00		3.03E+01
ND-147	91.11		27.90	-4.00E+03	5.25E+02	5.25E+02
	319.41		1.95	-4.97E+03		8.54E+03
	398.15		0.87	-6.58E+04		2.15E+04
	439.89		1.20	-8.75E+03		1.44E+04
	531.02		13.09	-4.75E+02		1.28E+03
EU-152	121.78	*	28.42	1.53E+01	1.49E+01	1.49E+01
	244.70		7.49	-1.48E+02		1.13E+02
	295.94	*	0.44	8.28E+04		9.18E+02
	344.28		26.58	-1.94E+03		2.01E+01
	411.12		2.23	-6.49E+02		2.69E+02
	443.98		3.09	-3.17E+01		1.78E+02
	688.67		0.83	-1.37E+02		5.93E+02
	778.90		12.96	-5.16E+02		4.23E+01
	867.39		4.15	-4.84E+01		1.57E+02
	964.13	*	14.50	3.81E+01		3.87E+01
	1005.28		0.65	-1.51E+02		9.61E+02
	1085.87		10.16	2.69E+01		6.23E+01
	1089.70		1.71	-7.12E+01		3.68E+02
	1112.12		13.54	-4.00E+02		4.81E+01
	1212.95		1.40	-6.68E+01		4.88E+02
	1299.12		1.63	1.03E+02		3.78E+02
	1408.01	*	20.87	2.12E+02		2.13E+01
GD-153	69.67		2.54	1.20E+03	1.74E+01	2.69E+02
	97.43		30.20	1.42E+01		1.74E+01
	103.18		21.44	-1.58E+01		2.22E+01
EU-154	123.07	*	40.78	1.07E+01	1.04E+01	1.04E+01
	247.93		6.95	-7.06E+02		7.70E+01
	444.49	*	0.56	9.63E+02		8.27E+02
	582.10		0.89	8.39E+02		6.31E+02
	591.76		4.99	-7.67E+01		1.04E+02
	692.42		1.80	-1.29E+02		2.76E+02
	723.30		20.22	-3.21E+00		2.80E+01
	756.80		4.57	1.45E+01		1.22E+02
	815.53		0.52	-4.28E+03		1.10E+03
	845.39		0.59	-1.38E+03		1.06E+03

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	EU-154	873.19		12.27	-7.00E+00	1.04E+01	5.42E+01
		892.78		0.52	1.60E+02		1.34E+03
		904.08		0.90	-3.07E+01		7.85E+02
		996.26		10.59	2.81E+00		6.01E+01
		1004.72		18.00	-4.96E+00		3.49E+01
		1246.15		0.87	-5.16E+03		8.71E+02
		1274.44		35.19	-3.07E+01		1.79E+01
		1494.05		0.70	-2.66E+02		1.08E+03
		1596.49	*	1.80	2.70E+02		2.27E+02
	EU-155	45.30		1.32	-1.25E+02	1.34E+01	3.84E+02
		60.01		1.13	-5.07E+02		3.78E+02
		86.54	*	30.70	3.55E+01		1.34E+01
		105.31		21.15	-1.37E+01		1.97E+01
	W-187	72.00		11.10	-5.28E+19	1.14E+18	2.59E+18
		134.25		8.80	8.15E+17		4.02E+18
		479.55		21.80	-3.98E+17		1.65E+18
		618.26		6.28	-7.47E+20		4.91E+18
		625.52		1.09	-1.52E+19		2.74E+19
		685.73		27.30	8.18E+15		1.14E+18
		772.89		4.12	-6.23E+19		1.53E+19
	IR-192	295.96		28.66	1.93E+03	1.08E+01	7.32E+01
		308.46		30.00	-5.03E+01		2.91E+01
		316.51		82.81	7.15E+00		1.08E+01
		468.07		47.83	-1.10E+01		1.80E+01
		588.58		4.51	-2.58E+02		1.92E+02
		604.41		8.23	-4.64E+01		2.39E+02
		612.47		5.31	-8.96E+03		7.51E+02
	TL-201	135.34		2.56	-6.62E+06	1.69E+07	6.39E+07
		167.43		10.00	-5.46E+06		1.69E+07
	HG-203	279.20		81.46	-1.83E+02	1.52E+01	1.52E+01
	TL-208	277.36		6.31	-1.53E+03	6.57E+00	9.02E+01
		510.77		22.60	-5.27E+00		2.66E+01
		583.19		84.50	-1.32E+00		6.57E+00
		763.13		1.81	-1.36E+03		3.58E+02
		860.56		12.42	1.84E+01		5.24E+01
+	PB-210	46.54	*	4.25	2.47E+02	8.46E+01	8.46E+01
	BI-211	351.06		12.91	5.87E+03	1.42E+02	1.42E+02
+	PB-211	404.85	*	3.78	5.84E+02	1.13E+02	1.13E+02
		427.09	*	1.76	5.88E+02		3.15E+02
		704.64		0.46	2.53E+03		1.28E+03
		766.51		0.62	-1.61E+03		1.64E+03
		832.01	*	3.52	2.98E+02		1.36E+02
	BI-212	727.33		6.58	-2.73E+01	7.83E+01	7.83E+01
		785.37		1.10	-2.88E+02		6.22E+02
		1078.62		0.56	-1.21E+03		1.03E+03
		1620.50		1.49	-1.58E+02		3.81E+02
	PB-212	115.18		0.59	1.46E+02	1.78E+01	7.18E+02
		238.63		43.30	6.00E+01		1.78E+01
		300.09		3.28	-6.52E+03		2.05E+02
+	BI-214	609.31	*	44.80	1.90E+03	1.23E+01	1.23E+01
		665.45	*	1.29	2.15E+03		2.61E+02
		768.36	*	4.80	2.04E+03		1.05E+02

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BI-214	806.17	*	1.22	1.97E+03	1.23E+01	3.88E+02
		934.06	*	3.03	1.89E+03		1.39E+02
		1120.29	*	14.80	1.95E+03		3.61E+01
		1155.19	*	1.64	1.89E+03		2.71E+02
		1207.68	*	0.49	1.62E+03		9.88E+02
		1238.11	*	5.86	1.97E+03		8.93E+01
		1280.96	*	1.44	1.96E+03		3.49E+02
		1377.67	*	3.92	1.96E+03		1.14E+02
		1385.31	*	0.89	1.85E+03		4.99E+02
		1401.50	*	1.55	1.62E+03		2.82E+02
		1407.98	*	2.80	1.57E+03		1.57E+02
		1415.80		0.48	-8.84E+03		1.50E+03
		1509.23	*	2.12	1.85E+03		3.10E+02
		1583.22	*	0.70	1.82E+03		5.91E+02
		1661.28	*	1.14	1.73E+03		2.94E+02
		1729.59	*	2.88	1.99E+03		1.19E+02
		1764.49	*	15.36	1.93E+03		2.38E+01
		1847.42	*	2.04	1.65E+03		2.20E+02
+	PB-214	53.23	*	1.11	-1.12E+02	1.61E+01	2.27E+02
		241.98	*	7.50	1.19E+03		8.33E+01
		258.79	*	0.55	1.75E+03		7.51E+02
		295.21	*	18.50	1.95E+03		2.17E+01
		351.92	*	35.80	2.12E+03		1.61E+01
		785.91	*	0.85	2.45E+03		5.65E+02
		839.03	*	0.63	1.06E+01		7.21E+02
+	RN-219	130.59		0.12	-3.26E+03	3.76E+01	4.51E+03
		271.23	*	10.80	5.14E+02		3.76E+01
		401.81	*	6.37	5.14E+02		6.70E+01
	RN-220	549.73		0.11	1.90E+03	4.73E+03	4.73E+03
+	RA-223	122.32	*	1.19	3.62E+02	2.96E+01	3.53E+02
		144.23	*	3.22	1.33E+03		1.38E+02
		154.21	*	5.62	5.29E+02		1.07E+02
		158.63	*	0.69	-1.96E+03		7.82E+02
		179.54		0.15	-3.45E+04		3.85E+03
		269.46	*	13.70	5.06E+02		2.96E+01
		288.18		0.16	-1.61E+05		3.56E+03
		323.87	*	3.93	-6.80E+01		1.45E+02
		328.40		0.21	6.83E+03		2.93E+03
		338.28		2.79	5.39E+00		2.11E+02
		342.90		0.22	-2.60E+04		2.48E+03
		346.80		0.18	-3.12E+05		3.05E+03
		371.68		0.48	2.90E+02		1.06E+03
	RA-224	240.99		3.97	2.52E+03	2.15E+02	2.15E+02
	RA-226	186.10	*	3.50	2.36E+03	1.43E+02	1.43E+02
+	TH-227	50.13	*	8.00	-2.90E+01	3.27E+01	3.27E+01
		79.72		1.89	-4.87E+02		3.10E+02
		93.93	*	1.37	-7.57E+02		4.82E+02
		210.65	*	1.10	1.30E+02		4.93E+02
		235.97	*	12.70	-1.57E+02		5.39E+01
		256.25	*	7.01	4.88E+02		5.92E+01
		286.12		1.54	-6.73E+02		3.84E+02
		300.00	*	2.67	8.91E+02		1.55E+02

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	TH-227	304.51		1.23	-1.18E+04	3.27E+01	4.94E+02
		329.85	*	2.69	-4.63E+03		5.30E+02
		334.38		1.05	-5.44E+02		5.48E+02
	AC-228	99.50		1.28	-4.44E+02	2.61E+01	3.33E+02
		129.07		2.45	-2.19E+02		2.18E+02
		153.98		0.74	4.37E+03		8.89E+02
		209.25		3.88	-2.95E+01		1.50E+02
		270.24		3.43	3.59E+03		2.49E+02
		327.90		3.06	8.88E+02		2.08E+02
		332.37		0.40	1.12E+03		1.54E+03
		338.32		11.25	1.34E+00		5.22E+01
		409.46		1.94	-4.29E+02		3.42E+02
		463.01		4.44	-4.84E+01		1.18E+02
		508.96		0.47	-6.72E+02		1.27E+03
		562.50		0.87	-1.75E+02		5.86E+02
		755.32		1.00	3.50E+02		5.53E+02
		772.29		1.50	-2.13E+03		6.74E+02
		782.14		0.50	-1.91E+03		1.31E+03
		794.95		4.34	-4.11E+02		1.29E+02
		830.49		0.55	-9.86E+02		1.30E+03
		835.71		1.68	-1.49E+02		4.51E+02
		840.38		0.94	-9.15E+02		7.03E+02
		904.20		0.78	-3.50E+01		8.95E+02
		911.21		26.60	1.58E+01		2.61E+01
		964.77		5.11	-2.48E+01		1.35E+02
		968.97		16.20	-3.23E+01		4.21E+01
		1247.08		0.50	-8.87E+03		1.25E+03
		1459.14		0.80	-3.10E+02		8.43E+02
		1495.91		0.89	-3.32E+01		8.54E+02
		1580.54		0.61	-1.60E+03		1.26E+03
		1588.21		3.27	-2.53E+02		2.39E+02
		1630.63		1.60	1.64E+01		3.39E+02
+	TH-228	84.37	*	1.23	2.11E+03	3.40E+02	3.40E+02
		215.99		0.26	-3.05E+02		2.12E+03
	TH-229	75.09		0.61	1.01E+04	1.33E+02	1.08E+03
		86.35		3.90	8.74E+02		1.48E+02
		124.60		1.43	-5.74E+01		3.74E+02
		136.99		1.18	-1.83E+03		4.81E+02
		148.15		0.88	-2.73E+03		6.77E+02
		154.34		0.77	4.09E+03		8.54E+02
		156.41		1.19	3.07E+03		5.58E+02
		193.51		4.41	-1.22E+03		1.33E+02
		204.69		0.60	-1.29E+02		9.70E+02
		210.85		2.77	-5.25E+01		2.07E+02
+	PA-231	283.69	*	1.70	-2.40E+04	1.68E+02	8.73E+02
		300.07	*	2.46	9.67E+02		1.68E+02
		302.65	*	2.20	5.95E+02		1.74E+02
		330.06	*	1.40	-8.91E+03		1.02E+03
+	TH-231	81.23	*	0.89	1.07E+03	6.33E+01	4.84E+02
		84.21	*	6.60	3.93E+02		6.33E+01
		89.95	*	0.94	1.41E+02		4.18E+02
	TH-232	63.81		0.27	-6.40E+03	1.64E+03	1.64E+03

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
U-232	57.78		0.20	-3.21E+03	2.07E+03	2.07E+03
	129.08		0.07	-7.78E+03		7.76E+03
PA-233	75.35		1.39	4.45E+03	1.37E+01	4.72E+02
	86.81		1.97	2.16E+02		2.73E+02
	103.97		0.87	-3.88E+02		4.68E+02
	271.48		0.33	3.97E+04		2.63E+03
	300.34		6.62	-3.23E+03		1.02E+02
	312.17		38.60	-1.27E+00		1.37E+01
	340.81		4.47	2.02E+02		1.30E+02
	375.45		0.68	4.34E+02		7.62E+02
	398.62		1.39	-1.06E+03		4.48E+02
	415.76		1.75	-8.02E+01		3.45E+02
U-233	42.44		0.09	-2.60E+04	5.51E+03	5.51E+03
	54.70		0.02	-8.53E+03		2.34E+04
	97.13		0.02	1.83E+04		2.24E+04
PA-234	62.70		1.55	-1.67E+03	3.01E+01	2.83E+02
	99.86		3.19	-2.32E+02		1.32E+02
	125.46		0.78	-2.06E+02		6.87E+02
	131.30		18.00	-1.36E+01		3.01E+01
	140.50		0.81	-2.11E+03		7.16E+02
	152.71		5.97	3.29E+02		1.10E+02
	159.48	*	0.65	-2.08E+03		8.30E+02
	170.85		0.50	-1.37E+02		1.15E+03
	186.15	*	1.76	4.68E+03		2.85E+02
	193.73		0.49	-1.06E+04		1.20E+03
	200.97		0.90	-2.34E+01		6.49E+02
	203.12		1.23	2.02E+00		4.76E+02
	227.00		9.99	-2.24E+01		5.45E+01
	245.37		0.75	-2.28E+03		1.05E+03
	249.22		2.47	-2.93E+03		2.14E+02
	272.28	*	1.08	5.14E+03		3.76E+02
	293.79		2.99	1.10E+04		4.16E+02
	330.40	*	0.77	-1.62E+04		1.85E+03
	369.50		2.47	5.11E+01		2.05E+02
	372.00		1.21	1.49E+02		4.22E+02
	458.68		1.13	1.38E+02		4.86E+02
	506.75		1.29	-5.69E+02		4.24E+02
	513.40		1.10	-5.64E+01		5.49E+02
	521.40		0.74	-8.21E+02		6.74E+02
	565.20		1.03	1.38E+02		5.05E+02
	569.32		11.80	1.15E+01		4.45E+01
	602.60		0.54	-5.97E+02		1.01E+03
	663.90		0.54	-2.05E+03		1.19E+03
	666.50	*	1.16	2.39E+03		2.90E+02
	669.70		0.99	-1.45E+03		6.48E+02
	692.60		1.24	-1.85E+02		3.96E+02
	699.03		3.61	-1.38E+02		1.52E+02
	705.90		2.27	-1.42E+02		2.62E+02
	730.90		0.63	3.20E+01		8.14E+02
	733.39		6.90	-4.12E+01		7.33E+01
	738.00		1.15	-7.16E+01		4.50E+02
	742.81		2.06	2.20E+02		2.60E+02

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PA-234	755.00		1.22	3.50E+02	3.01E+01	4.54E+02
		780.40		0.90	-1.56E+03		6.24E+02
		786.27	*	1.19	1.75E+03		4.04E+02
		794.90		1.34	-1.33E+03		4.18E+02
		796.10		2.58	-9.28E+02		2.18E+02
		805.52		3.14	-1.68E+02		2.29E+02
		819.20		1.88	-3.14E+01		3.12E+02
		824.65		3.12	-2.40E+02		1.95E+02
		831.50	*	4.12	2.54E+02		1.16E+02
		876.00		2.52	6.93E-01		2.64E+02
		880.50		10.40	8.44E-02		6.45E+01
		883.24		9.58	-2.34E+00		7.04E+01
		898.67		3.24	4.09E+01		2.14E+02
		926.00		16.80	-4.12E+02		3.79E+01
		946.18		15.00	-5.41E+01		4.28E+01
		980.48		5.15	1.57E+01		1.25E+02
		984.20		1.62	7.41E+01		3.96E+02
		1028.70		0.57	9.67E+01		1.10E+03
		1083.20		0.50	4.81E+02		1.25E+03
		1352.90		1.15	-7.45E+01		5.33E+02
		1393.90		2.06	-1.03E+03		3.02E+02
		1668.40		0.76	-2.16E+03		9.15E+02
		1693.80		0.69	7.19E+01		7.87E+02
	PA-234M	766.36		0.29	-3.40E+03	7.46E+02	3.45E+03
		811.00		0.51	-2.38E+03		1.41E+03
		1001.03		0.84	-3.38E+01		7.46E+02
	TH-234	63.29		4.84	-4.46E+02	8.27E+01	9.11E+01
		83.30		0.08	2.43E+04		7.71E+03
		92.59		5.58	-1.85E+02		8.27E+01
		112.81		0.28	1.04E+03		1.51E+03
	U-234	53.20	*	0.12	-1.01E+03	2.05E+03	2.05E+03
		120.90		0.03	-4.07E+03		1.54E+04
+	U-235	109.16		1.54	-1.38E+02	8.77E+00	2.66E+02
		143.76	*	10.96	3.89E+02		4.04E+01
		163.36		5.08	-4.39E+01		1.15E+02
		185.71	*	57.20	1.44E+02		8.77E+00
		194.94		0.63	-4.17E+03		9.33E+02
		202.11		1.08	1.03E+02		5.41E+02
		205.31		5.01	-1.41E+01		1.16E+02
+	NP-237	57.10		0.39	-1.40E+03	3.25E+01	1.06E+03
		86.48	*	12.40	8.60E+01		3.25E+01
		94.64	*	0.60	-1.73E+03		1.10E+03
		143.25	*	0.43	9.92E+03		1.03E+03
	NP-239	106.12		27.20	-1.59E+08	1.68E+08	1.68E+08
		209.75		3.42	-5.72E+08		1.90E+09
		228.18		10.76	-2.80E+09		5.72E+08
		277.60		14.38	-7.72E+09		4.44E+08
		334.31		2.07	-3.12E+09		3.14E+09
	AM-241	59.54		35.90	-1.44E+01	1.16E+01	1.16E+01
	CM-241	132.41		3.90	-9.10E+01	2.36E+01	4.50E+02
		165.01		3.40	-3.40E+02		5.49E+02
		205.88		2.67	-1.35E+02		6.95E+02

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CM-241	430.63		4.06	-1.23E+02	2.36E+01	4.77E+02
		463.27		1.23	-5.61E+02		1.36E+03
		471.80		71.30	-2.16E+00		2.36E+01
		636.88		1.53	4.07E+02		1.01E+03
+	AM-243	74.66	*	68.20	2.49E+01	6.72E+00	6.72E+00

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.60		10.42	1.12E+02	1.12E+02	-2.93E+01	5.58E+01
	NA-22	1274.53		99.94	6.47E+00	6.47E+00	-1.11E+01	3.19E+00
@	NA-24	1368.63		100.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
>@		2754.03		99.94	0.00E+00		0.00E+00	0.00E+00
	K-40	1460.83		10.67	6.39E+01	6.39E+01	-2.18E+00	3.16E+01
@	AR-41	1293.59		99.10	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	CR-51	320.08		9.86	2.12E+02	2.12E+02	-1.37E+02	1.05E+02
	MN-54	834.85		99.98	8.48E+00	8.48E+00	-2.82E+00	4.21E+00
	CO-56	846.77		99.93	9.95E+00	2.34E+00	-1.49E+01	4.93E+00
		977.37		1.44	7.30E+02		3.48E+01	3.61E+02
		1037.84		13.99	7.15E+01		6.16E+00	3.53E+01
		1175.10		2.28	4.55E+02		-1.80E+02	2.25E+02
		1238.28		67.56	3.13E+01		2.81E+02	1.56E+01
		1360.21		4.33	2.38E+02		6.47E+01	1.18E+02
		1771.35		15.69	2.13E+02		-1.02E+03	1.06E+02
		2015.18		3.08	5.96E+00		0.00E+00	0.00E+00
		2034.76		7.89	2.34E+00		0.00E+00	0.00E+00
@	MN-56	846.75		98.87	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		1810.72		27.19	1.00E+26		1.00E+26	1.00E+20
>@		2113.05		14.34	0.00E+00		0.00E+00	0.00E+00
	CO-57	122.06	*	85.60	5.64E+00	5.64E+00	5.79E+00	2.81E+00
		136.47		10.68	6.09E+01		-1.58E+02	3.03E+01
		692.41		0.16	3.60E+03		-1.68E+03	1.78E+03
	CO-58	810.78		99.45	1.24E+01	1.24E+01	-2.09E+01	6.16E+00
		863.96		0.68	1.64E+03		4.95E+01	8.11E+02
		1674.73		0.52	1.48E+03		-6.25E+03	7.23E+02
	FE-59	142.65		1.02	1.53E+03	2.71E+01	-1.96E+03	7.63E+02
		192.35		3.08	4.48E+02		-4.20E+03	2.23E+02
		1099.25		56.50	2.71E+01		5.30E+00	1.34E+01
		1291.60		43.20	3.24E+01		-1.81E+02	1.60E+01

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CO-60	1173.24		99.90	6.48E+00	6.40E+00	-2.66E+00	3.20E+00
	1332.50		99.98	6.40E+00		1.72E+00	3.16E+00
@ CU-64	1345.77		0.47	1.00E+26	1.00E+26	1.00E+26	1.00E+20
ZN-65	1115.55		50.60	3.97E+01	3.97E+01	-7.95E+01	1.98E+01
SE-75	66.05		1.12	6.71E+02	1.20E+01	4.19E+03	3.34E+02
	96.73		3.42	1.88E+02		5.61E+02	9.38E+01
	121.12		17.14	4.21E+01		-1.05E+01	2.10E+01
	136.00		58.27	1.33E+01		-1.10E+01	6.62E+00
	198.61		1.47	5.50E+02		1.37E+02	2.74E+02
	264.66		58.50	1.20E+01		-8.57E+01	5.99E+00
	279.54		24.79	3.02E+01		-3.24E+02	1.50E+01
	303.93		1.31	6.66E+02		-2.21E+04	3.31E+02
	400.66		11.37	8.61E+01		-1.20E+02	4.29E+01
RB-83	520.39		44.70	1.75E+01	1.75E+01	-1.79E+01	8.66E+00
	529.59		29.30	2.70E+01		-1.38E+01	1.34E+01
	552.59		15.96	4.99E+01		-1.69E+01	2.47E+01
@ BR-84	881.60		42.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1897.60		14.90	1.00E+26		1.00E+26	1.00E+20
KR-85	514.01		0.43	1.41E+03	1.41E+03	-2.50E+02	6.99E+02
@ KR-85M	151.20		75.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	304.87		14.00	1.00E+26		1.00E+26	1.00E+20
SR-85	514.01		95.70	1.13E+01	1.13E+01	-2.01E+00	5.61E+00
@ SR-85m	151.19		12.90	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	231.86		84.40	1.00E+26		1.00E+26	1.00E+20
RB-86	1077.00		8.64	5.34E+02	5.34E+02	-4.98E+02	2.64E+02
@ KR-87	402.59		49.60	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	673.83		1.89	1.00E+26		1.00E+26	1.00E+20
@	845.44		7.30	1.00E+26		1.00E+26	1.00E+20
@	1175.40		1.11	1.00E+26		1.00E+26	1.00E+20
@	1740.52		2.04	1.00E+26		1.00E+26	1.00E+20
@ KR-88	165.98		3.10	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	196.30		26.00	1.00E+26		1.00E+26	1.00E+20
@	362.23		2.25	1.00E+26		1.00E+26	1.00E+20
@	834.83		13.00	1.00E+26		1.00E+26	1.00E+20
@	985.78		1.52	1.00E+26		1.00E+26	1.00E+20
@	1141.33		1.28	1.00E+26		1.00E+26	1.00E+20
@	1179.51		1.00	1.00E+26		1.00E+26	1.00E+20
@	1250.67		1.12	1.00E+26		1.00E+26	1.00E+20
@	1369.50		1.48	1.00E+26		1.00E+26	1.00E+20
@	1518.39		2.15	1.00E+26		1.00E+26	1.00E+20
@	1529.77		10.90	1.00E+26		1.00E+26	1.00E+20
@ RB-88	898.03		14.04	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1836.01		21.40	1.00E+26		1.00E+26	1.00E+20
Y-88	898.04		93.68	1.06E+01	7.78E+00	1.43E+00	5.24E+00
	1836.06		99.24	7.78E+00		-1.99E+01	3.82E+00
NB-94x	702.62		97.90	6.04E+00	6.04E+00	-1.68E+00	3.00E+00
	871.09		99.90	6.58E+00		1.13E-01	3.26E+00
NB-95	765.81		99.81	3.03E+01	3.03E+01	-3.52E+01	1.51E+01
NB-95m	204.12		2.33	1.01E+07	1.10E+06	7.40E+05	5.01E+06
	235.69	*	24.80	1.10E+06		-3.22E+06	5.51E+05
ZR-95	724.20		44.17	2.29E+01	1.84E+01	-3.19E+00	1.13E+01
	756.73		54.46	1.84E+01		2.18E+00	9.14E+00
NB-96	460.04		26.62	2.35E+18	6.59E+17	8.99E+17	1.17E+18

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
NB-96	568.87		57.97	1.07E+18	6.59E+17	5.39E+17	5.31E+17
	778.22		96.45	6.59E+17		-1.08E+19	3.26E+17
	849.93		20.40	3.52E+18		-2.46E+18	1.74E+18
	1200.23		19.96	3.61E+18		-6.42E+18	1.78E+18
MO-99	140.51		4.52	1.42E+08	4.88E+07	-4.19E+08	7.09E+07
	181.06		6.08	1.06E+08		-7.16E+08	5.29E+07
	366.42		1.20	4.56E+08		-2.46E+08	2.27E+08
	739.50		12.13	4.88E+07		3.57E+07	2.42E+07
	777.92		4.28	1.40E+08		-2.29E+09	6.93E+07
@ TC-99M	140.51		89.06	1.00E+26	1.00E+26	1.00E+26	1.00E+20
RU-103	443.80		3.27	4.43E+02	1.45E+01	-1.13E+02	2.20E+02
	497.08		90.90	1.45E+01		-1.21E+01	7.22E+00
	610.33		5.75	1.09E+03		-3.75E+03	5.45E+02
RHRU-106	621.93		9.93	5.25E+01	5.25E+01	-1.32E+01	2.60E+01
	1050.41		1.56	4.62E+02		-2.33E+01	2.29E+02
AG-108M	433.94		90.50	6.05E+00	6.05E+00	-3.19E+00	3.00E+00
	614.28		89.90	2.38E+01		-4.51E+02	1.19E+01
	722.94		90.90	6.14E+00		-7.04E-01	3.04E+00
CD-109	88.03	*	3.61	1.21E+02	1.21E+02	3.21E+02	6.05E+01
AG-110M	116.48		1.36	4.36E+02	5.92E+00	-1.66E+02	2.18E+02
	446.81		3.72	1.70E+02		-7.48E+01	8.42E+01
	620.36		2.79	2.01E+02		-6.76E+03	9.98E+01
	657.76		94.00	5.92E+00		-3.15E+01	2.93E+00
	677.62		10.28	5.43E+01		-3.04E+00	2.69E+01
	687.02		6.39	8.96E+01		1.06E+01	4.44E+01
	706.68		16.32	4.26E+01		-2.35E+01	2.11E+01
	744.28		4.70	1.32E+02		7.04E+01	6.56E+01
	763.94		22.14	4.67E+01		-1.02E+02	2.32E+01
	818.03		7.29	9.39E+01		-3.38E+01	4.65E+01
	884.68		72.19	1.09E+01		-5.37E-02	5.41E+00
	937.49		34.13	3.31E+01		-1.07E+02	1.64E+01
	1384.30		24.12	5.35E+01		1.85E+02	2.65E+01
	1475.79		3.97	2.06E+02		-3.88E+00	1.01E+02
	1505.04		12.95	9.56E+01		-4.83E+01	4.74E+01
	1562.30		1.02	7.58E+02		-1.75E+02	3.74E+02
SN-113	255.06		1.82	4.97E+02	1.24E+01	2.96E+03	2.48E+02
	391.69		64.00	1.24E+01		-6.59E+00	6.15E+00
IN-114	190.27		15.40	8.59E+01	8.59E+01	-5.30E+02	4.28E+01
	558.43		4.40	2.47E+02		-9.62E+01	1.23E+02
	725.24		4.40	2.66E+02		-7.46E+01	1.32E+02
SB-122	564.24		69.30	1.06E+07	1.06E+07	7.27E+05	5.23E+06
I-124	602.72		60.50	8.49E+04	8.49E+04	-5.02E+04	4.21E+04
	722.78		9.98	5.23E+05		-7.14E+04	2.59E+05
	1509.49		2.99	3.36E+06		1.30E+07	1.67E+06
	1691.02		10.40	5.40E+05		1.92E+05	2.66E+05
SB-124	602.73		97.80	1.05E+01	1.05E+01	-6.23E+00	5.23E+00
	645.85		7.38	1.20E+02		-5.25E+01	5.93E+01
	709.32		1.35	7.62E+02		-8.42E+02	3.78E+02
	713.78		2.27	4.21E+02		-8.11E+02	2.09E+02
	722.79		10.76	9.73E+01		-1.33E+01	4.82E+01
	968.20		1.89	6.83E+02		-4.65E+02	3.38E+02
	1045.13		1.84	6.15E+02		-2.41E+02	3.04E+02
	1325.51		1.62	7.00E+02		-3.84E+02	3.45E+02

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	SB-124	1355.18		1.04	1.13E+03	1.05E+01	2.82E+02	5.57E+02
		1368.16		2.62	4.45E+02		-2.09E+03	2.19E+02
		1436.56		1.23	1.00E+03		-2.62E+02	4.93E+02
		1690.98		47.30	2.38E+01		8.49E+00	1.17E+01
	I-125	30.98		20.10	7.56E+01	7.56E+01	-1.76E+02	3.77E+01
		35.49		6.68	1.99E+02		9.49E+02	9.93E+01
+	SB-125	176.31		6.82	8.68E+01	1.95E+01	-8.31E+01	4.32E+01
		380.45		1.52	3.50E+02		-1.57E+02	1.74E+02
		427.88	*	29.60	1.95E+01		3.63E+01	9.67E+00
		463.36		10.49	5.17E+01		-2.13E+01	2.57E+01
		600.60		17.86	3.12E+01		-3.04E+01	1.55E+01
		606.72		5.03	4.87E+02		-3.56E+01	2.43E+02
		635.95		11.31	4.43E+01		1.55E+01	2.19E+01
		671.45		1.80	2.84E+02		-1.14E+03	1.41E+02
	@ XE-125	188.42		54.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	243.38		30.10	1.00E+26		1.00E+26	1.00E+20
+	I-126	388.63	*	34.10	2.23E+02	2.23E+02	4.29E+02	1.11E+02
	SB-126	414.80		83.30	1.56E+02	1.09E+02	-2.27E+02	7.75E+01
		666.30		99.60	1.39E+02		6.04E+02	6.89E+01
		695.00		99.60	1.09E+02		-1.68E+02	5.39E+01
		697.00		28.90	3.78E+02		-5.38E+02	1.87E+02
		720.50		53.80	2.20E+02		-3.25E+01	1.09E+02
		856.70		17.60	7.90E+02		2.33E+01	3.92E+02
	I-129	39.58		7.45	6.93E+01	6.93E+01	-1.42E+02	3.45E+01
	@ I-130	418.01		34.15	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	536.09		99.00	1.00E+26		1.00E+26	1.00E+20
	@	668.54		96.10	1.00E+26		1.00E+26	1.00E+20
	@	739.48		82.30	1.00E+26		1.00E+26	1.00E+20
	@	1157.47		11.30	1.00E+26		1.00E+26	1.00E+20
	I-131	284.30	*	6.14	2.85E+04	7.11E+02	-7.83E+05	1.42E+04
		364.49		81.70	7.11E+02		-3.07E+02	3.54E+02
		636.99		7.17	7.94E+03		3.61E+03	3.93E+03
		722.91		1.77	3.71E+04		-4.26E+03	1.84E+04
	XE-131M	163.93		1.91	7.72E+03	7.72E+03	-3.30E+03	3.85E+03
	TE-132	111.76		1.74	3.75E+07	9.61E+05	3.00E+07	1.87E+07
		116.30		1.96	4.02E+07		-1.53E+07	2.01E+07
		228.16		88.00	9.61E+05		-4.70E+06	4.79E+05
+	BA-133	53.16	*	2.20	1.16E+02	1.28E+01	-5.70E+01	5.74E+01
		79.62		2.62	2.26E+02		-3.55E+02	1.13E+02
		81.00	*	34.06	1.28E+01		2.81E+01	6.36E+00
		160.61		0.64	9.37E+02		-6.88E+01	4.67E+02
		223.23		0.45	1.22E+03		-8.77E+02	6.06E+02
		276.40		7.16	8.18E+01		-1.25E+03	4.07E+01
		302.85	*	18.33	2.11E+01		7.22E+01	1.05E+01
		356.02		62.05	1.92E+01		-4.87E+02	9.59E+00
		383.85		8.94	6.00E+01		-6.07E+00	2.98E+01
	I-133	529.87		87.00	8.51E+19	8.51E+19	-4.34E+19	4.22E+19
		875.33		4.51	2.14E+21		-2.30E+20	1.06E+21
	CS-134	475.35		1.47	3.71E+02	6.92E+00	-2.21E+02	1.84E+02
		563.23		8.38	6.42E+01		-1.48E+01	3.19E+01
		569.32		15.43	3.58E+01		9.29E+00	1.77E+01
		604.70		97.56	1.26E+01		-2.45E+00	6.29E+00
		795.84		85.44	6.92E+00		-2.95E+01	3.43E+00

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-134	801.93	8.73	8.19E+01	6.92E+00	-1.66E+02	4.06E+01
	1038.57	1.00	6.40E+02		7.61E+00	3.16E+02
	1167.94	1.80	3.70E+02		-6.62E+02	1.83E+02
	1365.15	3.04	2.15E+02		-5.74E+01	1.06E+02
@ I-134	405.45	7.35	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	540.83	7.60	1.00E+26		1.00E+26	1.00E+20
@	595.36	11.20	1.00E+26		1.00E+26	1.00E+20
@	621.79	10.60	1.00E+26		1.00E+26	1.00E+20
@	677.34	7.80	1.00E+26		1.00E+26	1.00E+20
@	847.03	95.40	1.00E+26		1.00E+26	1.00E+20
@	884.09	64.90	1.00E+26		1.00E+26	1.00E+20
@	1072.55	15.00	1.00E+26		1.00E+26	1.00E+20
@	1136.16	9.20	1.00E+26		1.00E+26	1.00E+20
CS-135	787.20	100.00	6.87E+00	6.36E+00	2.16E+01	3.41E+00
	846.10	95.90	6.36E+00		-8.52E+00	3.15E+00
@ I-135	417.63	3.55	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	546.56	7.20	1.00E+26		1.00E+26	1.00E+20
@	836.80	6.73	1.00E+26		1.00E+26	1.00E+20
@	1038.76	8.00	1.00E+26		1.00E+26	1.00E+20
@	1124.00	3.64	1.00E+26		1.00E+26	1.00E+20
@	1131.51	22.74	1.00E+26		1.00E+26	1.00E+20
@	1260.41	28.90	1.00E+26		1.00E+26	1.00E+20
@	1457.56	8.73	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.62	1.00E+26		1.00E+26	1.00E+20
@	1706.46	4.13	1.00E+26		1.00E+26	1.00E+20
@	1791.20	7.77	1.00E+26		1.00E+26	1.00E+20
@ XE-135	249.79	90.20	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	608.18	2.90	1.00E+26		1.00E+26	1.00E+20
@ XE-135M	526.56	80.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
CS-136	66.88	4.80	2.33E+03	1.07E+02	3.03E+04	1.16E+03
	86.36	5.20	2.03E+03		1.20E+04	1.01E+03
	153.25	5.77	2.08E+03		9.01E+03	1.04E+03
	163.92	3.40	3.14E+03		-1.34E+03	1.56E+03
	176.60	10.00	1.04E+03		-1.02E+03	5.19E+02
	273.65	11.10	1.29E+03		1.03E+04	6.45E+02
	340.55	42.30	2.50E+02		3.91E+02	1.24E+02
	818.51	100.00	1.07E+02		-1.63E+01	5.32E+01
	1048.07	80.00	1.45E+02		-4.61E+01	7.19E+01
	1235.36	20.10	1.17E+03		-3.79E+03	5.81E+02
CS-137	661.66	85.10	6.99E+00	6.99E+00	-2.19E+01	3.47E+00
@ CS-138	138.10	1.49	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	227.76	1.51	1.00E+26		1.00E+26	1.00E+20
@	408.98	4.66	1.00E+26		1.00E+26	1.00E+20
@	462.80	30.70	1.00E+26		1.00E+26	1.00E+20
@	547.00	10.76	1.00E+26		1.00E+26	1.00E+20
@	871.80	5.11	1.00E+26		1.00E+26	1.00E+20
@	1009.78	29.80	1.00E+26		1.00E+26	1.00E+20
@	1147.22	1.24	1.00E+26		1.00E+26	1.00E+20
@	1343.59	1.14	1.00E+26		1.00E+26	1.00E+20
@	1435.86	76.30	1.00E+26		1.00E+26	1.00E+20
LA-138	788.74	33.60	2.06E+01	9.86E+00	-1.42E+01	1.02E+01
	1435.80	66.40	9.86E+00		-1.45E+00	4.86E+00
@ BA-139	165.86	23.60	1.00E+26	1.00E+26	1.00E+26	1.00E+20

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CE-139	165.85		79.90	9.59E+00	9.59E+00	-5.80E+00	4.78E+00
BA-140	162.66		6.21	1.89E+03	4.36E+02	-6.19E+02	9.43E+02
	304.85		4.30	2.72E+03		-2.67E+04	1.35E+03
	423.72		3.10	4.10E+03		-2.00E+03	2.04E+03
	437.58		1.93	5.56E+03		-7.12E+03	2.76E+03
	537.26		24.39	4.36E+02		-1.25E+02	2.17E+02
LA-140	328.76		20.32	2.27E+11	6.05E+10	2.10E+11	1.13E+11
	432.49		2.90	1.48E+12		-5.28E+11	7.35E+11
	487.02		45.50	9.23E+10		3.18E+10	4.58E+10
	751.64		4.33	9.71E+11		-4.19E+11	4.81E+11
	815.77		23.30	1.88E+11		-7.26E+11	9.31E+10
	867.85		5.50	9.06E+11		-3.44E+11	4.49E+11
	919.55		2.66	1.89E+12		-9.21E+11	9.38E+11
	925.19		6.90	7.06E+11		-7.04E+12	3.49E+11
	1596.21		95.40	6.05E+10		-3.67E+10	2.99E+10
CE-141	145.44		48.20	4.48E+01	4.48E+01	-6.07E+01	2.23E+01
CE-144	80.12		1.36	4.54E+02	5.68E+01	-4.05E+03	2.26E+02
	133.51		11.09	5.68E+01		-5.22E+00	2.83E+01
PM-144	476.78		41.98	1.40E+01	5.45E+00	-7.00E+00	6.96E+00
	618.01		98.59	5.45E+00		-8.29E+02	2.70E+00
	694.00		0.55	1.01E+03		-9.58E+02	5.01E+02
	696.49		99.49	5.63E+00		-9.17E+00	2.79E+00
	778.57		1.51	4.00E+02		-6.50E+03	1.98E+02
	814.14		0.55	1.14E+03		-4.44E+03	5.66E+02
PM-146	146.20		0.22	3.09E+03	8.32E+00	-8.04E+03	1.54E+03
	453.88		66.00	8.32E+00		-6.84E+00	4.13E+00
	589.80		0.43	1.21E+03		-1.93E+03	6.01E+02
	633.25		1.12	4.31E+02		-1.52E+01	2.14E+02
	735.93		22.80	2.25E+01		-2.17E+01	1.12E+01
	747.24		17.71	3.03E+01		-3.22E+00	1.50E+01
ND-147	91.11		27.90	5.25E+02	5.25E+02	-4.00E+03	2.62E+02
	319.41		1.95	8.54E+03		-4.97E+03	4.25E+03
	398.15		0.87	2.15E+04		-6.58E+04	1.07E+04
	439.89		1.20	1.44E+04		-8.75E+03	7.17E+03
	531.02		13.09	1.28E+03		-4.75E+02	6.35E+02
EU-152	121.78	*	28.42	1.49E+01	1.49E+01	1.53E+01	7.41E+00
	244.70		7.49	1.13E+02		-1.48E+02	5.64E+01
	295.94	*	0.44	9.18E+02		8.28E+04	4.56E+02
	344.28		26.58	2.01E+01		-1.94E+03	1.00E+01
	411.12		2.23	2.69E+02		-6.49E+02	1.34E+02
	443.98		3.09	1.78E+02		-3.17E+01	8.87E+01
	688.67		0.83	5.93E+02		-1.37E+02	2.94E+02
	778.90		12.96	4.23E+01		-5.16E+02	2.09E+01
	867.39		4.15	1.57E+02		-4.84E+01	7.79E+01
	964.13	*	14.50	3.87E+01		3.81E+01	1.91E+01
	1005.28		0.65	9.61E+02		-1.51E+02	4.75E+02
	1085.87		10.16	6.23E+01		2.69E+01	3.08E+01
	1089.70		1.71	3.68E+02		-7.12E+01	1.82E+02
	1112.12		13.54	4.81E+01		-4.00E+02	2.38E+01
	1212.95		1.40	4.88E+02		-6.68E+01	2.41E+02
	1299.12		1.63	3.78E+02		1.03E+02	1.87E+02
	1408.01	*	20.87	2.13E+01		2.12E+02	1.04E+01
GD-153	69.67		2.54	2.69E+02	1.74E+01	1.20E+03	1.34E+02

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	GD-153	97.43		30.20	1.74E+01	1.74E+01	1.42E+01	8.67E+00
		103.18		21.44	2.22E+01		-1.58E+01	1.11E+01
	EU-154	123.07	*	40.78	1.04E+01	1.04E+01	1.07E+01	5.19E+00
		247.93		6.95	7.70E+01		-7.06E+02	3.83E+01
		444.49	*	0.56	8.27E+02		9.63E+02	4.11E+02
		582.10		0.89	6.31E+02		8.39E+02	3.13E+02
		591.76		4.99	1.04E+02		-7.67E+01	5.16E+01
		692.42		1.80	2.76E+02		-1.29E+02	1.37E+02
		723.30		20.22	2.80E+01		-3.21E+00	1.39E+01
		756.80		4.57	1.22E+02		1.45E+01	6.06E+01
		815.53		0.52	1.10E+03		-4.28E+03	5.45E+02
		845.39		0.59	1.06E+03		-1.38E+03	5.25E+02
		873.19		12.27	5.42E+01		-7.00E+00	2.69E+01
		892.78		0.52	1.34E+03		1.60E+02	6.64E+02
		904.08		0.90	7.85E+02		-3.07E+01	3.89E+02
		996.26		10.59	6.01E+01		2.81E+00	2.98E+01
		1004.72		18.00	3.49E+01		-4.96E+00	1.73E+01
		1246.15		0.87	8.71E+02		-5.16E+03	4.31E+02
		1274.44		35.19	1.79E+01		-3.07E+01	8.81E+00
		1494.05		0.70	1.08E+03		-2.66E+02	5.35E+02
		1596.49	*	1.80	2.27E+02		2.70E+02	1.11E+02
	EU-155	45.30		1.32	3.84E+02	1.34E+01	-1.25E+02	1.91E+02
		60.01		1.13	3.78E+02		-5.07E+02	1.88E+02
		86.54	*	30.70	1.34E+01		3.55E+01	6.69E+00
		105.31		21.15	1.97E+01		-1.37E+01	9.79E+00
	W-187	72.00		11.10	2.59E+18	1.14E+18	-5.28E+19	1.29E+18
		134.25		8.80	4.02E+18		8.15E+17	2.01E+18
		479.55		21.80	1.65E+18		-3.98E+17	8.18E+17
		618.26		6.28	4.91E+18		-7.47E+20	2.43E+18
		625.52		1.09	2.74E+19		-1.52E+19	1.36E+19
		685.73		27.30	1.14E+18		8.18E+15	5.65E+17
		772.89		4.12	1.53E+19		-6.23E+19	7.60E+18
	IR-192	295.96		28.66	7.32E+01	1.08E+01	1.93E+03	3.65E+01
		308.46		30.00	2.91E+01		-5.03E+01	1.45E+01
		316.51		82.81	1.08E+01		7.15E+00	5.36E+00
		468.07		47.83	1.80E+01		-1.10E+01	8.96E+00
		588.58		4.51	1.92E+02		-2.58E+02	9.51E+01
		604.41		8.23	2.39E+02		-4.64E+01	1.19E+02
		612.47		5.31	7.51E+02		-8.96E+03	3.75E+02
	TL-201	135.34		2.56	6.39E+07	1.69E+07	-6.62E+06	3.19E+07
		167.43		10.00	1.69E+07		-5.46E+06	8.45E+06
	HG-203	279.20		81.46	1.52E+01	1.52E+01	-1.83E+02	7.58E+00
	TL-208	277.36		6.31	9.02E+01	6.57E+00	-1.53E+03	4.49E+01
		510.77		22.60	2.66E+01		-5.27E+00	1.32E+01
		583.19		84.50	6.57E+00		-1.32E+00	3.26E+00
		763.13		1.81	3.58E+02		-1.36E+03	1.78E+02
		860.56		12.42	5.24E+01		1.84E+01	2.60E+01
+	PB-210	46.54	*	4.25	8.46E+01	8.46E+01	2.47E+02	4.21E+01
	BI-211	351.06		12.91	1.42E+02	1.42E+02	5.87E+03	7.07E+01
+	PB-211	404.85	*	3.78	1.13E+02	1.13E+02	5.84E+02	5.63E+01
		427.09	*	1.76	3.15E+02		5.88E+02	1.57E+02
		704.64		0.46	1.28E+03		2.53E+03	6.36E+02
		766.51		0.62	1.64E+03		-1.61E+03	8.14E+02

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	PB-211	832.01	*	3.52	1.36E+02	1.13E+02	2.98E+02	6.72E+01
	BI-212	727.33		6.58	7.83E+01	7.83E+01	-2.73E+01	3.88E+01
		785.37		1.10	6.22E+02		-2.88E+02	3.09E+02
		1078.62		0.56	1.03E+03		-1.21E+03	5.10E+02
		1620.50		1.49	3.81E+02		-1.58E+02	1.87E+02
	PB-212	115.18		0.59	7.18E+02	1.78E+01	1.46E+02	3.58E+02
		238.63		43.30	1.78E+01		6.00E+01	8.86E+00
		300.09		3.28	2.05E+02		-6.52E+03	1.02E+02
+	BI-214	609.31	*	44.80	1.23E+01	1.23E+01	1.90E+03	6.12E+00
		665.45	*	1.29	2.61E+02		2.15E+03	1.29E+02
		768.36	*	4.80	1.05E+02		2.04E+03	5.22E+01
		806.17	*	1.22	3.88E+02		1.97E+03	1.92E+02
		934.06	*	3.03	1.39E+02		1.89E+03	6.85E+01
		1120.29	*	14.80	3.61E+01		1.95E+03	1.78E+01
		1155.19	*	1.64	2.71E+02		1.89E+03	1.33E+02
		1207.68	*	0.49	9.88E+02		1.62E+03	4.86E+02
		1238.11	*	5.86	8.93E+01		1.97E+03	4.40E+01
		1280.96	*	1.44	3.49E+02		1.96E+03	1.72E+02
		1377.67	*	3.92	1.14E+02		1.96E+03	5.57E+01
		1385.31	*	0.89	4.99E+02		1.85E+03	2.45E+02
		1401.50	*	1.55	2.82E+02		1.62E+03	1.38E+02
		1407.98	*	2.80	1.57E+02		1.57E+03	7.72E+01
		1415.80		0.48	1.50E+03		-8.84E+03	7.41E+02
		1509.23	*	2.12	3.10E+02		1.85E+03	1.53E+02
		1583.22	*	0.70	5.91E+02		1.82E+03	2.89E+02
		1661.28	*	1.14	2.94E+02		1.73E+03	1.43E+02
		1729.59	*	2.88	1.19E+02		1.99E+03	5.77E+01
		1764.49	*	15.36	2.38E+01		1.93E+03	1.16E+01
		1847.42	*	2.04	2.20E+02		1.65E+03	1.08E+02
+	PB-214	53.23	*	1.11	2.27E+02	1.61E+01	-1.12E+02	1.13E+02
		241.98	*	7.50	8.33E+01		1.19E+03	4.15E+01
		258.79	*	0.55	7.51E+02		1.75E+03	3.73E+02
		295.21	*	18.50	2.17E+01		1.95E+03	1.08E+01
		351.92	*	35.80	1.61E+01		2.12E+03	8.00E+00
		785.91	*	0.85	5.65E+02		2.45E+03	2.79E+02
		839.03	*	0.63	7.21E+02		1.06E+01	3.56E+02
+	RN-219	130.59		0.12	4.51E+03	3.76E+01	-3.26E+03	2.25E+03
		271.23	*	10.80	3.76E+01		5.14E+02	1.87E+01
		401.81	*	6.37	6.70E+01		5.14E+02	3.32E+01
	RN-220	549.73		0.11	4.73E+03	4.73E+03	1.90E+03	2.35E+03
+	RA-223	122.32	*	1.19	3.53E+02	2.96E+01	3.62E+02	1.76E+02
		144.23	*	3.22	1.38E+02		1.33E+03	6.85E+01
		154.21	*	5.62	1.07E+02		5.29E+02	5.35E+01
		158.63	*	0.69	7.82E+02		-1.96E+03	3.90E+02
		179.54		0.15	3.85E+03		-3.45E+04	1.92E+03
		269.46	*	13.70	2.96E+01		5.06E+02	1.47E+01
		288.18		0.16	3.56E+03		-1.61E+05	1.77E+03
		323.87	*	3.93	1.45E+02		-6.80E+01	7.23E+01
		328.40		0.21	2.93E+03		6.83E+03	1.46E+03
		338.28		2.79	2.11E+02		5.39E+00	1.05E+02
		342.90		0.22	2.48E+03		-2.60E+04	1.23E+03
		346.80		0.18	3.05E+03		-3.12E+05	1.52E+03
		371.68		0.48	1.06E+03		2.90E+02	5.28E+02

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	RA-224	240.99		3.97	2.15E+02	2.15E+02	2.52E+03	1.07E+02
	RA-226	186.10	*	3.50	1.43E+02	1.43E+02	2.36E+03	7.14E+01
+	TH-227	50.13	*	8.00	3.27E+01	3.27E+01	-2.90E+01	1.62E+01
		79.72		1.89	3.10E+02		-4.87E+02	1.55E+02
		93.93	*	1.37	4.82E+02		-7.57E+02	2.41E+02
		210.65	*	1.10	4.93E+02		1.30E+02	2.46E+02
		235.97	*	12.70	5.39E+01		-1.57E+02	2.68E+01
		256.25	*	7.01	5.92E+01		4.88E+02	2.94E+01
		286.12		1.54	3.84E+02		-6.73E+02	1.91E+02
		300.00	*	2.67	1.55E+02		8.91E+02	7.69E+01
		304.51		1.23	4.94E+02		-1.18E+04	2.46E+02
		329.85	*	2.69	5.30E+02		-4.63E+03	2.64E+02
		334.38		1.05	5.48E+02		-5.44E+02	2.73E+02
	AC-228	99.50		1.28	3.33E+02	2.61E+01	-4.44E+02	1.66E+02
		129.07		2.45	2.18E+02		-2.19E+02	1.09E+02
		153.98		0.74	8.89E+02		4.37E+03	4.43E+02
		209.25		3.88	1.50E+02		-2.95E+01	7.45E+01
		270.24		3.43	2.49E+02		3.59E+03	1.24E+02
		327.90		3.06	2.08E+02		8.88E+02	1.04E+02
		332.37		0.40	1.54E+03		1.12E+03	7.69E+02
		338.32		11.25	5.22E+01		1.34E+00	2.60E+01
		409.46		1.94	3.42E+02		-4.29E+02	1.70E+02
		463.01		4.44	1.18E+02		-4.84E+01	5.84E+01
		508.96		0.47	1.27E+03		-6.72E+02	6.32E+02
		562.50		0.87	5.86E+02		-1.75E+02	2.91E+02
		755.32		1.00	5.53E+02		3.50E+02	2.74E+02
		772.29		1.50	6.74E+02		-2.13E+03	3.35E+02
		782.14		0.50	1.31E+03		-1.91E+03	6.52E+02
		794.95		4.34	1.29E+02		-4.11E+02	6.39E+01
		830.49		0.55	1.30E+03		-9.86E+02	6.45E+02
		835.71		1.68	4.51E+02		-1.49E+02	2.24E+02
		840.38		0.94	7.03E+02		-9.15E+02	3.48E+02
		904.20		0.78	8.95E+02		-3.50E+01	4.44E+02
		911.21		26.60	2.61E+01		1.58E+01	1.29E+01
		964.77		5.11	1.35E+02		-2.48E+01	6.67E+01
		968.97		16.20	4.21E+01		-3.23E+01	2.09E+01
		1247.08		0.50	1.25E+03		-8.87E+03	6.19E+02
		1459.14		0.80	8.43E+02		-3.10E+02	4.16E+02
		1495.91		0.89	8.54E+02		-3.32E+01	4.22E+02
		1580.54		0.61	1.26E+03		-1.60E+03	6.24E+02
		1588.21		3.27	2.39E+02		-2.53E+02	1.18E+02
		1630.63		1.60	3.39E+02		1.64E+01	1.67E+02
+	TH-228	84.37	*	1.23	3.40E+02	3.40E+02	2.11E+03	1.69E+02
		215.99		0.26	2.12E+03		-3.05E+02	1.05E+03
	TH-229	75.09		0.61	1.08E+03	1.33E+02	1.01E+04	5.37E+02
		86.35		3.90	1.48E+02		8.74E+02	7.40E+01
		124.60		1.43	3.74E+02		-5.74E+01	1.87E+02
		136.99		1.18	4.81E+02		-1.83E+03	2.40E+02
		148.15		0.88	6.77E+02		-2.73E+03	3.37E+02
		154.34		0.77	8.54E+02		4.09E+03	4.26E+02
		156.41		1.19	5.58E+02		3.07E+03	2.78E+02
		193.51		4.41	1.33E+02		-1.22E+03	6.63E+01
		204.69		0.60	9.70E+02		-1.29E+02	4.83E+02

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TH-229	210.85		2.77	2.07E+02	1.33E+02	-5.25E+01	1.03E+02
+	PA-231	283.69	*	1.70	8.73E+02	1.68E+02	-2.40E+04	4.36E+02
		300.07	*	2.46	1.68E+02		9.67E+02	8.35E+01
		302.65	*	2.20	1.74E+02		5.95E+02	8.65E+01
		330.06	*	1.40	1.02E+03		-8.91E+03	5.08E+02
+	TH-231	81.23	*	0.89	4.84E+02	6.33E+01	1.07E+03	2.41E+02
		84.21	*	6.60	6.33E+01		3.93E+02	3.16E+01
		89.95	*	0.94	4.18E+02		1.41E+02	2.08E+02
	TH-232	63.81		0.27	1.64E+03	1.64E+03	-6.40E+03	8.18E+02
	U-232	57.78		0.20	2.07E+03	2.07E+03	-3.21E+03	1.03E+03
		129.08		0.07	7.76E+03		-7.78E+03	3.87E+03
	PA-233	75.35		1.39	4.72E+02	1.37E+01	4.45E+03	2.35E+02
		86.81		1.97	2.73E+02		2.16E+02	1.36E+02
		103.97		0.87	4.68E+02		-3.88E+02	2.33E+02
		271.48		0.33	2.63E+03		3.97E+04	1.31E+03
		300.34		6.62	1.02E+02		-3.23E+03	5.07E+01
		312.17		38.60	1.37E+01		-1.27E+00	6.81E+00
		340.81		4.47	1.30E+02		2.02E+02	6.45E+01
		375.45		0.68	7.62E+02		4.34E+02	3.79E+02
		398.62		1.39	4.48E+02		-1.06E+03	2.23E+02
		415.76		1.75	3.45E+02		-8.02E+01	1.72E+02
	U-233	42.44		0.09	5.51E+03	5.51E+03	-2.60E+04	2.74E+03
		54.70		0.02	2.34E+04		-8.53E+03	1.16E+04
		97.13		0.02	2.24E+04		1.83E+04	1.12E+04
	PA-234	62.70		1.55	2.83E+02	3.01E+01	-1.67E+03	1.41E+02
		99.86		3.19	1.32E+02		-2.32E+02	6.60E+01
		125.46		0.78	6.87E+02		-2.06E+02	3.43E+02
		131.30		18.00	3.01E+01		-1.36E+01	1.50E+01
		140.50		0.81	7.16E+02		-2.11E+03	3.57E+02
		152.71		5.97	1.10E+02		3.29E+02	5.46E+01
		159.48	*	0.65	8.30E+02		-2.08E+03	4.14E+02
		170.85		0.50	1.15E+03		-1.37E+02	5.73E+02
		186.15	*	1.76	2.85E+02		4.68E+03	1.42E+02
		193.73		0.49	1.20E+03		-1.06E+04	5.97E+02
		200.97		0.90	6.49E+02		-2.34E+01	3.23E+02
		203.12		1.23	4.76E+02		2.02E+00	2.37E+02
		227.00		9.99	5.45E+01		-2.24E+01	2.71E+01
		245.37		0.75	1.05E+03		-2.28E+03	5.24E+02
		249.22		2.47	2.14E+02		-2.93E+03	1.06E+02
		272.28	*	1.08	3.76E+02		5.14E+03	1.87E+02
		293.79		2.99	4.16E+02		1.10E+04	2.08E+02
		330.40	*	0.77	1.85E+03		-1.62E+04	9.24E+02
		369.50		2.47	2.05E+02		5.11E+01	1.02E+02
		372.00		1.21	4.22E+02		1.49E+02	2.10E+02
		458.68		1.13	4.86E+02		1.38E+02	2.41E+02
		506.75		1.29	4.24E+02		-5.69E+02	2.10E+02
		513.40		1.10	5.49E+02		-5.64E+01	2.73E+02
		521.40		0.74	6.74E+02		-8.21E+02	3.34E+02
		565.20		1.03	5.05E+02		1.38E+02	2.51E+02
		569.32		11.80	4.45E+01		1.15E+01	2.21E+01
		602.60		0.54	1.01E+03		-5.97E+02	5.02E+02
		663.90		0.54	1.19E+03		-2.05E+03	5.91E+02
		666.50	*	1.16	2.90E+02		2.39E+03	1.43E+02

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	PA-234	669.70		0.99	6.48E+02	3.01E+01	-1.45E+03	3.22E+02
		692.60		1.24	3.96E+02		-1.85E+02	1.96E+02
		699.03		3.61	1.52E+02		-1.38E+02	7.53E+01
		705.90		2.27	2.62E+02		-1.42E+02	1.30E+02
		730.90		0.63	8.14E+02		3.20E+01	4.03E+02
		733.39		6.90	7.33E+01		-4.12E+01	3.63E+01
		738.00		1.15	4.50E+02		-7.16E+01	2.23E+02
		742.81		2.06	2.60E+02		2.20E+02	1.29E+02
		755.00		1.22	4.54E+02		3.50E+02	2.25E+02
		780.40		0.90	6.24E+02		-1.56E+03	3.09E+02
		786.27	*	1.19	4.04E+02		1.75E+03	2.00E+02
		794.90		1.34	4.18E+02		-1.33E+03	2.07E+02
		796.10		2.58	2.18E+02		-9.28E+02	1.08E+02
		805.52		3.14	2.29E+02		-1.68E+02	1.13E+02
		819.20		1.88	3.12E+02		-3.14E+01	1.55E+02
		824.65		3.12	1.95E+02		-2.40E+02	9.66E+01
		831.50	*	4.12	1.16E+02		2.54E+02	5.74E+01
		876.00		2.52	2.64E+02		6.93E-01	1.31E+02
		880.50		10.40	6.45E+01		8.44E-02	3.20E+01
		883.24		9.58	7.04E+01		-2.34E+00	3.49E+01
		898.67		3.24	2.14E+02		4.09E+01	1.06E+02
		926.00		16.80	3.79E+01		-4.12E+02	1.88E+01
		946.18		15.00	4.28E+01		-5.41E+01	2.12E+01
		980.48		5.15	1.25E+02		1.57E+01	6.17E+01
		984.20		1.62	3.96E+02		7.41E+01	1.96E+02
		1028.70		0.57	1.10E+03		9.67E+01	5.45E+02
		1083.20		0.50	1.25E+03		4.81E+02	6.16E+02
		1352.90		1.15	5.33E+02		-7.45E+01	2.63E+02
		1393.90		2.06	3.02E+02		-1.03E+03	1.49E+02
		1668.40		0.76	9.15E+02		-2.16E+03	4.51E+02
		1693.80		0.69	7.87E+02		7.19E+01	3.86E+02
	PA-234M	766.36		0.29	3.45E+03	7.46E+02	-3.40E+03	1.72E+03
		811.00		0.51	1.41E+03		-2.38E+03	7.00E+02
		1001.03		0.84	7.46E+02		-3.38E+01	3.69E+02
	TH-234	63.29		4.84	9.11E+01	8.27E+01	-4.46E+02	4.54E+01
		83.30		0.08	7.71E+03		2.43E+04	3.85E+03
		92.59		5.58	8.27E+01		-1.85E+02	4.12E+01
		112.81		0.28	1.51E+03		1.04E+03	7.52E+02
	U-234	53.20	*	0.12	2.05E+03	2.05E+03	-1.01E+03	1.02E+03
		120.90		0.03	1.54E+04		-4.07E+03	7.68E+03
+	U-235	109.16		1.54	2.66E+02	8.77E+00	-1.38E+02	1.32E+02
		143.76	*	10.96	4.04E+01		3.89E+02	2.01E+01
		163.36		5.08	1.15E+02		-4.39E+01	5.73E+01
		185.71	*	57.20	8.77E+00		1.44E+02	4.37E+00
		194.94		0.63	9.33E+02		-4.17E+03	4.65E+02
		202.11		1.08	5.41E+02		1.03E+02	2.70E+02
		205.31		5.01	1.16E+02		-1.41E+01	5.77E+01
+	NP-237	57.10		0.39	1.06E+03	3.25E+01	-1.40E+03	5.27E+02
		86.48	*	12.40	3.25E+01		8.60E+01	1.62E+01
		94.64	*	0.60	1.10E+03		-1.73E+03	5.49E+02
		143.25	*	0.43	1.03E+03		9.92E+03	5.13E+02
	NP-239	106.12		27.20	1.68E+08	1.68E+08	-1.59E+08	8.36E+07
		209.75		3.42	1.90E+09		-5.72E+08	9.49E+08

Analysis Report for 588556R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	NP-239	228.18		10.76	5.72E+08	1.68E+08	-2.80E+09	2.85E+08
		277.60		14.38	4.44E+08		-7.72E+09	2.21E+08
		334.31		2.07	3.14E+09		-3.12E+09	1.56E+09
	AM-241	59.54		35.90	1.16E+01	1.16E+01	-1.44E+01	5.77E+00
	CM-241	132.41		3.90	4.50E+02	2.36E+01	-9.10E+01	2.25E+02
		165.01		3.40	5.49E+02		-3.40E+02	2.74E+02
		205.88		2.67	6.95E+02		-1.35E+02	3.46E+02
		430.63		4.06	4.77E+02		-1.23E+02	2.37E+02
		463.27		1.23	1.36E+03		-5.61E+02	6.77E+02
		471.80		71.30	2.36E+01		-2.16E+00	1.17E+01
		636.88		1.53	1.01E+03		4.07E+02	5.02E+02
+	AM-243	74.66	*	68.20	6.72E+00	6.72E+00	2.49E+01	3.35E+00

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

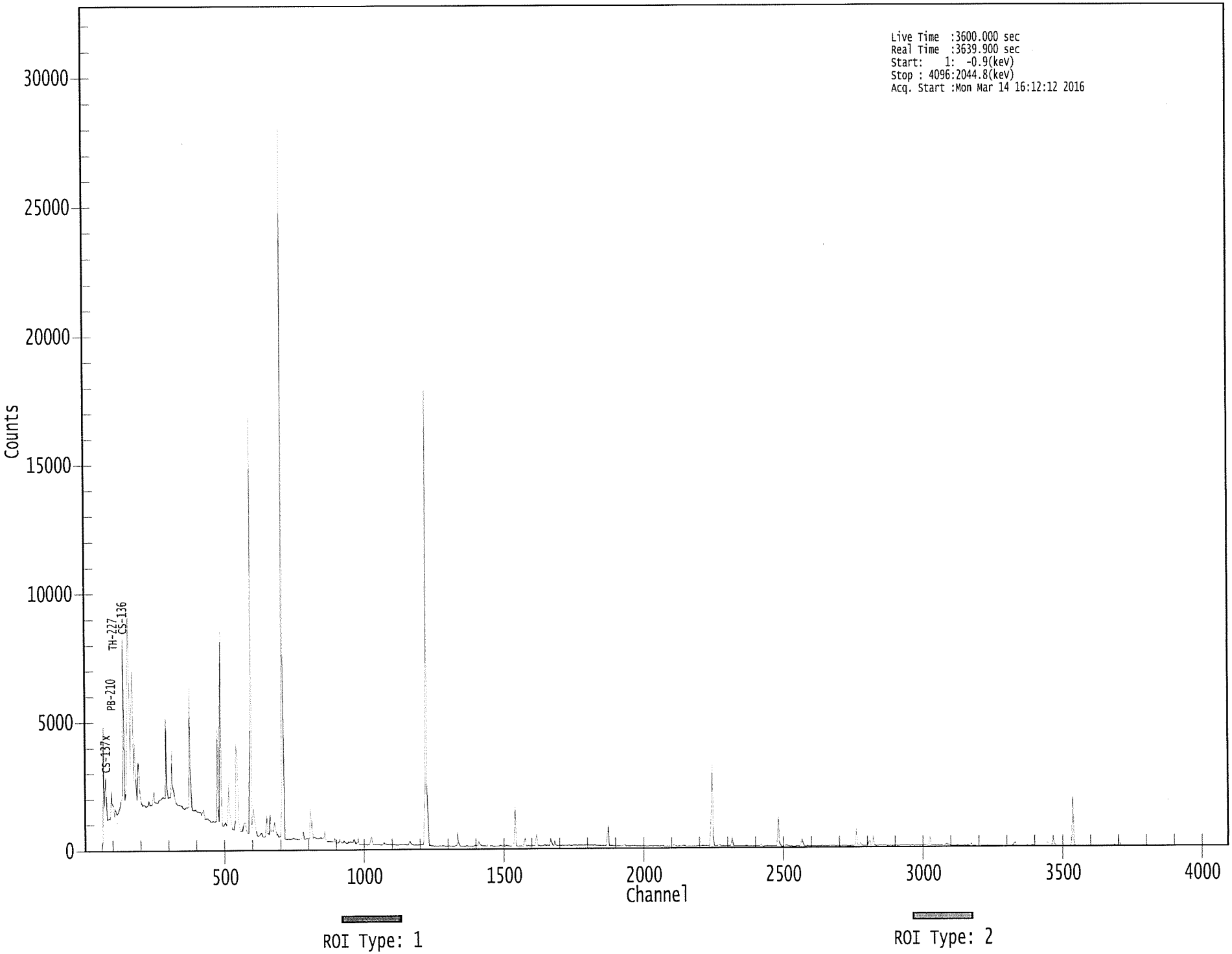
No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

0000007049.CNF



011589

Apex™

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 588556Dup.R2
Sample Description	: Tetra Tech TO# 160115-1
Sample Type	: Soil
Sample Size	: 2.084E+02 grams
Facility	: Default
Sample Taken On	: 1/19/2016 12:35:00PM
Acquisition Started	: 3/14/2016 5:24:26PM
Procedure	: Raised 300g can soil
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3640.0 seconds
Dead Time	: 1.10 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7051

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

ENERGY CALIBRATION REPORT

Detector Name : DET01

ENERGY CALIBRATION COEFFICIENTS

Energy Calibrate Performed on : 11/30/2015 7:51:04PM
by : Administrator
Energy Calibrate Type : POLY

Energy (keV) = -1.445 + 0.500*ch + -1.06E-07*ch^2 + 0.00E+00*ch^3

SHAPE CALIBRATION COEFFICIENTS

Shape Calibrate Performed on : 11/30/2015 7:51:04PM
by : Administrator

FWHM = 0.610 + 3.62E-02 *E^1/2

LOW TAIL = 0.00E+00 + 0.00E+00*E

ENERGY CALIBRATION RESULTS TABLE

Centroid Channel	Centroid error	Energy (keV)
121.97	0.13	59.54
1326.58	0.01	661.66
2669.40	0.03	1332.50

SHAPE CALIBRATION RESULTS TABLE

Energy (keV)	FWHM channels	FWHM error	TAIL channels	TAIL error
59.54	2.12	0.24	0.00	0.00
661.66	3.08	0.02	0.00	0.00
1332.50	3.90	0.06	0.00	0.00

EFFICIENCY CALIBRATION REPORT

Detector Name : DET01
Geometry Description : Raised 300gm Can Soil
Efficiency Calibration Performed on : 12/20/2005 11:10:05AM
by : Administrator
Efficiency Type Used : EMPIRICAL

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

Efficiency Triplets

Energy	*% Efficiency*	*Error*	*Computed*	*Error*	*% Difference*
59.50	6.77E-01	2.04E-02			
88.00	6.93E-01	2.10E-02			
122.10	7.30E-01	2.28E-02			
165.90	6.33E-01	3.05E-02			
391.70	3.38E-01	1.74E-02			
661.70	2.30E-01	6.91E-03			
898.00	1.91E-01	8.56E-03			
1173.20	1.46E-01	4.40E-03			
1332.50	1.33E-01	3.99E-03			
1836.00	1.03E-01	3.36E-03			

DUAL Efficiency Calibration Equation

Single Equation Terms

Offset :	-3.20E+01
Slope :	1.70E+01
Quadratic :	-3.77E+00
Cubic :	3.53E-01
4th Order :	-1.23E-02
5th Order :	0.00E+00
6th Order :	0.00E+00
7th Order :	0.00E+00
8th Order :	0.00E+00
9th Order :	0.00E+00

EMPIRICAL Efficiency Calibration Equation

Empirical Equation Terms

Scaling :	9.48E+02
Offset :	-6.35E+00
Slope :	8.02E-01
Quadratic :	2.35E-02
Cubic :	-1.58E-02
4th Order :	-1.23E-02
5th Order :	0.00E+00

LINEAR Efficiency Calibration Equation

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

Linear Equation Terms

Offset :	-1.79E-04
Slope :	-2.75E+00
Quadratic :	1.74E+02
Cubic :	-1.42E+04
4th Order :	2.49E+05
5th Order :	6.29E+06
6th Order :	0.00E+00
7th Order :	0.00E+00
8th Order :	0.00E+00
9th Order :	0.00E+00

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

PEAK LOCATE REPORT

Peak Locate Performed on : 3/30/2016 1:59:58PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 4.30

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	32.17	67.24	0.1844	22.35
2	36.45	75.79	0.2555	11.88
3	46.57	96.04	0.2818	12.09
4	50.24	103.38	0.2754	8.16
5	67.77	138.43	0.1211	38.71
6	74.90	152.61	0.1456	28.75
7	77.16	157.36	0.1223	43.10
8	81.14	165.34	0.1718	22.33
9	83.89	170.57	0.1338	31.72
10	87.33	177.46	0.1913	14.80
11	89.87	182.85	0.3372	7.50
12	94.77	192.47	0.2079	11.36
13	97.81	198.24	0.3159	6.12
14	113.19	229.28	0.3958	4.60
15	122.51	247.92	0.3163	5.81
16	144.12	291.15	0.1428	28.54
17	154.31	311.52	0.1529	22.35
18	158.73	320.38	0.3803	4.31
19	186.30	375.53	0.1109	42.71
20	210.81	424.54	0.2675	7.54
21	236.13	475.20	0.1136	41.99
22	242.14	487.22	0.0890	68.06
23	254.01	510.53	0.3008	5.86
24	256.36	515.69	0.1431	27.19

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
25	259.07	521.21	0.2397	11.46
26	269.62	542.02	0.1312	37.09
27	271.38	545.95	0.1670	26.47
28	274.74	552.77	0.2892	5.78
29	286.31	575.59	0.2395	9.65
30	295.38	593.72	0.0699	104.14
31	300.18	603.29	0.1497	22.78
32	302.92	608.55	0.2351	9.99
33	315.13	633.23	0.3702	4.37
34	324.05	651.08	0.1603	19.61
35	330.08	663.14	0.1613	18.48
36	338.48	679.93	0.1799	16.10
37	352.06	707.12	0.0562	148.46
38	389.20	781.42	0.2624	7.51
39	402.05	807.11	0.1333	27.06
40	405.14	813.27	0.1651	18.35
41	427.35	857.74	0.2125	10.82
42	445.31	893.68	0.2533	7.48
43	455.25	913.58	0.2750	6.49
44	462.23	927.54	0.3125	4.69
45	480.71	964.51	0.2345	8.07
46	487.38	977.85	0.2337	8.91
47	511.12	1025.36	0.2253	4.81
48	533.89	1070.91	0.3316	4.72
49	580.35	1163.88	0.2348	7.64
50	609.62	1222.45	0.0550	131.58
51	665.82	1334.91	0.1392	22.37
52	703.53	1410.37	0.2225	7.68
53	720.29	1443.91	0.2189	9.17
54	768.78	1540.95	0.1028	39.95
55	786.32	1576.05	0.1627	15.76
56	806.57	1616.59	0.1487	16.70
57	821.45	1646.37	0.2912	5.08
58	832.38	1668.24	0.1615	16.02
59	839.41	1682.31	0.1898	11.02
60	934.52	1872.67	0.1134	28.78
61	964.87	1933.43	0.2236	6.85
62	1052.40	2108.62	0.2354	6.57
63	1070.54	2144.95	0.2720	5.08
64	1120.87	2245.69	0.0761	60.87
65	1134.28	2272.54	0.2476	5.60
66	1155.81	2315.66	0.1374	19.27
67	1208.39	2420.90	0.2178	7.68
68	1238.75	2481.69	0.0987	35.62
69	1281.59	2567.46	0.1453	15.72
70	1378.32	2761.26	0.1077	28.48
71	1385.88	2776.43	0.1752	10.77
72	1402.21	2808.93	0.1477	16.08
73	1408.65	2821.90	0.1240	21.59
74	1509.89	3024.60	0.1318	18.73
75	1539.41	3083.69	0.2242	7.03
76	1544.07	3093.15	0.2444	5.75
77	1583.97	3172.97	0.1780	9.63
78	1595.37	3195.81	0.2613	4.39
79	1599.90	3204.76	0.2329	6.34

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
80	1661.95	3329.15	0.1565	12.31
81	1684.59	3374.48	0.2423	5.64
82	1730.30	3466.05	0.1171	22.05
83	1765.21	3535.97	0.0766	50.69
84	1839.13	3684.02	0.2080	7.35
85	1848.17	3702.13	0.1289	17.10

? = Adjacent peak noted
Errors quoted at 1.000 sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 3/30/2016 1:59:58PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	32.17	62 -	71	67.24	9.88E+03	149.40	8.30E+03	1.34
	2	36.45	72 -	80	75.79	2.03E+03	146.50	1.34E+04	1.11
	3	46.57	89 -	100	96.04	1.23E+03	163.25	1.59E+04	0.86
	4	50.24	100 -	106	103.38	-4.15E+01	116.95	1.02E+04	0.86
	5	67.77	134 -	143	138.43	1.04E+04	213.25	2.34E+04	1.09
M	6	74.90	145 -	186	152.70	3.63E+03	109.12	1.91E+04	0.85
m	7	77.16	145 -	186	157.22	7.80E+03	226.85	1.85E+04	0.85
m	8	81.14	145 -	186	165.18	2.14E+03	68.52	1.73E+04	0.86
m	9	83.89	145 -	186	170.67	5.59E+03	163.94	1.64E+04	0.86
m	10	87.33	145 -	186	177.56	2.44E+03	76.38	1.80E+04	0.87
m	11	89.87	145 -	186	182.65	2.53E+02	30.02	1.46E+04	0.88
M	12	94.77	187 -	205	192.43	-1.61E+03	260.15	1.22E+04	0.81
m	13	97.81	187 -	205	198.52	-1.51E+02	33.45	1.05E+04	0.82
	14	113.19	221 -	234	229.28	1.07E+03	204.31	2.39E+04	1.02
	15	122.51	243 -	252	247.92	6.41E+02	165.94	1.79E+04	1.17
	16	144.12	282 -	296	291.15	7.90E+03	244.82	2.97E+04	1.24
	17	154.31	305 -	316	311.52	5.70E+03	209.30	2.38E+04	1.23
	18	158.73	318 -	328	320.38	-2.32E+03	186.16	2.39E+04	0.50
	19	186.30	368 -	384	375.53	1.36E+04	251.28	2.68E+04	1.25
	20	210.81	420 -	433	424.54	2.39E+02	176.12	1.81E+04	1.04
	21	236.13	470 -	479	475.20	-3.31E+02	173.40	2.03E+04	0.91
	22	242.14	483 -	496	487.22	1.27E+04	217.36	2.03E+04	1.12
M	23	254.01	507 -	526	510.97	1.21E+03	70.08	7.05E+03	1.25
m	24	256.36	507 -	526	515.68	4.67E+03	97.13	7.71E+03	1.25
m	25	259.07	507 -	526	521.09	1.43E+03	70.89	6.62E+03	1.25
M	26	269.62	536 -	561	542.20	8.94E+03	117.43	6.36E+03	1.21
m	27	271.38	536 -	561	545.71	7.08E+03	107.86	6.36E+03	1.21
m	28	274.74	536 -	561	552.43	7.06E+02	62.30	7.15E+03	1.21
	29	286.31	562 -	583	575.59	-1.83E+04	236.56	3.53E+04	0.50
M	30	295.38	583 -	618	593.72	4.39E+04	222.26	5.63E+03	1.22
m	31	300.18	583 -	618	603.34	2.51E+03	69.74	5.81E+03	1.22
m	32	302.92	583 -	618	608.81	1.25E+03	58.89	4.89E+03	1.22

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	33	315.13	623 -	637	633.23	7.19E+02	121.74	8.06E+03	1.51
	34	324.05	648 -	657	651.08	1.02E+03	102.36	6.31E+03	1.22
M	35	330.08	657 -	694	663.15	-1.88E+03	177.10	4.37E+03	0.88
m	36	338.48	657 -	694	679.94	-1.08E+03	104.99	4.24E+03	0.89
	37	352.06	696 -	717	707.12	8.08E+04	319.61	1.02E+04	1.40
	38	389.20	773 -	784	781.42	1.16E+03	95.30	4.95E+03	1.40
M	39	402.05	801 -	818	807.12	3.25E+03	75.95	3.85E+03	1.32
m	40	405.14	801 -	818	813.31	2.16E+03	66.49	3.85E+03	1.32
	41	427.35	854 -	862	857.74	1.06E+03	77.77	3.44E+03	1.36
	42	445.31	889 -	896	893.68	5.19E+02	61.51	2.33E+03	1.49
	43	455.25	905 -	921	913.58	4.75E+00	96.06	4.99E+03	1.27
	44	462.23	922 -	931	927.54	1.35E+02	65.62	2.78E+03	1.18
	45	480.71	960 -	971	964.51	2.00E-01	72.05	3.24E+03	1.10
	46	487.38	971 -	985	977.85	2.56E+02	81.80	3.68E+03	1.18
	47	511.12	1019 -	1034	1025.36	1.65E+03	83.91	2.99E+03	2.98
	48	533.89	1064 -	1073	1070.91	1.47E+02	54.00	1.85E+03	1.28
	49	580.35	1160 -	1175	1163.88	7.25E+02	73.10	2.57E+03	1.71
	50	609.62	1216 -	1229	1222.45	5.90E+04	250.36	2.14E+03	1.52
	51	665.82	1331 -	1345	1334.91	1.76E+03	68.80	1.70E+03	1.47
	52	703.53	1404 -	1418	1410.37	6.31E+02	60.73	1.75E+03	1.93
	53	720.29	1440 -	1453	1443.91	4.53E+02	56.07	1.58E+03	1.35
	54	768.78	1528 -	1549	1540.95	5.63E+03	102.17	2.29E+03	1.61
	55	786.32	1569 -	1586	1576.05	1.22E+03	68.63	1.84E+03	1.65
	56	806.57	1608 -	1621	1616.59	1.25E+03	61.34	1.48E+03	1.58
	57	821.45	1643 -	1651	1646.37	7.35E+01	39.00	9.99E+02	1.17
	58	832.38	1661 -	1674	1668.24	5.34E+02	62.22	1.96E+03	1.38
	59	839.41	1676 -	1688	1682.31	-2.24E+01	57.62	2.03E+03	1.25
	60	934.52	1868 -	1878	1872.67	2.87E+03	67.46	1.08E+03	1.67
	61	964.87	1926 -	1937	1933.43	3.59E+02	45.72	1.08E+03	1.86
	62	1052.40	2104 -	2118	2108.62	2.73E+02	45.35	1.02E+03	1.70
	63	1070.54	2139 -	2153	2144.95	2.50E+02	44.61	9.95E+02	2.06
	64	1120.87	2236 -	2256	2245.69	1.24E+04	123.22	1.35E+03	1.87
	65	1134.28	2263 -	2278	2272.54	1.88E+02	45.41	1.04E+03	1.96
	66	1155.81	2310 -	2323	2315.66	1.38E+03	53.72	8.85E+02	1.76
	67	1208.39	2416 -	2426	2420.90	2.93E+02	34.57	5.82E+02	1.77
	68	1238.75	2473 -	2488	2481.69	4.43E+03	76.71	8.09E+02	1.84
	69	1281.59	2561 -	2581	2567.46	9.80E+02	55.29	1.01E+03	1.83
M	70	1378.32	2750 -	2782	2761.15	2.79E+03	57.12	5.78E+02	1.96
m	71	1385.88	2750 -	2782	2776.28	5.62E+02	30.05	5.82E+02	1.96
M	72	1402.21	2801 -	2830	2808.98	9.60E+02	36.24	4.98E+02	1.96
m	73	1408.65	2801 -	2830	2821.88	1.62E+03	45.10	5.60E+02	1.97
	74	1509.89	3014 -	3036	3024.60	1.38E+03	62.40	1.17E+03	1.77
M	75	1539.41	3078 -	3104	3083.73	2.80E+02	26.63	5.97E+02	1.93
m	76	1544.07	3078 -	3104	3093.05	2.06E+02	23.20	5.35E+02	1.93
	77	1583.97	3167 -	3179	3172.97	4.23E+02	34.04	4.46E+02	2.11
M	78	1595.37	3190 -	3211	3195.80	1.64E+02	20.37	3.83E+02	1.98
m	79	1599.90	3190 -	3211	3204.86	1.94E+02	21.26	4.08E+02	1.98
	80	1661.95	3317 -	3336	3329.15	6.59E+02	36.46	3.35E+02	2.24
	81	1684.59	3367 -	3380	3374.48	9.44E+01	22.28	2.37E+02	1.45
	82	1730.30	3456 -	3473	3466.05	1.69E+03	46.08	2.27E+02	2.21
	83	1765.21	3528 -	3543	3535.97	8.73E+03	95.38	2.04E+02	2.15
	84	1839.13	3676 -	3693	3684.02	-6.28E+02	35.98	1.01E+03	0.50
	85	1848.17	3694 -	3708	3702.13	1.05E+03	38.66	2.53E+02	2.36

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 3/30/2016 1:59:58PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	32.17	62 -	71	9.88E+03	149.40	8.30E+03	1.83E+02
	2	36.45	72 -	80	2.03E+03	146.50	1.34E+04	2.29E+02
	3	46.57	89 -	100	1.23E+03	163.25	1.59E+04	2.62E+02
	4	50.24	100 -	106	-4.15E+01	116.95	1.02E+04	1.93E+02
	5	67.77	134 -	143	1.04E+04	213.25	2.34E+04	3.08E+02
M	6	74.90	145 -	186	3.63E+03	109.12	1.91E+04	3.21E+02
m	7	77.16	145 -	186	7.80E+03	226.85	1.85E+04	3.16E+02
m	8	81.14	145 -	186	2.14E+03	68.52	1.73E+04	3.06E+02
m	9	83.89	145 -	186	5.59E+03	163.94	1.64E+04	2.98E+02
m	10	87.33	145 -	186	2.44E+03	76.38	1.80E+04	3.12E+02
m	11	89.87	145 -	186	2.53E+02	30.02	1.46E+04	2.81E+02
M	12	94.77	187 -	205	-1.61E+03	260.15	1.22E+04	2.57E+02
m	13	97.81	187 -	205	-1.51E+02	33.45	1.05E+04	2.39E+02
	14	113.19	221 -	234	1.07E+03	204.31	2.39E+04	3.32E+02
	15	122.51	243 -	252	6.41E+02	165.94	1.79E+04	2.70E+02
	16	144.12	282 -	296	7.90E+03	244.82	2.97E+04	3.75E+02
	17	154.31	305 -	316	5.70E+03	209.30	2.38E+04	3.21E+02
	18	158.73	318 -	328	-2.32E+03	186.16	2.39E+04	3.16E+02
	19	186.30	368 -	384	1.36E+04	251.28	2.68E+04	3.66E+02
	20	210.81	420 -	433	2.39E+02	176.12	1.81E+04	2.89E+02
	21	236.13	470 -	479	-3.31E+02	173.40	2.03E+04	2.87E+02
	22	242.14	483 -	496	1.27E+04	217.36	2.03E+04	3.06E+02
M	23	254.01	507 -	526	1.21E+03	70.08	7.05E+03	1.95E+02
m	24	256.36	507 -	526	4.67E+03	97.13	7.71E+03	2.04E+02
m	25	259.07	507 -	526	1.43E+03	70.89	6.62E+03	1.89E+02
M	26	269.62	536 -	561	8.94E+03	117.43	6.36E+03	1.86E+02
m	27	271.38	536 -	561	7.08E+03	107.86	6.36E+03	1.86E+02
m	28	274.74	536 -	561	7.06E+02	62.30	7.15E+03	1.97E+02
	29	286.31	562 -	583	-1.83E+04	236.56	3.53E+04	4.48E+02
M	30	295.38	583 -	618	4.39E+04	222.26	5.63E+03	1.75E+02
m	31	300.18	583 -	618	2.51E+03	69.74	5.81E+03	1.77E+02
m	32	302.92	583 -	618	1.25E+03	58.89	4.89E+03	1.63E+02
	33	315.13	623 -	637	7.19E+02	121.74	8.06E+03	1.95E+02
	34	324.05	648 -	657	1.02E+03	102.36	6.31E+03	1.60E+02
M	35	330.08	657 -	694	-1.88E+03	177.10	4.37E+03	1.54E+02

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
m	36	338.48	657 -	694	-1.08E+03	104.99	4.24E+03	1.51E+02
	37	352.06	696 -	717	8.08E+04	319.61	1.02E+04	2.40E+02
	38	389.20	773 -	784	1.16E+03	95.30	4.95E+03	1.46E+02
M	39	402.05	801 -	818	3.25E+03	75.95	3.85E+03	1.44E+02
m	40	405.14	801 -	818	2.16E+03	66.49	3.85E+03	1.44E+02
	41	427.35	854 -	862	1.06E+03	77.77	3.44E+03	1.16E+02
	42	445.31	889 -	896	5.19E+02	61.51	2.33E+03	9.40E+01
	43	455.25	905 -	921	4.75E+00	96.06	4.99E+03	1.58E+02
	44	462.23	922 -	931	1.35E+02	65.62	2.78E+03	1.06E+02
	45	480.71	960 -	971	2.00E-01	72.05	3.24E+03	1.19E+02
	46	487.38	971 -	985	2.56E+02	81.80	3.68E+03	1.32E+02
	47	511.12	1019 -	1034	1.65E+03	83.91	2.99E+03	1.21E+02
	48	533.89	1064 -	1073	1.47E+02	54.00	1.85E+03	8.66E+01
	49	580.35	1160 -	1175	7.25E+02	73.10	2.57E+03	1.12E+02
	50	609.62	1216 -	1229	5.90E+04	250.36	2.14E+03	9.92E+01
	51	665.82	1331 -	1345	1.76E+03	68.80	1.70E+03	8.97E+01
	52	703.53	1404 -	1418	6.31E+02	60.73	1.75E+03	9.10E+01
	53	720.29	1440 -	1453	4.53E+02	56.07	1.58E+03	8.53E+01
	54	768.78	1528 -	1549	5.63E+03	102.17	2.29E+03	1.14E+02
	55	786.32	1569 -	1586	1.22E+03	68.63	1.84E+03	9.73E+01
	56	806.57	1608 -	1621	1.25E+03	61.34	1.48E+03	8.24E+01
	57	821.45	1643 -	1651	7.35E+01	39.00	9.99E+02	6.26E+01
	58	832.38	1661 -	1674	5.34E+02	62.22	1.96E+03	9.50E+01
	59	839.41	1676 -	1688	-2.24E+01	57.62	2.03E+03	9.51E+01
	60	934.52	1868 -	1878	2.87E+03	67.46	1.08E+03	6.74E+01
	61	964.87	1926 -	1937	3.59E+02	45.72	1.08E+03	6.85E+01
	62	1052.40	2104 -	2118	2.73E+02	45.35	1.02E+03	6.95E+01
	63	1070.54	2139 -	2153	2.50E+02	44.61	9.95E+02	6.86E+01
	64	1120.87	2236 -	2256	1.24E+04	123.22	1.35E+03	8.66E+01
	65	1134.28	2263 -	2278	1.88E+02	45.41	1.04E+03	7.12E+01
	66	1155.81	2310 -	2323	1.38E+03	53.72	8.85E+02	6.38E+01
	67	1208.39	2416 -	2426	2.93E+02	34.57	5.82E+02	4.94E+01
	68	1238.75	2473 -	2488	4.43E+03	76.71	8.09E+02	6.28E+01
	69	1281.59	2561 -	2581	9.80E+02	55.29	1.01E+03	7.50E+01
M	70	1378.32	2750 -	2782	2.79E+03	57.12	5.78E+02	5.59E+01
m	71	1385.88	2750 -	2782	5.62E+02	30.05	5.82E+02	5.61E+01
M	72	1402.21	2801 -	2830	9.60E+02	36.24	4.98E+02	5.19E+01
m	73	1408.65	2801 -	2830	1.62E+03	45.10	5.60E+02	5.50E+01
	74	1509.89	3014 -	3036	1.38E+03	62.40	1.17E+03	8.24E+01
M	75	1539.41	3078 -	3104	2.80E+02	26.63	5.97E+02	5.68E+01
m	76	1544.07	3078 -	3104	2.06E+02	23.20	5.35E+02	5.38E+01
	77	1583.97	3167 -	3179	4.23E+02	34.04	4.46E+02	4.46E+01
M	78	1595.37	3190 -	3211	1.64E+02	20.37	3.83E+02	4.55E+01
m	79	1599.90	3190 -	3211	1.94E+02	21.26	4.08E+02	4.70E+01
	80	1661.95	3317 -	3336	6.59E+02	36.46	3.35E+02	4.26E+01
	81	1684.59	3367 -	3380	9.44E+01	22.28	2.37E+02	3.30E+01
	82	1730.30	3456 -	3473	1.69E+03	46.08	2.27E+02	3.41E+01
	83	1765.21	3528 -	3543	8.73E+03	95.38	2.04E+02	3.15E+01
	84	1839.13	3676 -	3693	-6.28E+02	35.98	1.01E+03	7.21E+01
	85	1848.17	3694 -	3708	1.05E+03	38.66	2.53E+02	3.46E+01

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 3/30/2016 1:59:58PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB
Peak Match Tolerance : 1.000 keV

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	32.17	62 -	71	67.24	9.88E+03	149.40	8.30E+03	.....
	2	36.45	72 -	80	75.79	2.03E+03	146.50	1.34E+04	I-125
	3	46.57	89 -	100	96.04	1.23E+03	163.25	1.59E+04	PB-210
	4	50.24	100 -	106	103.38	-4.15E+01	116.95	1.02E+04	TH-227
	5	67.77	134 -	143	138.43	1.04E+04	213.25	2.34E+04	CS-136
M	6	74.90	145 -	186	152.70	3.63E+03	109.12	1.91E+04	TH-229 AM-243 PA-233
m	7	77.16	145 -	186	157.22	7.80E+03	226.85	1.85E+04	.....
m	8	81.14	145 -	186	165.18	2.14E+03	68.52	1.73E+04	TH-231 BA-133
m	9	83.89	145 -	186	170.67	5.59E+03	163.94	1.64E+04	TH-231 TH-228 TH-234
m	10	87.33	145 -	186	177.56	2.44E+03	76.38	1.80E+04	PA-233 CD-109 EU-155 NP-237 CS-136 TH-229
m	11	89.87	145 -	186	182.65	2.53E+02	30.02	1.46E+04	TH-231
M	12	94.77	187 -	205	192.43	-1.61E+03	260.15	1.22E+04	NP-237 TH-227
m	13	97.81	187 -	205	198.52	-1.51E+02	33.45	1.05E+04	GD-153 U-233
	14	113.19	221 -	234	229.28	1.07E+03	204.31	2.39E+04	TH-234
	15	122.51	243 -	252	247.92	6.41E+02	165.94	1.79E+04	RA-223 CO-57 EU-154 EU-152
	16	144.12	282 -	296	291.15	7.90E+03	244.82	2.97E+04	RA-223 U-235 NP-237
	17	154.31	305 -	316	311.52	5.70E+03	209.30	2.38E+04	TH-229 RA-223

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
									AC-228
	18	158.73	318 -	328	320.38	-2.32E+03	186.16	2.39E+04	RA-223
									PA-234
	19	186.30	368 -	384	375.53	1.36E+04	251.28	2.68E+04	PA-234
									RA-226
									U-235
	20	210.81	420 -	433	424.54	2.39E+02	176.12	1.81E+04	TH-229
									TH-227
	21	236.13	470 -	479	475.20	-3.31E+02	173.40	2.03E+04	TH-227
									NB-95m
	22	242.14	483 -	496	487.22	1.27E+04	217.36	2.03E+04	PB-214
M	23	254.01	507 -	526	510.97	1.21E+03	70.08	7.05E+03	.....
m	24	256.36	507 -	526	515.68	4.67E+03	97.13	7.71E+03	TH-227
m	25	259.07	507 -	526	521.09	1.43E+03	70.89	6.62E+03	PB-214
M	26	269.62	536 -	561	542.20	8.94E+03	117.43	6.36E+03	RA-223
									AC-228
m	27	271.38	536 -	561	545.71	7.08E+03	107.86	6.36E+03	PA-233
									RN-219
									PA-234
m	28	274.74	536 -	561	552.43	7.06E+02	62.30	7.15E+03	.....
	29	286.31	562 -	583	575.59	-1.83E+04	236.56	3.53E+04	TH-227
M	30	295.38	583 -	618	593.72	4.39E+04	222.26	5.63E+03	PB-214
									EU-152
									IR-192
m	31	300.18	583 -	618	603.34	2.51E+03	69.74	5.81E+03	PB-212
									PA-231
									PA-233
									TH-227
m	32	302.92	583 -	618	608.81	1.25E+03	58.89	4.89E+03	BA-133
									PA-231
	33	315.13	623 -	637	633.23	7.19E+02	121.74	8.06E+03	.....
	34	324.05	648 -	657	651.08	1.02E+03	102.36	6.31E+03	RA-223
M	35	330.08	657 -	694	663.15	-1.88E+03	177.10	4.37E+03	PA-231
									TH-227
									PA-234
m	36	338.48	657 -	694	679.94	-1.08E+03	104.99	4.24E+03	AC-228
									RA-223
	37	352.06	696 -	717	707.12	8.08E+04	319.61	1.02E+04	PB-214
	38	389.20	773 -	784	781.42	1.16E+03	95.30	4.95E+03	I-126
M	39	402.05	801 -	818	807.12	3.25E+03	75.95	3.85E+03	RN-219
									KR-87
m	40	405.14	801 -	818	813.31	2.16E+03	66.49	3.85E+03	PB-211
									I-134
	41	427.35	854 -	862	857.74	1.06E+03	77.77	3.44E+03	PB-211
									SB-125
	42	445.31	889 -	896	893.68	5.19E+02	61.51	2.33E+03	EU-154
	43	455.25	905 -	921	913.58	4.75E+00	96.06	4.99E+03	.....
	44	462.23	922 -	931	927.54	1.35E+02	65.62	2.78E+03	CS-138
									AC-228
	45	480.71	960 -	971	964.51	2.00E-01	72.05	3.24E+03	.....
	46	487.38	971 -	985	977.85	2.56E+02	81.80	3.68E+03	LA-140
	47	511.12	1019 -	1034	1025.36	1.65E+03	83.91	2.99E+03	TL-208
	48	533.89	1064 -	1073	1070.91	1.47E+02	54.00	1.85E+03	.....
	49	580.35	1160 -	1175	1163.88	7.25E+02	73.10	2.57E+03	.....

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	50	609.62	1216 -	1229	1222.45	5.90E+04	250.36	2.14E+03	BI-214
									RU-103
	51	665.82	1331 -	1345	1334.91	1.76E+03	68.80	1.70E+03	BI-214
									SB-126
									PA-234
	52	703.53	1404 -	1418	1410.37	6.31E+02	60.73	1.75E+03	NB-94x
	53	720.29	1440 -	1453	1443.91	4.53E+02	56.07	1.58E+03	SB-126
	54	768.78	1528 -	1549	1540.95	5.63E+03	102.17	2.29E+03	BI-214
	55	786.32	1569 -	1586	1576.05	1.22E+03	68.63	1.84E+03	PA-234
									PB-214
									CS-135
									BI-212
	56	806.57	1608 -	1621	1616.59	1.25E+03	61.34	1.48E+03	BI-214
	57	821.45	1643 -	1651	1646.37	7.35E+01	39.00	9.99E+02	.....
	58	832.38	1661 -	1674	1668.24	5.34E+02	62.22	1.96E+03	PB-211
									PA-234
	59	839.41	1676 -	1688	1682.31	-2.24E+01	57.62	2.03E+03	PB-214
									AC-228
	60	934.52	1868 -	1878	1872.67	2.87E+03	67.46	1.08E+03	BI-214
	61	964.87	1926 -	1937	1933.43	3.59E+02	45.72	1.08E+03	AC-228
									EU-152
	62	1052.40	2104 -	2118	2108.62	2.73E+02	45.35	1.02E+03	.....
	63	1070.54	2139 -	2153	2144.95	2.50E+02	44.61	9.95E+02	.....
	64	1120.87	2236 -	2256	2245.69	1.24E+04	123.22	1.35E+03	BI-214
	65	1134.28	2263 -	2278	2272.54	1.88E+02	45.41	1.04E+03	.....
	66	1155.81	2310 -	2323	2315.66	1.38E+03	53.72	8.85E+02	BI-214
	67	1208.39	2416 -	2426	2420.90	2.93E+02	34.57	5.82E+02	BI-214
	68	1238.75	2473 -	2488	2481.69	4.43E+03	76.71	8.09E+02	CO-56
									BI-214
	69	1281.59	2561 -	2581	2567.46	9.80E+02	55.29	1.01E+03	BI-214
M	70	1378.32	2750 -	2782	2761.15	2.79E+03	57.12	5.78E+02	BI-214
m	71	1385.88	2750 -	2782	2776.28	5.62E+02	30.05	5.82E+02	BI-214
M	72	1402.21	2801 -	2830	2808.98	9.60E+02	36.24	4.98E+02	BI-214
m	73	1408.65	2801 -	2830	2821.88	1.62E+03	45.10	5.60E+02	EU-152
									BI-214
	74	1509.89	3014 -	3036	3024.60	1.38E+03	62.40	1.17E+03	I-124
									BI-214
M	75	1539.41	3078 -	3104	3083.73	2.80E+02	26.63	5.97E+02	.....
m	76	1544.07	3078 -	3104	3093.05	2.06E+02	23.20	5.35E+02	.....
	77	1583.97	3167 -	3179	3172.97	4.23E+02	34.04	4.46E+02	BI-214
M	78	1595.37	3190 -	3211	3195.80	1.64E+02	20.37	3.83E+02	LA-140
m	79	1599.90	3190 -	3211	3204.86	1.94E+02	21.26	4.08E+02	.....
	80	1661.95	3317 -	3336	3329.15	6.59E+02	36.46	3.35E+02	BI-214
	81	1684.59	3367 -	3380	3374.48	9.44E+01	22.28	2.37E+02	.....
	82	1730.30	3456 -	3473	3466.05	1.69E+03	46.08	2.27E+02	BI-214
	83	1765.21	3528 -	3543	3535.97	8.73E+03	95.38	2.04E+02	BI-214
	84	1839.13	3676 -	3693	3684.02	-6.28E+02	35.98	1.01E+03	.....
	85	1848.17	3694 -	3708	3702.13	1.05E+03	38.66	2.53E+02	BI-214

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 3/30/2016 1:59:58PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	32.17	9.88E+03	149.40	3.72E-03	2.28E-04
	2	36.45	2.03E+03	146.50	4.41E-03	2.28E-04
	3	46.57	1.23E+03	163.25	5.69E-03	2.28E-04
	4	50.24	-4.15E+01	116.95	6.03E-03	2.28E-04
	5	67.77	1.04E+04	213.25	7.01E-03	2.88E-04
M	6	74.90	3.63E+03	109.12	7.19E-03	3.39E-04
m	7	77.16	7.80E+03	226.85	7.23E-03	3.56E-04
m	8	81.14	2.14E+03	68.52	7.27E-03	3.84E-04
m	9	83.89	5.59E+03	163.94	7.29E-03	4.04E-04
m	10	87.33	2.44E+03	76.38	7.31E-03	4.29E-04
m	11	89.87	2.53E+02	30.02	7.31E-03	4.32E-04
M	12	94.77	-1.61E+03	260.15	7.29E-03	4.25E-04
m	13	97.81	-1.51E+02	33.45	7.28E-03	4.22E-04
	14	113.19	1.07E+03	204.31	7.12E-03	4.02E-04
	15	122.51	6.41E+02	165.94	6.98E-03	3.90E-04
	16	144.12	7.90E+03	244.82	6.61E-03	3.59E-04
	17	154.31	5.70E+03	209.30	6.42E-03	3.44E-04
	18	158.73	-2.32E+03	186.16	6.34E-03	3.38E-04
	19	186.30	1.36E+04	251.28	5.86E-03	3.19E-04
	20	210.81	2.39E+02	176.12	5.46E-03	3.09E-04
	21	236.13	-3.31E+02	173.40	5.09E-03	2.99E-04
	22	242.14	1.27E+04	217.36	5.00E-03	2.97E-04
M	23	254.01	1.21E+03	70.08	4.85E-03	2.92E-04
m	24	256.36	4.67E+03	97.13	4.82E-03	2.91E-04
m	25	259.07	1.43E+03	70.89	4.78E-03	2.90E-04
M	26	269.62	8.94E+03	117.43	4.66E-03	2.86E-04
m	27	271.38	7.08E+03	107.86	4.63E-03	2.85E-04
m	28	274.74	7.06E+02	62.30	4.59E-03	2.84E-04
	29	286.31	-1.83E+04	236.56	4.46E-03	2.79E-04
M	30	295.38	4.39E+04	222.26	4.37E-03	2.75E-04
m	31	300.18	2.51E+03	69.74	4.32E-03	2.74E-04
m	32	302.92	1.25E+03	58.89	4.29E-03	2.72E-04
	33	315.13	7.19E+02	121.74	4.17E-03	2.68E-04
	34	324.05	1.02E+03	102.36	4.08E-03	2.64E-04
M	35	330.08	-1.88E+03	177.10	4.03E-03	2.62E-04
m	36	338.48	-1.08E+03	104.99	3.95E-03	2.58E-04
	37	352.06	8.08E+04	319.61	3.84E-03	2.53E-04
	38	389.20	1.16E+03	95.30	3.55E-03	2.38E-04
M	39	402.05	3.25E+03	75.95	3.47E-03	2.31E-04

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
m	40	405.14	2.16E+03	66.49	3.45E-03	2.29E-04
	41	427.35	1.06E+03	77.77	3.31E-03	2.15E-04
	42	445.31	5.19E+02	61.51	3.20E-03	2.04E-04
	43	455.25	4.75E+00	96.06	3.14E-03	1.98E-04
	44	462.23	1.35E+02	65.62	3.11E-03	1.94E-04
	45	480.71	2.00E-01	72.05	3.01E-03	1.83E-04
	46	487.38	2.56E+02	81.80	2.98E-03	1.79E-04
	47	511.12	1.65E+03	83.91	2.87E-03	1.65E-04
	48	533.89	1.47E+02	54.00	2.77E-03	1.51E-04
	49	580.35	7.25E+02	73.10	2.59E-03	1.23E-04
	50	609.62	5.90E+04	250.36	2.49E-03	1.05E-04
	51	665.82	1.76E+03	68.80	2.32E-03	7.49E-05
	52	703.53	6.31E+02	60.73	2.22E-03	8.30E-05
	53	720.29	4.53E+02	56.07	2.17E-03	8.66E-05
	54	768.78	5.63E+03	102.17	2.06E-03	9.70E-05
	55	786.32	1.22E+03	68.63	2.02E-03	1.01E-04
	56	806.57	1.25E+03	61.34	1.98E-03	1.05E-04
	57	821.45	7.35E+01	39.00	1.95E-03	1.08E-04
	58	832.38	5.34E+02	62.22	1.93E-03	1.11E-04
	59	839.41	-2.24E+01	57.62	1.92E-03	1.12E-04
	60	934.52	2.87E+03	67.46	1.76E-03	1.14E-04
	61	964.87	3.59E+02	45.72	1.72E-03	1.05E-04
	62	1052.40	2.73E+02	45.35	1.60E-03	7.96E-05
	63	1070.54	2.50E+02	44.61	1.58E-03	7.43E-05
	64	1120.87	1.24E+04	123.22	1.52E-03	5.96E-05
	65	1134.28	1.88E+02	45.41	1.51E-03	5.57E-05
	66	1155.81	1.38E+03	53.72	1.49E-03	4.94E-05
	67	1208.39	2.93E+02	34.57	1.44E-03	4.33E-05
	68	1238.75	4.43E+03	76.71	1.41E-03	4.25E-05
	69	1281.59	9.80E+02	55.29	1.37E-03	4.14E-05
M	70	1378.32	2.79E+03	57.12	1.29E-03	3.94E-05
m	71	1385.88	5.62E+02	30.05	1.29E-03	3.93E-05
M	72	1402.21	9.60E+02	36.24	1.28E-03	3.91E-05
m	73	1408.65	1.62E+03	45.10	1.27E-03	3.90E-05
	74	1509.89	1.38E+03	62.40	1.21E-03	3.78E-05
M	75	1539.41	2.80E+02	26.63	1.19E-03	3.74E-05
m	76	1544.07	2.06E+02	23.20	1.19E-03	3.74E-05
	77	1583.97	4.23E+02	34.04	1.16E-03	3.69E-05
M	78	1595.37	1.64E+02	20.37	1.16E-03	3.67E-05
m	79	1599.90	1.94E+02	21.26	1.15E-03	3.67E-05
	80	1661.95	6.59E+02	36.46	1.12E-03	3.59E-05
	81	1684.59	9.44E+01	22.28	1.11E-03	3.56E-05
	82	1730.30	1.69E+03	46.08	1.09E-03	3.51E-05
	83	1765.21	8.73E+03	95.38	1.07E-03	3.47E-05
	84	1839.13	-6.28E+02	35.98	1.04E-03	3.38E-05
	85	1848.17	1.05E+03	38.66	1.03E-03	3.38E-05

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 3/30/2016 1:59:58PM

Env. Background File : \\NHHJ-6\ApexRoot\Default\Data\0000006791.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	32.17	9.88E+03	149.40			9.88E+03	1.49E+02
	2	36.45	2.03E+03	146.50			2.03E+03	1.47E+02
	3	46.57	1.23E+03	163.25	2.73E+01	2.86E+00	1.20E+03	1.63E+02
	4	50.24	-4.15E+01	116.95			-4.15E+01	1.17E+02
	5	67.77	1.04E+04	213.25			1.04E+04	2.13E+02
M	6	74.90	3.63E+03	109.12			3.63E+03	1.09E+02
m	7	77.16	7.80E+03	226.85			7.80E+03	2.27E+02
m	8	81.14	2.14E+03	68.52			2.14E+03	6.85E+01
m	9	83.89	5.59E+03	163.94			5.59E+03	1.64E+02
m	10	87.33	2.44E+03	76.38			2.44E+03	7.64E+01
m	11	89.87	2.53E+02	30.02			2.53E+02	3.00E+01
M	12	94.77	-1.61E+03	260.15			-1.61E+03	2.60E+02
m	13	97.81	-1.51E+02	33.45			-1.51E+02	3.34E+01
	14	113.19	1.07E+03	204.31			1.07E+03	2.04E+02
	15	122.51	6.41E+02	165.94			6.41E+02	1.66E+02
	16	144.12	7.90E+03	244.82			7.90E+03	2.45E+02
	17	154.31	5.70E+03	209.30			5.70E+03	2.09E+02
	18	158.73	-2.32E+03	186.16			-2.32E+03	1.86E+02
	19	186.30	1.36E+04	251.28	2.96E+01	3.21E+00	1.36E+04	2.51E+02
	20	210.81	2.39E+02	176.12			2.39E+02	1.76E+02
	21	236.13	-3.31E+02	173.40			-3.31E+02	1.73E+02
	22	242.14	1.27E+04	217.36			1.27E+04	2.17E+02
M	23	254.01	1.21E+03	70.08			1.21E+03	7.01E+01
m	24	256.36	4.67E+03	97.13			4.67E+03	9.71E+01
m	25	259.07	1.43E+03	70.89			1.43E+03	7.09E+01
M	26	269.62	8.94E+03	117.43			8.94E+03	1.17E+02
m	27	271.38	7.08E+03	107.86			7.08E+03	1.08E+02
m	28	274.74	7.06E+02	62.30			7.06E+02	6.23E+01
	29	286.31	-1.83E+04	236.56			-1.83E+04	2.37E+02
M	30	295.38	4.39E+04	222.26			4.39E+04	2.22E+02
m	31	300.18	2.51E+03	69.74			2.51E+03	6.97E+01
m	32	302.92	1.25E+03	58.89			1.25E+03	5.89E+01
	33	315.13	7.19E+02	121.74			7.19E+02	1.22E+02
	34	324.05	1.02E+03	102.36			1.02E+03	1.02E+02
M	35	330.08	-1.88E+03	177.10			-1.88E+03	1.77E+02
m	36	338.48	-1.08E+03	104.99			-1.08E+03	1.05E+02
	37	352.06	8.08E+04	319.61			8.08E+04	3.20E+02
	38	389.20	1.16E+03	95.30			1.16E+03	9.53E+01
M	39	402.05	3.25E+03	75.95			3.25E+03	7.59E+01
m	40	405.14	2.16E+03	66.49			2.16E+03	6.65E+01
	41	427.35	1.06E+03	77.77			1.06E+03	7.78E+01
	42	445.31	5.19E+02	61.51			5.19E+02	6.15E+01
	43	455.25	4.75E+00	96.06			4.75E+00	9.61E+01
	44	462.23	1.35E+02	65.62			1.35E+02	6.56E+01
	45	480.71	2.00E-01	72.05			2.00E-01	7.21E+01
	46	487.38	2.56E+02	81.80			2.56E+02	8.18E+01

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	47	511.12	1.65E+03	83.91	7.31E+01	3.34E+00	1.58E+03	8.40E+01
	48	533.89	1.47E+02	54.00			1.47E+02	5.40E+01
	49	580.35	7.25E+02	73.10			7.25E+02	7.31E+01
	50	609.62	5.90E+04	250.36			5.90E+04	2.50E+02
	51	665.82	1.76E+03	68.80			1.76E+03	6.88E+01
	52	703.53	6.31E+02	60.73			6.31E+02	6.07E+01
	53	720.29	4.53E+02	56.07			4.53E+02	5.61E+01
	54	768.78	5.63E+03	102.17			5.63E+03	1.02E+02
	55	786.32	1.22E+03	68.63			1.22E+03	6.86E+01
	56	806.57	1.25E+03	61.34			1.25E+03	6.13E+01
	57	821.45	7.35E+01	39.00			7.35E+01	3.90E+01
	58	832.38	5.34E+02	62.22			5.34E+02	6.22E+01
	59	839.41	-2.24E+01	57.62			-2.24E+01	5.76E+01
	60	934.52	2.87E+03	67.46			2.87E+03	6.75E+01
	61	964.87	3.59E+02	45.72			3.59E+02	4.57E+01
	62	1052.40	2.73E+02	45.35			2.73E+02	4.53E+01
	63	1070.54	2.50E+02	44.61			2.50E+02	4.46E+01
	64	1120.87	1.24E+04	123.22			1.24E+04	1.23E+02
	65	1134.28	1.88E+02	45.41			1.88E+02	4.54E+01
	66	1155.81	1.38E+03	53.72			1.38E+03	5.37E+01
	67	1208.39	2.93E+02	34.57			2.93E+02	3.46E+01
	68	1238.75	4.43E+03	76.71			4.43E+03	7.67E+01
	69	1281.59	9.80E+02	55.29			9.80E+02	5.53E+01
M	70	1378.32	2.79E+03	57.12			2.79E+03	5.71E+01
m	71	1385.88	5.62E+02	30.05			5.62E+02	3.00E+01
M	72	1402.21	9.60E+02	36.24			9.60E+02	3.62E+01
m	73	1408.65	1.62E+03	45.10			1.62E+03	4.51E+01
	74	1509.89	1.38E+03	62.40			1.38E+03	6.24E+01
M	75	1539.41	2.80E+02	26.63			2.80E+02	2.66E+01
m	76	1544.07	2.06E+02	23.20			2.06E+02	2.32E+01
	77	1583.97	4.23E+02	34.04			4.23E+02	3.40E+01
M	78	1595.37	1.64E+02	20.37			1.64E+02	2.04E+01
m	79	1599.90	1.94E+02	21.26			1.94E+02	2.13E+01
	80	1661.95	6.59E+02	36.46			6.59E+02	3.65E+01
	81	1684.59	9.44E+01	22.28			9.44E+01	2.23E+01
	82	1730.30	1.69E+03	46.08			1.69E+03	4.61E+01
	83	1765.21	8.73E+03	95.38			8.73E+03	9.54E+01
	84	1839.13	-6.28E+02	35.98			-6.28E+02	3.60E+01
	85	1848.17	1.05E+03	38.66			1.05E+03	3.87E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 3/30/2016 1:59:58PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\NHHJ-6\ApexRoot\Default\Data\0000006791.CNF

Corrected Area is: Original * Peak Ratio - Background

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	32.17	9.88E+03	149.40			9.88E+03	1.49E+02
	2	36.45	2.03E+03	146.50			2.03E+03	1.47E+02
	3	46.57	1.23E+03	163.25	2.73E+01	2.86E+00	1.20E+03	1.63E+02
	4	50.24	-4.15E+01	116.95			-4.15E+01	1.17E+02
	5	67.77	1.04E+04	213.25			1.04E+04	2.13E+02
M	6	74.90	3.63E+03	109.12			3.63E+03	1.09E+02
m	7	77.16	7.80E+03	226.85			7.80E+03	2.27E+02
m	8	81.14	2.14E+03	68.52			2.14E+03	6.85E+01
m	9	83.89	5.59E+03	163.94			5.59E+03	1.64E+02
m	10	87.33	2.44E+03	76.38			2.44E+03	7.64E+01
m	11	89.87	2.53E+02	30.02			2.53E+02	3.00E+01
M	12	94.77	-1.61E+03	260.15			-1.61E+03	2.60E+02
m	13	97.81	-1.51E+02	33.45			-1.51E+02	3.34E+01
	14	113.19	1.07E+03	204.31			1.07E+03	2.04E+02
	15	122.51	6.41E+02	165.94			6.41E+02	1.66E+02
	16	144.12	7.90E+03	244.82			7.90E+03	2.45E+02
	17	154.31	5.70E+03	209.30			5.70E+03	2.09E+02
	18	158.73	-2.32E+03	186.16			-2.32E+03	1.86E+02
	19	186.30	1.36E+04	251.28	2.96E+01	3.21E+00	1.36E+04	2.51E+02
	20	210.81	2.39E+02	176.12			2.39E+02	1.76E+02
	21	236.13	-3.31E+02	173.40			-3.31E+02	1.73E+02
	22	242.14	1.27E+04	217.36			1.27E+04	2.17E+02
M	23	254.01	1.21E+03	70.08			1.21E+03	7.01E+01
m	24	256.36	4.67E+03	97.13			4.67E+03	9.71E+01
m	25	259.07	1.43E+03	70.89			1.43E+03	7.09E+01
M	26	269.62	8.94E+03	117.43			8.94E+03	1.17E+02
m	27	271.38	7.08E+03	107.86			7.08E+03	1.08E+02
m	28	274.74	7.06E+02	62.30			7.06E+02	6.23E+01
	29	286.31	-1.83E+04	236.56			-1.83E+04	2.37E+02
M	30	295.38	4.39E+04	222.26			4.39E+04	2.22E+02
m	31	300.18	2.51E+03	69.74			2.51E+03	6.97E+01
m	32	302.92	1.25E+03	58.89			1.25E+03	5.89E+01
	33	315.13	7.19E+02	121.74			7.19E+02	1.22E+02
	34	324.05	1.02E+03	102.36			1.02E+03	1.02E+02
M	35	330.08	-1.88E+03	177.10			-1.88E+03	1.77E+02
m	36	338.48	-1.08E+03	104.99			-1.08E+03	1.05E+02
	37	352.06	8.08E+04	319.61			8.08E+04	3.20E+02
	38	389.20	1.16E+03	95.30			1.16E+03	9.53E+01
M	39	402.05	3.25E+03	75.95			3.25E+03	7.59E+01
m	40	405.14	2.16E+03	66.49			2.16E+03	6.65E+01
	41	427.35	1.06E+03	77.77			1.06E+03	7.78E+01

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	42	445.31	5.19E+02	61.51			5.19E+02	6.15E+01
	43	455.25	4.75E+00	96.06			4.75E+00	9.61E+01
	44	462.23	1.35E+02	65.62			1.35E+02	6.56E+01
	45	480.71	2.00E-01	72.05			2.00E-01	7.21E+01
	46	487.38	2.56E+02	81.80			2.56E+02	8.18E+01
	47	511.12	1.65E+03	83.91	7.31E+01	3.34E+00	1.58E+03	8.40E+01
	48	533.89	1.47E+02	54.00			1.47E+02	5.40E+01
	49	580.35	7.25E+02	73.10			7.25E+02	7.31E+01
	50	609.62	5.90E+04	250.36			5.90E+04	2.50E+02
	51	665.82	1.76E+03	68.80			1.76E+03	6.88E+01
	52	703.53	6.31E+02	60.73			6.31E+02	6.07E+01
	53	720.29	4.53E+02	56.07			4.53E+02	5.61E+01
	54	768.78	5.63E+03	102.17			5.63E+03	1.02E+02
	55	786.32	1.22E+03	68.63			1.22E+03	6.86E+01
	56	806.57	1.25E+03	61.34			1.25E+03	6.13E+01
	57	821.45	7.35E+01	39.00			7.35E+01	3.90E+01
	58	832.38	5.34E+02	62.22			5.34E+02	6.22E+01
	59	839.41	-2.24E+01	57.62			-2.24E+01	5.76E+01
	60	934.52	2.87E+03	67.46			2.87E+03	6.75E+01
	61	964.87	3.59E+02	45.72			3.59E+02	4.57E+01
	62	1052.40	2.73E+02	45.35			2.73E+02	4.53E+01
	63	1070.54	2.50E+02	44.61			2.50E+02	4.46E+01
	64	1120.87	1.24E+04	123.22			1.24E+04	1.23E+02
	65	1134.28	1.88E+02	45.41			1.88E+02	4.54E+01
	66	1155.81	1.38E+03	53.72			1.38E+03	5.37E+01
	67	1208.39	2.93E+02	34.57			2.93E+02	3.46E+01
	68	1238.75	4.43E+03	76.71			4.43E+03	7.67E+01
	69	1281.59	9.80E+02	55.29			9.80E+02	5.53E+01
M	70	1378.32	2.79E+03	57.12			2.79E+03	5.71E+01
m	71	1385.88	5.62E+02	30.05			5.62E+02	3.00E+01
M	72	1402.21	9.60E+02	36.24			9.60E+02	3.62E+01
m	73	1408.65	1.62E+03	45.10			1.62E+03	4.51E+01
	74	1509.89	1.38E+03	62.40			1.38E+03	6.24E+01
M	75	1539.41	2.80E+02	26.63			2.80E+02	2.66E+01
m	76	1544.07	2.06E+02	23.20			2.06E+02	2.32E+01
	77	1583.97	4.23E+02	34.04			4.23E+02	3.40E+01
M	78	1595.37	1.64E+02	20.37			1.64E+02	2.04E+01
m	79	1599.90	1.94E+02	21.26			1.94E+02	2.13E+01
	80	1661.95	6.59E+02	36.46			6.59E+02	3.65E+01
	81	1684.59	9.44E+01	22.28			9.44E+01	2.23E+01
	82	1730.30	1.69E+03	46.08			1.69E+03	4.61E+01
	83	1765.21	8.73E+03	95.38			8.73E+03	9.54E+01
	84	1839.13	-6.28E+02	35.98			-6.28E+02	3.60E+01
	85	1848.17	1.05E+03	38.66			1.05E+03	3.87E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
I-126	0.870	388.63	*	34.10	6.37E+02	6.94E+01
BA-133	0.350	53.16		2.20		
		79.62		2.62		
		81.00	*	34.06	3.14E+01	1.96E+00
		160.61		0.64		
		223.23		0.45		
		276.40		7.16		
		302.85	*	18.33	5.80E+01	4.59E+00
		356.02		62.05		
		383.85		8.94		
GD-153	0.987	69.67		2.54		
		97.43	*	30.20	-2.90E+00	6.64E-01
		103.18		21.44		
PB-210	1.000	46.54	*	4.25	1.80E+02	3.06E+01
PB-211	0.986	404.85	*	3.78	5.98E+02	4.45E+01
		427.09	*	1.76	6.54E+02	6.60E+01
		704.64		0.46		
		766.51		0.62		
		832.01	*	3.52	2.82E+02	3.69E+01
BI-214	0.951	609.31	*	44.80	1.91E+03	8.40E+01
		665.45	*	1.29	2.12E+03	1.18E+02
		768.36	*	4.80	2.05E+03	1.08E+02
		806.17	*	1.22	1.87E+03	1.42E+02
		934.06	*	3.03	1.94E+03	1.37E+02
		1120.29	*	14.80	1.98E+03	8.44E+01
		1155.19	*	1.64	2.04E+03	1.16E+02
		1207.68	*	0.49	1.50E+03	2.38E+02
		1238.11	*	5.86	1.93E+03	7.23E+01
		1280.96	*	1.44	1.79E+03	1.20E+02
		1377.67	*	3.92	1.98E+03	8.31E+01
		1385.31	*	0.89	1.77E+03	2.09E+02
		1401.50	*	1.55	1.75E+03	2.09E+02
		1407.98	*	2.80	1.63E+03	2.43E+02
		1415.80		0.48		
		1509.23	*	2.12	1.95E+03	1.13E+02
		1583.22	*	0.70	1.87E+03	1.66E+02
		1661.28	*	1.14	1.86E+03	1.29E+02
		1729.59	*	2.88	1.95E+03	9.19E+01
		1764.49	*	15.36	1.92E+03	7.01E+01
		1847.42	*	2.04	1.80E+03	9.54E+01
PB-214	0.962	53.23		1.11		
		241.98	*	7.50	1.22E+03	7.71E+01
		258.79	*	0.55	1.96E+03	2.35E+02
		295.21	*	18.50	1.96E+03	1.28E+02

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-214	0.962	351.92	*	35.80	2.12E+03	1.43E+02
		785.91	*	0.85	2.54E+03	3.55E+02
		839.03	*	0.63	-6.67E+01	1.72E+02
RN-219	0.994	130.59		0.12		
		271.23	*	10.80	5.09E+02	3.56E+01
		401.81	*	6.37	5.30E+02	3.74E+01
RA-223	0.996	122.32	*	1.19	2.78E+02	7.37E+01
		144.23	*	3.22	1.34E+03	8.85E+01
		154.21	*	5.62	5.69E+02	3.96E+01
		158.63	*	0.69	-1.91E+03	1.88E+02
		179.54		0.15		
		269.46	*	13.70	5.05E+02	3.32E+01
		288.18		0.16		
		323.87	*	3.93	2.29E+02	2.76E+01
		328.40		0.21		
		338.28	*	2.79	-3.54E+02	4.20E+01
		342.90		0.22		
		346.80		0.18		
		371.68		0.48		
TH-227	0.993	50.13	*	8.00	-3.10E+00	8.74E+00
		79.72		1.89		
		93.93	*	1.37	-5.80E+02	1.10E+02
		210.65	*	1.10	1.44E+02	1.09E+02
		235.97	*	12.70	-1.84E+01	9.84E+00
		256.25	*	7.01	4.98E+02	4.13E+01
		286.12	*	1.54	-9.57E+03	9.64E+02
		300.00	*	2.67	7.85E+02	8.45E+01
		304.51		1.23		
		329.85	*	2.69	-6.27E+02	9.53E+01
		334.38		1.05		
TH-228	0.721	84.37	*	1.23	2.24E+03	1.45E+02
		215.99		0.26		
PA-231	0.638	283.69		1.70		
		300.07	*	2.46	8.53E+02	6.38E+01
		302.65	*	2.20	4.79E+02	6.99E+01
		330.06	*	1.40	-1.20E+03	2.20E+02
TH-231	0.987	81.23	*	0.89	1.19E+03	9.93E+01
		84.21	*	6.60	4.18E+02	3.24E+01
		89.95	*	0.94	1.33E+02	1.95E+01
U-233	0.988	42.44		0.09		
		54.70		0.02		
		97.13	*	0.02	-3.74E+03	1.02E+03
U-235	0.709	109.16		1.54		
		143.76	*	10.96	3.93E+02	2.47E+01
		163.36		5.08		
		185.71	*	57.20	1.46E+02	8.51E+00
		194.94		0.63		
		202.11		1.08		
		205.31		5.01		
NP-237	0.897	57.10		0.39		
		86.48	*	12.40	9.70E+01	7.18E+00
		94.64	*	0.60	-1.33E+03	4.97E+02
		143.25	*	0.43	1.00E+04	7.81E+02

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
AM-243	0.991	74.66	*	68.20	2.67E+01	1.59E+00

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 3/30/2016 1:59:58PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.17	2.74375E+00	1.51		
	2	36.45	5.63792E-01	7.22	Tol.	I-125
	5	67.77	2.88319E+00	2.05	Tol.	CS-136
m	7	77.16	2.16547E+00	2.91		
	14	113.19	2.97917E-01	19.05	Tol.	TH-234
M	23	254.01	3.34801E-01	5.81	Sum	
m	28	274.74	1.96026E-01	8.83		
	33	315.13	1.99722E-01	16.93		
	42	445.31	1.44278E-01	11.84	Sum	
	43	455.25	1.31944E-03	2022.31	Sum	
	44	462.23	3.75000E-02	48.61	Sum	
	45	480.71	5.55420E-05	36036.1	Sum	
	46	487.38	7.10417E-02	31.98	D-Esc	
	47	511.12	4.39202E-01	5.31	Sum	
	48	533.89	4.06944E-02	36.86	Sum	
	49	580.35	2.01278E-01	10.09	Sum	
	52	703.53	1.75139E-01	9.63	Sum	
	53	720.29	1.25722E-01	12.39	Tol.	SB-126
	57	821.45	2.04028E-02	53.10		
	61	964.87	9.96111E-02	12.75	Sum	
	62	1052.40	7.57639E-02	16.63		
	63	1070.54	6.93056E-02	17.88	Sum	
	65	1134.28	5.22778E-02	24.13	Sum	
M	75	1539.41	7.78686E-02	9.50	Sum	
m	76	1544.07	5.73481E-02	11.24	Sum	
M	78	1595.37	4.56704E-02	12.39	Sum	
m	79	1599.90	5.40029E-02	10.94	Sum	
	81	1684.59	2.62222E-02	23.61	Sum	
	84	1839.13	-1.74333E-01	- 5.7	Sum	

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
I-126	0.87	388.63	*	34.10	6.37E+02	6.94E+01
BA-133	0.35	53.16		2.20		
		79.62		2.62		
		81.00	*	34.06	3.14E+01	1.96E+00
		160.61		0.64		
		223.23		0.45		
		276.40		7.16		
		302.85	*	18.33	5.80E+01	4.59E+00
		356.02		62.05		
		383.85		8.94		
GD-153	0.98	69.67		2.54		
		97.43	*	30.20	-2.90E+00	6.64E-01
		103.18		21.44		
PB-210	1.00	46.54	*	4.25	1.80E+02	3.06E+01
PB-211	0.98	404.85	*	3.78	5.98E+02	4.45E+01
		427.09	*	1.76	6.54E+02	6.60E+01
		704.64		0.46		
		766.51		0.62		
		832.01	*	3.52	2.82E+02	3.69E+01
BI-214	0.95	609.31	*	44.80	1.91E+03	8.40E+01
		665.45	*	1.29	2.12E+03	1.18E+02
		768.36	*	4.80	2.05E+03	1.08E+02
		806.17	*	1.22	1.87E+03	1.42E+02
		934.06	*	3.03	1.94E+03	1.37E+02
		1120.29	*	14.80	1.98E+03	8.44E+01
		1155.19	*	1.64	2.04E+03	1.16E+02
		1207.68	*	0.49	1.50E+03	2.38E+02
		1238.11	*	5.86	1.93E+03	7.23E+01
		1280.96	*	1.44	1.79E+03	1.20E+02
		1377.67	*	3.92	1.98E+03	8.31E+01
		1385.31	*	0.89	1.77E+03	2.09E+02
		1401.50	*	1.55	1.75E+03	2.09E+02
		1407.98	*	2.80	1.63E+03	2.43E+02
		1415.80		0.48		
		1509.23	*	2.12	1.95E+03	1.13E+02
		1583.22	*	0.70	1.87E+03	1.66E+02
		1661.28	*	1.14	1.86E+03	1.29E+02

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.95	1729.59	*	2.88	1.95E+03	9.19E+01
		1764.49	*	15.36	1.92E+03	7.01E+01
		1847.42	*	2.04	1.80E+03	9.54E+01
PB-214	0.96	53.23		1.11		
		241.98	*	7.50	1.22E+03	7.71E+01
		258.79	*	0.55	1.96E+03	2.35E+02
		295.21	*	18.50	1.96E+03	1.28E+02
		351.92	*	35.80	2.12E+03	1.43E+02
		785.91	*	0.85	2.54E+03	3.55E+02
		839.03	*	0.63	-6.67E+01	1.72E+02
RN-219	0.99	130.59		0.12		
		271.23	*	10.80	5.09E+02	3.56E+01
		401.81	*	6.37	5.30E+02	3.74E+01
RA-223	0.99	122.32	*	1.19	2.78E+02	7.37E+01
		144.23	*	3.22	1.34E+03	8.85E+01
		154.21	*	5.62	5.69E+02	3.96E+01
		158.63	*	0.69	-1.91E+03	1.88E+02
		179.54		0.15		
		269.46	*	13.70	5.05E+02	3.32E+01
		288.18		0.16		
		323.87	*	3.93	2.29E+02	2.76E+01
		328.40		0.21		
		338.28	*	2.79	-3.54E+02	4.20E+01
		342.90		0.22		
		346.80		0.18		
		371.68		0.48		
TH-227	0.99	50.13	*	8.00	-3.10E+00	8.74E+00
		79.72		1.89		
		93.93	*	1.37	-5.80E+02	1.10E+02
		210.65	*	1.10	1.44E+02	1.09E+02
		235.97	*	12.70	-1.84E+01	9.84E+00
		256.25	*	7.01	4.98E+02	4.13E+01
		286.12	*	1.54	-9.57E+03	9.64E+02
		300.00	*	2.67	7.85E+02	8.45E+01
		304.51		1.23		
		329.85	*	2.69	-6.27E+02	9.53E+01
		334.38		1.05		
TH-228	0.72	84.37	*	1.23	2.24E+03	1.45E+02
		215.99		0.26		
PA-231	0.63	283.69		1.70		
		300.07	*	2.46	8.53E+02	6.38E+01
		302.65	*	2.20	4.79E+02	6.99E+01
		330.06	*	1.40	-1.20E+03	2.20E+02
TH-231	0.98	81.23	*	0.89	1.19E+03	9.93E+01
		84.21	*	6.60	4.18E+02	3.24E+01
		89.95	*	0.94	1.33E+02	1.95E+01
U-233	0.98	42.44		0.09		
		54.70		0.02		
		97.13	*	0.02	-3.74E+03	1.02E+03
U-235	0.70	109.16		1.54		
		143.76	*	10.96	3.93E+02	2.47E+01
		163.36		5.08		
		185.71	*	57.20	1.46E+02	8.51E+00

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
U-235	0.70	194.94		0.63		
		202.11		1.08		
		205.31		5.01		
NP-237	0.89	57.10		0.39		
		86.48	*	12.40	9.70E+01	7.18E+00
		94.64	*	0.60	-1.33E+03	4.97E+02
		143.25	*	0.43	1.00E+04	7.81E+02
AM-243	0.99	74.66	*	68.20	2.67E+01	1.59E+00

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 1.000 sigma

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
X	CO-57	0.972			
X	NB-95m	0.302			
X	CD-109	0.924			
	I-126	0.870	6.37E+02	6.94E+01	
	BA-133	0.350	2.74E+01	1.95E+00	
X	EU-152	0.967			
?	GD-153	0.987	-2.90E+00	6.64E-01	
X	EU-154	0.987			
X	EU-155	0.322			
	PB-210	1.000	1.80E+02	3.06E+01	
	PB-211	0.986	4.49E+02	2.61E+01	
	BI-214	0.951	1.92E+03	2.42E+01	
	PB-214	0.962	1.59E+03	5.73E+01	
	RN-219	0.994	5.19E+02	2.58E+01	
	RA-223	0.996	4.09E+02	1.72E+01	
X	RA-226	0.993			
	TH-227	0.993	4.84E+02	2.77E+01	
	TH-228	0.721	1.53E+03	1.69E+02	
	PA-231	0.638	2.75E+02	3.52E+01	
	TH-231	0.987	1.34E+02	1.76E+01	
?	U-233	0.988	-3.74E+03	1.02E+03	
X	PA-234	0.996			
	U-235	0.709	1.59E+02	7.98E+00	
	NP-237	0.897	9.73E+01	6.46E+00	

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
AM-243	0.991	2.67E+01	1.59E+00	

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 3/30/2016 1:59:58PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.17	2.74375E+00	1.51		
	2	36.45	5.63792E-01	7.22	Tol.	I-125
	5	67.77	2.88319E+00	2.05	Tol.	CS-136
m	7	77.16	2.16547E+00	2.91		
	14	113.19	2.97917E-01	19.05	Tol.	TH-234
M	23	254.01	3.34801E-01	5.81	Sum	
m	28	274.74	1.96026E-01	8.83		
	33	315.13	1.99722E-01	16.93		
	42	445.31	1.44278E-01	11.84	Sum	
	43	455.25	1.31944E-03	2022.31	Sum	
	44	462.23	3.75000E-02	48.61	Sum	
	45	480.71	5.55420E-05	36036.1	Sum	
	46	487.38	7.10417E-02	31.98	D-Esc	
	47	511.12	4.39202E-01	5.31	Sum	
	48	533.89	4.06944E-02	36.86	Sum	
	49	580.35	2.01278E-01	10.09	Sum	
	52	703.53	1.75139E-01	9.63	Sum	
	53	720.29	1.25722E-01	12.39	Tol.	SB-126
	57	821.45	2.04028E-02	53.10		
	61	964.87	9.96111E-02	12.75	Sum	
	62	1052.40	7.57639E-02	16.63		
	63	1070.54	6.93056E-02	17.88	Sum	
	65	1134.28	5.22778E-02	24.13	Sum	
M	75	1539.41	7.78686E-02	9.50	Sum	
m	76	1544.07	5.73481E-02	11.24	Sum	

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M	78	1595.37	4.56704E-02	12.39	Sum	
m	79	1599.90	5.40029E-02	10.94	Sum	
	81	1684.59	2.62222E-02	23.61	Sum	
	84	1839.13	-1.74333E-01	- 5.7	Sum	

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BE-7	477.60		10.42	-6.76E+01	1.11E+02	1.11E+02
	NA-22	1274.53		99.94	-2.47E+01	6.69E+00	6.69E+00
@	NA-24	1368.63		100.00	1.00E+26	1.00E+26	1.00E+26
> @		2754.03		99.94	0.00E+00		0.00E+00
	K-40	1460.83		10.67	4.84E+00	6.44E+01	6.44E+01
@	AR-41	1293.59		99.10	1.00E+26	1.00E+26	1.00E+26
	CR-51	320.08		9.86	-5.41E+02	2.13E+02	2.13E+02
	MN-54	834.85		99.98	2.63E+01	8.55E+00	8.55E+00
	CO-56	846.77		99.93	-1.84E+01	2.34E+00	9.78E+00
		977.37		1.44	-7.11E+01		7.17E+02
		1037.84		13.99	-2.02E+01		6.92E+01
		1175.10		2.28	-2.30E+02		4.57E+02
		1238.28		67.56	2.75E+02		3.10E+01
		1360.21		4.33	-6.66E+01		2.28E+02
		1771.35		15.69	-2.63E+03		2.11E+02
		2015.18		3.08	0.00E+00		5.96E+00
		2034.76		7.89	0.00E+00		2.34E+00
@	MN-56	846.75		98.87	1.00E+26	1.00E+26	1.00E+26
@		1810.72		27.19	1.00E+26		1.00E+26
> @		2113.05		14.34	0.00E+00		0.00E+00
	CO-57	122.06	*	85.60	4.45E+00	5.31E+00	5.31E+00
		136.47		10.68	-1.79E+02		6.07E+01
		692.41		0.16	-3.19E+03		3.48E+03
	CO-58	810.78		99.45	-2.58E+01	1.21E+01	1.21E+01
		863.96		0.68	-2.00E+02		1.62E+03
		1674.73		0.52	-5.64E+03		1.49E+03
	FE-59	142.65		1.02	1.01E+04	2.68E+01	1.52E+03
		192.35		3.08	-2.53E+03		4.48E+02
		1099.25		56.50	-5.77E+00		2.68E+01
		1291.60		43.20	-9.54E+00		3.22E+01

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
CO-60	1173.24		99.90	-4.54E+00	6.27E+00	6.44E+00
	1332.50		99.98	1.58E+00		6.27E+00
@ CU-64	1345.77		0.47	1.00E+26	1.00E+26	1.00E+26
ZN-65	1115.55		50.60	-2.01E+02	4.04E+01	4.04E+01
SE-75	66.05		1.12	-1.55E+03	1.20E+01	6.69E+02
	96.73		3.42	6.39E+02		1.89E+02
	121.12		17.14	-1.57E+01		4.20E+01
	136.00		58.27	-1.38E+01		1.33E+01
	198.61		1.47	2.54E+02		5.51E+02
	264.66		58.50	-1.15E+02		1.20E+01
	279.54		24.79	-3.12E+02		3.03E+01
	303.93		1.31	-2.20E+04		6.63E+02
	400.66		11.37	-9.54E+01		8.67E+01
RB-83	520.39		44.70	-4.36E+01	1.72E+01	1.72E+01
	529.59		29.30	-8.01E+00		2.70E+01
	552.59		15.96	-1.09E+01		5.01E+01
@ BR-84	881.60		42.00	1.00E+26	1.00E+26	1.00E+26
@	1897.60		14.90	1.00E+26		1.00E+26
KR-85	514.01		0.43	-9.02E+02	1.40E+03	1.40E+03
@ KR-85M	151.20		75.00	1.00E+26	1.00E+26	1.00E+26
@	304.87		14.00	1.00E+26		1.00E+26
SR-85	514.01		95.70	-7.24E+00	1.13E+01	1.13E+01
@ SR-85m	151.19		12.90	1.00E+26	1.00E+26	1.00E+26
@	231.86		84.40	1.00E+26		1.00E+26
RB-86	1077.00		8.64	-2.56E+02	5.50E+02	5.50E+02
@ KR-87	402.59		49.60	1.00E+26	1.00E+26	1.00E+26
@	673.83		1.89	1.00E+26		1.00E+26
@	845.44		7.30	1.00E+26		1.00E+26
@	1175.40		1.11	1.00E+26		1.00E+26
@	1740.52		2.04	1.00E+26		1.00E+26
@ KR-88	165.98		3.10	1.00E+26	1.00E+26	1.00E+26
@	196.30		26.00	1.00E+26		1.00E+26
@	362.23		2.25	1.00E+26		1.00E+26
@	834.83		13.00	1.00E+26		1.00E+26
@	985.78		1.52	1.00E+26		1.00E+26
@	1141.33		1.28	1.00E+26		1.00E+26
@	1179.51		1.00	1.00E+26		1.00E+26
@	1250.67		1.12	1.00E+26		1.00E+26
@	1369.50		1.48	1.00E+26		1.00E+26
@	1518.39		2.15	1.00E+26		1.00E+26
@	1529.77		10.90	1.00E+26		1.00E+26
@ RB-88	898.03		14.04	1.00E+26	1.00E+26	1.00E+26
@	1836.01		21.40	1.00E+26		1.00E+26
Y-88	898.04		93.68	1.19E+00	7.65E+00	1.07E+01
	1836.06		99.24	-5.16E+00		7.65E+00
NB-94x	702.62		97.90	-1.68E+00	5.91E+00	5.91E+00
	871.09		99.90	1.89E-01		6.64E+00
NB-95	765.81		99.81	-2.05E+00	3.04E+01	3.04E+01
NB-95m	204.12		2.33	-1.75E+06	9.40E+05	1.01E+07
	235.69	*	24.80	-3.82E+05		9.40E+05
ZR-95	724.20		44.17	-6.51E+00	1.84E+01	2.33E+01
	756.73		54.46	-9.71E-01		1.84E+01

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
NB-96	460.04		26.62	-4.27E+17	6.92E+17	2.42E+18
	568.87		57.97	1.31E+17		1.09E+18
	778.22		96.45	-1.21E+19		6.92E+17
	849.93		20.40	-2.77E+18		3.59E+18
	1200.23		19.96	-5.42E+18		3.70E+18
MO-99	140.51		4.52	-1.61E+08	4.99E+07	1.44E+08
	181.06		6.08	-6.69E+08		1.07E+08
	366.42		1.20	-4.10E+07		4.63E+08
	739.50		12.13	3.56E+07		4.99E+07
	777.92		4.28	-2.51E+09		1.44E+08
@ TC-99M	140.51		89.06	1.00E+26	1.00E+26	1.00E+26
RU-103	443.80		3.27	5.31E+02	1.49E+01	4.48E+02
	497.08		90.90	-7.28E+00		1.49E+01
	610.33		5.75	3.95E+04		1.10E+03
RHRU-106	621.93		9.93	-3.15E+01	5.25E+01	5.25E+01
	1050.41		1.56	-1.71E+02		4.57E+02
AG-108M	433.94		90.50	-1.32E+01	6.05E+00	6.05E+00
	614.28		89.90	-5.21E+02		2.37E+01
	722.94		90.90	-1.17E+00		6.20E+00
CD-109	88.03	*	3.61	3.62E+02	1.31E+02	1.31E+02
AG-110M	116.48		1.36	-2.13E+02	5.89E+00	4.40E+02
	446.81		3.72	4.93E+01		1.72E+02
	620.36		2.79	-6.52E+03		2.03E+02
	657.76		94.00	-3.33E+01		5.89E+00
	677.62		10.28	8.30E+00		5.48E+01
	687.02		6.39	2.81E+01		8.94E+01
	706.68		16.32	-1.87E+01		4.14E+01
	744.28		4.70	7.15E+01		1.34E+02
	763.94		22.14	-7.24E+00		4.72E+01
	818.03		7.29	-2.07E+01		9.48E+01
	884.68		72.19	7.76E-01		1.09E+01
	937.49		34.13	1.99E+02		3.30E+01
	1384.30		24.12	-1.09E+01		5.30E+01
	1475.79		3.97	2.52E+01		2.08E+02
	1505.04		12.95	-6.03E+01		9.54E+01
	1562.30		1.02	7.40E+01		7.64E+02
SN-113	255.06		1.82	2.99E+03	1.23E+01	4.95E+02
	391.69		64.00	-1.05E+01		1.23E+01
IN-114	190.27		15.40	-2.57E+02	8.60E+01	8.60E+01
	558.43		4.40	3.77E+01		2.54E+02
	725.24		4.40	-1.00E+02		2.70E+02
SB-122	564.24		69.30	-1.52E+06	1.07E+07	1.07E+07
I-124	602.72		60.50	-1.12E+07	8.29E+04	8.29E+04
	722.78		9.98	8.14E+05		5.35E+05
	1509.49		2.99	1.23E+07		3.35E+06
	1691.02		10.40	2.77E+05		5.41E+05
SB-124	602.73		97.80	-1.38E+03	1.02E+01	1.02E+01
	645.85		7.38	-3.62E+01		1.21E+02
	709.32		1.35	-7.51E+02		7.46E+02
	713.78		2.27	-9.76E+02		4.26E+02
	722.79		10.76	1.50E+02		9.89E+01
	968.20		1.89	-4.93E+02		6.89E+02

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-124	1045.13		1.84	-7.04E+02	1.02E+01	5.99E+02
		1325.51		1.62	-1.28E+02		7.09E+02
		1355.18		1.04	-1.88E+02		1.10E+03
		1368.16		2.62	-9.72E+02		4.48E+02
		1436.56		1.23	-4.04E+02		1.01E+03
		1690.98		47.30	1.21E+01		2.37E+01
	I-125	30.98		20.10	-1.77E+02	7.54E+01	7.54E+01
		35.49		6.68	9.89E+02		2.00E+02
	SB-125	176.31		6.82	-4.77E+01	2.22E+01	8.72E+01
		380.45		1.52	-4.20E+02		3.50E+02
		427.88		29.60	5.29E+01		2.22E+01
		463.36		10.49	-2.64E+01		5.22E+01
		600.60		17.86	-3.77E+03		3.09E+01
		606.72		5.03	-7.87E+03		4.88E+02
		635.95		11.31	3.08E+01		4.55E+01
		671.45		1.80	-2.56E+02		2.81E+02
	@ XE-125	188.42		54.00	1.00E+26	1.00E+26	1.00E+26
	@	243.38		30.10	1.00E+26		1.00E+26
+	I-126	388.63	*	34.10	6.37E+02	2.30E+02	2.30E+02
	SB-126	414.80		83.30	-2.37E+02	1.05E+02	1.56E+02
		666.30		99.60	-1.30E+02		1.41E+02
		695.00		99.60	-2.03E+02		1.05E+02
		697.00		28.90	-6.11E+02		3.67E+02
		720.50		53.80	-5.72E+01		2.26E+02
		856.70		17.60	-1.47E+02		7.71E+02
	I-129	39.58		7.45	-2.23E+02	6.89E+01	6.89E+01
	@ I-130	418.01		34.15	1.00E+26	1.00E+26	1.00E+26
	@	536.09		99.00	1.00E+26		1.00E+26
	@	668.54		96.10	1.00E+26		1.00E+26
	@	739.48		82.30	1.00E+26		1.00E+26
	@	1157.47		11.30	1.00E+26		1.00E+26
	I-131	284.30		6.14	3.58E+04	7.12E+02	1.14E+04
		364.49		81.70	-2.30E+02		7.12E+02
		636.99		7.17	4.10E+03		8.12E+03
		722.91		1.77	-7.11E+03		3.76E+04
	XE-131M	163.93		1.91	-1.67E+03	7.78E+03	7.78E+03
	TE-132	111.76		1.74	3.90E+07	9.77E+05	3.83E+07
		116.30		1.96	-1.98E+07		4.10E+07
		228.16		88.00	-4.90E+06		9.77E+05
+	BA-133	53.16		2.20	-1.87E+01	1.27E+01	1.96E+02
		79.62		2.62	-2.91E+02		2.28E+02
		81.00	*	34.06	3.14E+01		1.27E+01
		160.61		0.64	-3.56E+01		9.36E+02
		223.23		0.45	-2.07E+02		1.23E+03
		276.40		7.16	-1.27E+03		8.13E+01
		302.85	*	18.33	5.80E+01		2.14E+01
		356.02		62.05	-1.13E+02		1.91E+01
		383.85		8.94	-7.24E+01		5.96E+01
	I-133	529.87		87.00	-2.62E+19	8.87E+19	8.87E+19
		875.33		4.51	-1.03E+20		2.25E+21
	CS-134	475.35		1.47	-3.39E+02	6.85E+00	3.65E+02
		563.23		8.38	6.35E+00		6.50E+01

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
CS-134	569.32	15.43	1.12E+01	6.85E+00	3.57E+01
	604.70	97.56	-5.93E+02		1.28E+01
	795.84	85.44	-1.65E+01		6.85E+00
	801.93	8.73	-1.13E+02		8.22E+01
	1038.57	1.00	-1.67E+02		6.20E+02
	1167.94	1.80	-6.83E+02		3.73E+02
	1365.15	3.04	-5.88E+01		2.11E+02
@ I-134	405.45	7.35	1.00E+26	1.00E+26	1.00E+26
@	540.83	7.60	1.00E+26		1.00E+26
@	595.36	11.20	1.00E+26		1.00E+26
@	621.79	10.60	1.00E+26		1.00E+26
@	677.34	7.80	1.00E+26		1.00E+26
@	847.03	95.40	1.00E+26		1.00E+26
@	884.09	64.90	1.00E+26		1.00E+26
@	1072.55	15.00	1.00E+26		1.00E+26
@	1136.16	9.20	1.00E+26		1.00E+26
CS-135	787.20	100.00	2.23E+01	6.29E+00	6.86E+00
	846.10	95.90	-9.81E+00		6.29E+00
@ I-135	417.63	3.55	1.00E+26	1.00E+26	1.00E+26
@	546.56	7.20	1.00E+26		1.00E+26
@	836.80	6.73	1.00E+26		1.00E+26
@	1038.76	8.00	1.00E+26		1.00E+26
@	1124.00	3.64	1.00E+26		1.00E+26
@	1131.51	22.74	1.00E+26		1.00E+26
@	1260.41	28.90	1.00E+26		1.00E+26
@	1457.56	8.73	1.00E+26		1.00E+26
@	1678.03	9.62	1.00E+26		1.00E+26
@	1706.46	4.13	1.00E+26		1.00E+26
@	1791.20	7.77	1.00E+26		1.00E+26
@ XE-135	249.79	90.20	1.00E+26	1.00E+26	1.00E+26
@	608.18	2.90	1.00E+26		1.00E+26
@ XE-135M	526.56	80.50	1.00E+26	1.00E+26	1.00E+26
CS-136	66.88	4.80	-2.48E+03	1.09E+02	2.32E+03
	86.36	5.20	1.25E+04		2.05E+03
	153.25	5.77	-1.03E+03		2.08E+03
	163.92	3.40	-6.78E+02		3.16E+03
	176.60	10.00	-5.07E+02		1.05E+03
	273.65	11.10	9.77E+03		1.29E+03
	340.55	42.30	5.26E+02		2.54E+02
	818.51	100.00	-1.01E+01		1.09E+02
	1048.07	80.00	-9.08E+01		1.46E+02
	1235.36	20.10	-3.95E+03		1.16E+03
CS-137	661.66	85.10	-2.18E+01	7.14E+00	7.14E+00
@ CS-138	138.10	1.49	1.00E+26	1.00E+26	1.00E+26
@	227.76	1.51	1.00E+26		1.00E+26
@	408.98	4.66	1.00E+26		1.00E+26
@	462.80	30.70	1.00E+26		1.00E+26
@	547.00	10.76	1.00E+26		1.00E+26
@	871.80	5.11	1.00E+26		1.00E+26
@	1009.78	29.80	1.00E+26		1.00E+26
@	1147.22	1.24	1.00E+26		1.00E+26
@	1343.59	1.14	1.00E+26		1.00E+26

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
@ CS-138	1435.86		76.30	1.00E+26	1.00E+26	1.00E+26
LA-138	788.74		33.60	-6.34E+00	9.92E+00	2.03E+01
	1435.80		66.40	-2.25E+00		9.92E+00
@ BA-139	165.86		23.60	1.00E+26	1.00E+26	1.00E+26
CE-139	165.85		79.90	-6.77E+00	9.59E+00	9.59E+00
BA-140	162.66		6.21	-5.60E+02	4.33E+02	1.90E+03
	304.85		4.30	-2.75E+04		2.71E+03
	423.72		3.10	-2.84E+03		4.13E+03
	437.58		1.93	-1.00E+04		5.51E+03
	537.26		24.39	-1.25E+02		4.33E+02
LA-140	328.76		20.32	1.56E+11	6.13E+10	2.29E+11
	432.49		2.90	-2.77E+12		1.50E+12
	487.02		45.50	3.95E+10		9.58E+10
	751.64		4.33	-5.87E+11		9.92E+11
	815.77		23.30	-6.98E+11		1.93E+11
	867.85		5.50	1.33E+11		9.36E+11
	919.55		2.66	-7.35E+11		1.94E+12
	925.19		6.90	-7.13E+12		7.39E+11
	1596.21		95.40	-3.65E+10		6.13E+10
CE-141	145.44		48.20	-4.55E+01	4.45E+01	4.45E+01
CE-144	80.12		1.36	-4.06E+03	5.71E+01	4.56E+02
	133.51		11.09	1.97E+01		5.71E+01
PM-144	476.78		41.98	-1.08E+01	5.48E+00	1.37E+01
	618.01		98.59	-9.19E+02		5.50E+00
	694.00		0.55	-1.32E+03		9.76E+02
	696.49		99.49	-9.43E+00		5.48E+00
	778.57		1.51	-7.06E+03		4.04E+02
	814.14		0.55	-4.89E+03		1.15E+03
PM-146	146.20		0.22	-6.33E+03	8.29E+00	3.07E+03
	453.88		66.00	-3.20E+00		8.29E+00
	589.80		0.43	-1.26E+03		1.20E+03
	633.25		1.12	1.53E+02		4.45E+02
	735.93		22.80	-2.17E+01		2.29E+01
	747.24		17.71	3.29E+00		3.08E+01
ND-147	91.11		27.90	-4.12E+03	5.28E+02	5.28E+02
	319.41		1.95	-2.24E+04		8.54E+03
	398.15		0.87	-5.83E+04		2.18E+04
	439.89		1.20	-1.78E+04		1.44E+04
	531.02		13.09	5.24E+02		1.29E+03
EU-152	121.78	*	28.42	1.17E+01	1.40E+01	1.40E+01
	244.70		7.49	-1.59E+02		1.13E+02
	295.94	*	0.44	8.29E+04		9.38E+02
	344.28		26.58	-1.94E+03		2.05E+01
	411.12		2.23	-9.25E+02		2.70E+02
	443.98		3.09	1.79E+02		1.80E+02
	688.67		0.83	-4.06E+01		5.89E+02
	778.90		12.96	-5.51E+02		4.28E+01
	867.39		4.15	6.08E+00		1.59E+02
	964.13	*	14.50	5.23E+01		2.87E+01
	1005.28		0.65	-5.67E+01		9.77E+02
	1085.87		10.16	1.33E+01		6.21E+01
	1089.70		1.71	-6.85E+01		3.68E+02

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	EU-152	1112.12		13.54	-9.79E+02	1.40E+01	4.81E+01
		1212.95		1.40	-4.36E+02		4.83E+02
		1299.12		1.63	1.77E+02		3.82E+02
		1408.01	*	20.87	2.21E+02		2.17E+01
+	GD-153	69.67		2.54	1.06E+03	1.30E+01	2.67E+02
		97.43	*	30.20	-2.90E+00		1.30E+01
		103.18		21.44	-2.26E+01		2.21E+01
	EU-154	123.07	*	40.78	8.21E+00	9.81E+00	9.81E+00
		247.93		6.95	-7.29E+02		7.69E+01
		444.49	*	0.56	1.06E+03		5.47E+02
		582.10		0.89	9.66E+02		6.43E+02
		591.76		4.99	-9.87E+01		1.03E+02
		692.42		1.80	-2.44E+02		2.67E+02
		723.30		20.22	-5.33E+00		2.82E+01
		756.80		4.57	-6.44E+00		1.22E+02
		815.53		0.52	-4.40E+03		1.11E+03
		845.39		0.59	-1.59E+03		1.05E+03
		873.19		12.27	7.77E+00		5.50E+01
		892.78		0.52	9.13E+01		1.34E+03
		904.08		0.90	1.46E+02		7.95E+02
		996.26		10.59	2.95E+01		6.11E+01
		1004.72		18.00	-2.97E+00		3.55E+01
		1246.15		0.87	-1.37E+04		8.51E+02
		1274.44		35.19	-6.81E+01		1.85E+01
		1494.05		0.70	3.31E+02		1.12E+03
		1596.49		1.80	2.56E+02		4.20E+02
	EU-155	45.30		1.32	8.76E+02	1.45E+01	3.82E+02
		60.01		1.13	-6.06E+02		3.78E+02
		86.54	*	30.70	4.01E+01		1.45E+01
		105.31		21.15	-1.34E+01		1.96E+01
	W-187	72.00		11.10	-5.50E+19	1.19E+18	2.68E+18
		134.25		8.80	3.03E+17		4.17E+18
		479.55		21.80	-8.45E+17		1.68E+18
		618.26		6.28	-8.57E+20		5.13E+18
		625.52		1.09	-2.44E+19		2.85E+19
		685.73		27.30	4.13E+17		1.19E+18
		772.89		4.12	-6.43E+19		1.60E+19
	IR-192	295.96		28.66	1.93E+03	1.08E+01	7.31E+01
		308.46		30.00	-2.53E+01		2.91E+01
		316.51		82.81	-1.31E+01		1.08E+01
		468.07		47.83	-3.42E+00		1.83E+01
		588.58		4.51	-1.59E+02		1.91E+02
		604.41		8.23	-1.12E+04		2.43E+02
		612.47		5.31	-1.07E+04		7.53E+02
	TL-201	135.34		2.56	-1.17E+06	1.71E+07	6.48E+07
		167.43		10.00	-9.03E+06		1.71E+07
	HG-203	279.20		81.46	-1.80E+02	1.52E+01	1.52E+01
	TL-208	277.36		6.31	-1.54E+03	6.72E+00	8.96E+01
		510.77		22.60	-1.67E+01		2.66E+01
		583.19		84.50	-5.57E-01		6.72E+00
		763.13		1.81	-1.58E+02		3.61E+02
		860.56		12.42	-8.41E+00		5.12E+01

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PB-210	46.54	*	4.25	1.80E+02	1.12E+02	1.12E+02
	BI-211	351.06		12.91	5.87E+03	1.42E+02	1.42E+02
+	PB-211	404.85	*	3.78	5.98E+02	1.14E+02	1.14E+02
		427.09	*	1.76	6.54E+02		2.05E+02
		704.64		0.46	2.40E+03		1.25E+03
		766.51		0.62	-7.59E+01		1.64E+03
		832.01	*	3.52	2.82E+02		1.44E+02
	BI-212	727.33		6.58	-5.97E+01	7.81E+01	7.81E+01
		785.37		1.10	-4.00E+02		6.25E+02
		1078.62		0.56	-7.36E+02		1.06E+03
		1620.50		1.49	1.44E+02		3.99E+02
	PB-212	115.18		0.59	-1.85E+01	1.78E+01	7.26E+02
		238.63		43.30	-6.70E+01		1.78E+01
		300.09		3.28	-6.52E+03		2.04E+02
+	BI-214	609.31	*	44.80	1.91E+03	9.16E+00	9.16E+00
		665.45	*	1.29	2.12E+03		3.09E+02
		768.36	*	4.80	2.05E+03		1.18E+02
		806.17	*	1.22	1.87E+03		3.51E+02
		934.06	*	3.03	1.94E+03		1.31E+02
		1120.29	*	14.80	1.98E+03		3.96E+01
		1155.19	*	1.64	2.04E+03		2.71E+02
		1207.68	*	0.49	1.50E+03		7.31E+02
		1238.11	*	5.86	1.93E+03		7.88E+01
		1280.96	*	1.44	1.79E+03		3.92E+02
		1377.67	*	3.92	1.98E+03		1.14E+02
		1385.31	*	0.89	1.77E+03		5.07E+02
		1401.50	*	1.55	1.75E+03		2.72E+02
		1407.98	*	2.80	1.63E+03		1.60E+02
		1415.80		0.48	-6.93E+03		1.49E+03
		1509.23	*	2.12	1.95E+03		3.32E+02
		1583.22	*	0.70	1.87E+03		5.69E+02
		1661.28	*	1.14	1.86E+03		3.48E+02
		1729.59	*	2.88	1.95E+03		1.15E+02
		1764.49	*	15.36	1.92E+03		2.02E+01
		1847.42	*	2.04	1.80E+03		1.72E+02
+	PB-214	53.23		1.11	-3.66E+01	1.79E+01	3.85E+02
		241.98	*	7.50	1.22E+03		8.32E+01
		258.79	*	0.55	1.96E+03		7.36E+02
		295.21	*	18.50	1.96E+03		2.21E+01
		351.92	*	35.80	2.12E+03		1.79E+01
		785.91	*	0.85	2.54E+03		5.82E+02
		839.03	*	0.63	-6.67E+01		8.09E+02
+	RN-219	130.59		0.12	-1.12E+03	3.80E+01	4.54E+03
		271.23	*	10.80	5.09E+02		3.80E+01
		401.81	*	6.37	5.30E+02		6.70E+01
	RN-220	549.73		0.11	-7.82E+02	4.63E+03	4.63E+03
+	RA-223	122.32	*	1.19	2.78E+02	2.98E+01	3.32E+02
		144.23	*	3.22	1.34E+03		1.80E+02
		154.21	*	5.62	5.69E+02		9.09E+01
		158.63	*	0.69	-1.91E+03		7.39E+02
		179.54		0.15	-3.42E+04		3.86E+03
		269.46	*	13.70	5.05E+02		2.98E+01

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	RA-223	288.18		0.16	-1.62E+05	2.98E+01	3.52E+03
		323.87	*	3.93	2.29E+02		1.02E+02
		328.40		0.21	6.44E+03		2.91E+03
		338.28	*	2.79	-3.54E+02		1.41E+02
		342.90		0.22	-2.62E+04		2.51E+03
		346.80		0.18	-3.12E+05		3.06E+03
		371.68		0.48	9.22E+01		1.05E+03
	RA-224	240.99		3.97	-7.36E+02	2.16E+02	2.16E+02
	RA-226	186.10	*	3.50	2.39E+03	1.82E+02	1.82E+02
+	TH-227	50.13	*	8.00	-3.10E+00	4.09E+01	4.09E+01
		79.72		1.89	-3.99E+02		3.12E+02
		93.93	*	1.37	-5.80E+02		2.63E+02
		210.65	*	1.10	1.44E+02		4.91E+02
		235.97	*	12.70	-1.84E+01		4.54E+01
		256.25	*	7.01	4.98E+02		6.19E+01
		286.12	*	1.54	-9.57E+03		6.65E+02
		300.00	*	2.67	7.85E+02		1.58E+02
		304.51		1.23	-1.17E+04		4.91E+02
		329.85	*	2.69	-6.27E+02		1.46E+02
		334.38		1.05	-7.18E+02		5.44E+02
	AC-228	99.50		1.28	-3.21E+02	2.62E+01	3.35E+02
		129.07		2.45	-9.26E+01		2.20E+02
		153.98		0.74	4.34E+03		8.86E+02
		209.25		3.88	-3.61E+01		1.49E+02
		270.24		3.43	3.56E+03		2.49E+02
		327.90		3.06	8.75E+02		2.07E+02
		332.37		0.40	9.99E+02		1.54E+03
		338.32		11.25	-7.53E+00		5.21E+01
		409.46		1.94	-7.29E+02		3.41E+02
		463.01		4.44	-6.00E+01		1.19E+02
		508.96		0.47	-1.47E+03		1.27E+03
		562.50		0.87	1.34E+02		5.97E+02
		755.32		1.00	2.03E+02		5.51E+02
		772.29		1.50	-2.14E+03		6.77E+02
		782.14		0.50	-2.56E+03		1.32E+03
		794.95		4.34	-1.95E+02		1.27E+02
		830.49		0.55	-9.47E+02		1.30E+03
		835.71		1.68	1.54E+03		4.55E+02
		840.38		0.94	-6.81E+02		7.10E+02
		904.20		0.78	1.67E+02		9.06E+02
		911.21		26.60	1.02E+01		2.62E+01
		964.77		5.11	1.59E+02		1.34E+02
		968.97		16.20	-3.45E+01		4.25E+01
		1247.08		0.50	-2.51E+04		1.27E+03
		1459.14		0.80	2.16E+02		8.55E+02
		1495.91		0.89	2.41E+02		8.71E+02
		1580.54		0.61	2.58E+03		1.28E+03
		1588.21		3.27	-2.88E+02		2.41E+02
		1630.63		1.60	3.64E+01		3.53E+02
+	TH-228	84.37	*	1.23	2.24E+03	3.39E+02	3.39E+02
		215.99		0.26	-6.78E+02		2.11E+03
	TH-229	75.09		0.61	1.02E+04	1.33E+02	1.08E+03

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	TH-229	86.35		3.90	9.06E+02	1.33E+02	1.49E+02
		124.60		1.43	-1.49E+02		3.72E+02
		136.99		1.18	-1.35E+03		4.78E+02
		148.15		0.88	-3.32E+03		6.70E+02
		154.34		0.77	4.27E+03		8.53E+02
		156.41		1.19	3.13E+03		5.58E+02
		193.51		4.41	-8.91E+02		1.33E+02
		204.69		0.60	-3.67E+02		9.63E+02
		210.85		2.77	-4.77E+01		2.07E+02
+	PA-231	283.69		1.70	9.50E+02	1.71E+02	3.49E+02
		300.07	*	2.46	8.53E+02		1.71E+02
		302.65	*	2.20	4.79E+02		1.77E+02
		330.06	*	1.40	-1.20E+03		2.80E+02
+	TH-231	81.23	*	0.89	1.19E+03	6.32E+01	4.83E+02
		84.21	*	6.60	4.18E+02		6.32E+01
		89.95	*	0.94	1.33E+02		4.18E+02
	TH-232	63.81		0.27	-9.46E+03	1.65E+03	1.65E+03
	U-232	57.78		0.20	-3.45E+03	2.08E+03	2.08E+03
		129.08		0.07	-3.29E+03		7.83E+03
	PA-233	75.35		1.39	4.45E+03	1.38E+01	4.73E+02
		86.81		1.97	3.10E+02		2.75E+02
		103.97		0.87	-5.99E+02		4.64E+02
		271.48		0.33	3.97E+04		2.63E+03
		300.34		6.62	-3.23E+03		1.01E+02
		312.17		38.60	-6.89E+00		1.38E+01
		340.81		4.47	2.72E+02		1.31E+02
		375.45		0.68	3.05E+02		7.57E+02
		398.62		1.39	-9.31E+02		4.50E+02
		415.76		1.75	-6.60E+01		3.45E+02
+	U-233	42.44		0.09	-1.94E+04	5.44E+03	5.44E+03
		54.70		0.02	-2.76E+03		2.37E+04
		97.13	*	0.02	-3.74E+03		1.68E+04
	PA-234	62.70		1.55	-2.00E+03	3.04E+01	2.84E+02
		99.86		3.19	-2.18E+02		1.33E+02
		125.46		0.78	-3.50E+02		6.84E+02
		131.30		18.00	2.57E+00		3.04E+01
		140.50		0.81	-7.98E+02		7.13E+02
		152.71		5.97	-1.22E+02		1.09E+02
		159.48	*	0.65	-2.03E+03		7.84E+02
		170.85		0.50	-1.78E+02		1.15E+03
		186.15	*	1.76	4.75E+03		3.63E+02
		193.73		0.49	-8.65E+03		1.20E+03
		200.97		0.90	-1.33E+01		6.48E+02
		203.12		1.23	-3.73E+01		4.74E+02
		227.00		9.99	-1.52E+01		5.50E+01
		245.37		0.75	-2.40E+03		1.05E+03
		249.22		2.47	-3.00E+03		2.12E+02
		272.28	*	1.08	5.09E+03		3.80E+02
		293.79		2.99	1.10E+04		4.15E+02
		330.40	*	0.77	-2.19E+03		5.09E+02
		369.50		2.47	6.24E+01		2.05E+02
		372.00		1.21	9.69E+01		4.19E+02

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PA-234	458.68		1.13	5.74E+02	3.04E+01	4.83E+02
		506.75		1.29	-9.46E+02		4.28E+02
		513.40		1.10	-2.36E+02		5.48E+02
		521.40		0.74	-1.37E+03		6.67E+02
		565.20		1.03	-4.93E+01		5.04E+02
		569.32		11.80	1.39E+01		4.43E+01
		602.60		0.54	-1.33E+05		9.80E+02
		663.90		0.54	-2.05E+03		1.21E+03
		666.50	*	1.16	2.36E+03		3.44E+02
		669.70		0.99	-3.24E+02		6.45E+02
		692.60		1.24	-3.50E+02		3.83E+02
		699.03		3.61	-1.50E+02		1.47E+02
		705.90		2.27	-1.17E+02		2.54E+02
		730.90		0.63	1.33E+01		8.20E+02
		733.39		6.90	-3.97E+01		7.42E+01
		738.00		1.15	-6.06E+01		4.55E+02
		742.81		2.06	2.11E+02		2.63E+02
		755.00		1.22	2.31E+02		4.54E+02
		780.40		0.90	-1.98E+03		6.27E+02
		786.27	*	1.19	1.82E+03		4.16E+02
		794.90		1.34	-6.32E+02		4.12E+02
		796.10		2.58	-5.19E+02		2.16E+02
		805.52		3.14	7.29E+02		2.26E+02
		819.20		1.88	-4.44E+01		3.15E+02
		824.65		3.12	-4.32E+02		1.94E+02
		831.50	*	4.12	2.41E+02		1.23E+02
		876.00		2.52	2.35E+00		2.66E+02
		880.50		10.40	1.91E+01		6.51E+01
		883.24		9.58	3.87E+00		7.06E+01
		898.67		3.24	2.72E+00		2.15E+02
		926.00		16.80	-4.05E+02		3.88E+01
		946.18		15.00	-4.38E+01		4.20E+01
		980.48		5.15	1.24E+01		1.22E+02
		984.20		1.62	-4.01E+00		3.85E+02
		1028.70		0.57	1.72E+02		1.08E+03
		1083.20		0.50	2.19E+01		1.24E+03
		1352.90		1.15	-6.50E+01		5.29E+02
		1393.90		2.06	-1.69E+03		2.99E+02
		1668.40		0.76	-2.53E+03		8.75E+02
		1693.80		0.69	3.93E+02		7.99E+02
	PA-234M	766.36		0.29	-1.60E+02	7.68E+02	3.46E+03
		811.00		0.51	-2.93E+03		1.38E+03
		1001.03		0.84	4.21E+02		7.68E+02
	TH-234	63.29		4.84	-5.95E+02	8.23E+01	9.18E+01
		83.30		0.08	2.27E+04		7.73E+03
		92.59		5.58	-2.27E+02		8.23E+01
		112.81		0.28	1.36E+03		1.52E+03
	U-234	53.20		0.12	-3.30E+02	3.48E+03	3.48E+03
		120.90		0.03	-7.25E+03		1.54E+04
+	U-235	109.16		1.54	-8.46E+01	1.12E+01	2.67E+02
		143.76	*	10.96	3.93E+02		5.29E+01
		163.36		5.08	-3.01E+01		1.15E+02

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	U-235	185.71	*	57.20	1.46E+02	1.12E+01	1.12E+01
		194.94		0.63	-4.12E+03		9.34E+02
		202.11		1.08	6.53E+01		5.38E+02
		205.31		5.01	-5.27E+01		1.15E+02
+	NP-237	57.10		0.39	-2.22E+03	3.52E+01	1.06E+03
		86.48	*	12.40	9.70E+01		3.52E+01
		94.64	*	0.60	-1.33E+03		5.99E+02
		143.25	*	0.43	1.00E+04		1.35E+03
	NP-239	106.12		27.20	-1.56E+08	1.70E+08	1.70E+08
		209.75		3.42	-5.00E+08		1.93E+09
		228.18		10.76	-2.93E+09		5.84E+08
		277.60		14.38	-7.84E+09		4.48E+08
		334.31		2.07	-4.17E+09		3.16E+09
	AM-241	59.54		35.90	-1.58E+01	1.16E+01	1.16E+01
	CM-241	132.41		3.90	1.88E+02	2.38E+01	4.54E+02
		165.01		3.40	-2.46E+02		5.51E+02
		205.88		2.67	-2.29E+02		6.92E+02
		430.63		4.06	-5.00E+02		4.82E+02
		463.27		1.23	-6.96E+02		1.38E+03
		471.80		71.30	6.59E+00		2.38E+01
		636.88		1.53	5.48E+02		1.04E+03
+	AM-243	74.66	*	68.20	2.67E+01	6.69E+00	6.69E+00

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.60	10.42	1.11E+02	1.11E+02	-6.76E+01	5.50E+01
	NA-22	1274.53	99.94	6.69E+00	6.69E+00	-2.47E+01	3.30E+00
@	NA-24	1368.63	100.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
>@		2754.03	99.94	0.00E+00		0.00E+00	0.00E+00
	K-40	1460.83	10.67	6.44E+01	6.44E+01	4.84E+00	3.18E+01
@	AR-41	1293.59	99.10	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	CR-51	320.08	9.86	2.13E+02	2.13E+02	-5.41E+02	1.06E+02
	MN-54	834.85	99.98	8.55E+00	8.55E+00	2.63E+01	4.25E+00
	CO-56	846.77	99.93	9.78E+00	2.34E+00	-1.84E+01	4.85E+00
		977.37	1.44	7.17E+02		-7.11E+01	3.55E+02
		1037.84	13.99	6.92E+01		-2.02E+01	3.42E+01
		1175.10	2.28	4.57E+02		-2.30E+02	2.26E+02
		1238.28	67.56	3.10E+01		2.75E+02	1.54E+01

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CO-56	1360.21		4.33	2.28E+02	2.34E+00	-6.66E+01	1.13E+02
	1771.35		15.69	2.11E+02		-2.63E+03	1.05E+02
	2015.18		3.08	5.96E+00		0.00E+00	0.00E+00
	2034.76		7.89	2.34E+00		0.00E+00	0.00E+00
@ MN-56	846.75		98.87	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1810.72		27.19	1.00E+26		1.00E+26	1.00E+20
>@	2113.05		14.34	0.00E+00		0.00E+00	0.00E+00
CO-57	122.06	*	85.60	5.31E+00	5.31E+00	4.45E+00	2.65E+00
	136.47		10.68	6.07E+01		-1.79E+02	3.03E+01
	692.41		0.16	3.48E+03		-3.19E+03	1.72E+03
CO-58	810.78		99.45	1.21E+01	1.21E+01	-2.58E+01	6.01E+00
	863.96		0.68	1.62E+03		-2.00E+02	8.03E+02
	1674.73		0.52	1.49E+03		-5.64E+03	7.31E+02
FE-59	142.65		1.02	1.52E+03	2.68E+01	1.01E+04	7.60E+02
	192.35		3.08	4.48E+02		-2.53E+03	2.23E+02
	1099.25		56.50	2.68E+01		-5.77E+00	1.33E+01
	1291.60		43.20	3.22E+01		-9.54E+00	1.59E+01
CO-60	1173.24		99.90	6.44E+00	6.27E+00	-4.54E+00	3.18E+00
	1332.50		99.98	6.27E+00		1.58E+00	3.09E+00
@ CU-64	1345.77		0.47	1.00E+26	1.00E+26	1.00E+26	1.00E+20
ZN-65	1115.55		50.60	4.04E+01	4.04E+01	-2.01E+02	2.01E+01
SE-75	66.05		1.12	6.69E+02	1.20E+01	-1.55E+03	3.33E+02
	96.73		3.42	1.89E+02		6.39E+02	9.43E+01
	121.12		17.14	4.20E+01		-1.57E+01	2.09E+01
	136.00		58.27	1.33E+01		-1.38E+01	6.61E+00
	198.61		1.47	5.51E+02		2.54E+02	2.75E+02
	264.66		58.50	1.20E+01		-1.15E+02	5.97E+00
	279.54		24.79	3.03E+01		-3.12E+02	1.51E+01
	303.93		1.31	6.63E+02		-2.20E+04	3.30E+02
	400.66		11.37	8.67E+01		-9.54E+01	4.32E+01
RB-83	520.39		44.70	1.72E+01	1.72E+01	-4.36E+01	8.55E+00
	529.59		29.30	2.70E+01		-8.01E+00	1.34E+01
	552.59		15.96	5.01E+01		-1.09E+01	2.49E+01
@ BR-84	881.60		42.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1897.60		14.90	1.00E+26		1.00E+26	1.00E+20
KR-85	514.01		0.43	1.40E+03	1.40E+03	-9.02E+02	6.98E+02
@ KR-85M	151.20		75.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	304.87		14.00	1.00E+26		1.00E+26	1.00E+20
SR-85	514.01		95.70	1.13E+01	1.13E+01	-7.24E+00	5.60E+00
@ SR-85m	151.19		12.90	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	231.86		84.40	1.00E+26		1.00E+26	1.00E+20
RB-86	1077.00		8.64	5.50E+02	5.50E+02	-2.56E+02	2.72E+02
@ KR-87	402.59		49.60	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	673.83		1.89	1.00E+26		1.00E+26	1.00E+20
@	845.44		7.30	1.00E+26		1.00E+26	1.00E+20
@	1175.40		1.11	1.00E+26		1.00E+26	1.00E+20
@	1740.52		2.04	1.00E+26		1.00E+26	1.00E+20
@ KR-88	165.98		3.10	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	196.30		26.00	1.00E+26		1.00E+26	1.00E+20
@	362.23		2.25	1.00E+26		1.00E+26	1.00E+20
@	834.83		13.00	1.00E+26		1.00E+26	1.00E+20
@	985.78		1.52	1.00E+26		1.00E+26	1.00E+20
@	1141.33		1.28	1.00E+26		1.00E+26	1.00E+20

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
@ KR-88	1179.51		1.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1250.67		1.12	1.00E+26		1.00E+26	1.00E+20
@	1369.50		1.48	1.00E+26		1.00E+26	1.00E+20
@	1518.39		2.15	1.00E+26		1.00E+26	1.00E+20
@	1529.77		10.90	1.00E+26		1.00E+26	1.00E+20
@ RB-88	898.03		14.04	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1836.01		21.40	1.00E+26		1.00E+26	1.00E+20
Y-88	898.04		93.68	1.07E+01	7.65E+00	1.19E+00	5.29E+00
	1836.06		99.24	7.65E+00		-5.16E+00	3.75E+00
NB-94x	702.62		97.90	5.91E+00	5.91E+00	-1.68E+00	2.93E+00
	871.09		99.90	6.64E+00		1.89E-01	3.29E+00
NB-95	765.81		99.81	3.04E+01	3.04E+01	-2.05E+00	1.51E+01
NB-95m	204.12		2.33	1.01E+07	9.40E+05	-1.75E+06	5.02E+06
	235.69	*	24.80	9.40E+05		-3.82E+05	4.68E+05
ZR-95	724.20		44.17	2.33E+01	1.84E+01	-6.51E+00	1.15E+01
	756.73		54.46	1.84E+01		-9.71E-01	9.10E+00
NB-96	460.04		26.62	2.42E+18	6.92E+17	-4.27E+17	1.20E+18
	568.87		57.97	1.09E+18		1.31E+17	5.43E+17
	778.22		96.45	6.92E+17		-1.21E+19	3.43E+17
	849.93		20.40	3.59E+18		-2.77E+18	1.78E+18
	1200.23		19.96	3.70E+18		-5.42E+18	1.83E+18
MO-99	140.51		4.52	1.44E+08	4.99E+07	-1.61E+08	7.16E+07
	181.06		6.08	1.07E+08		-6.69E+08	5.34E+07
	366.42		1.20	4.63E+08		-4.10E+07	2.30E+08
	739.50		12.13	4.99E+07		3.56E+07	2.47E+07
	777.92		4.28	1.44E+08		-2.51E+09	7.11E+07
@ TC-99M	140.51		89.06	1.00E+26	1.00E+26	1.00E+26	1.00E+20
RU-103	443.80		3.27	4.48E+02	1.49E+01	5.31E+02	2.23E+02
	497.08		90.90	1.49E+01		-7.28E+00	7.38E+00
	610.33		5.75	1.10E+03		3.95E+04	5.47E+02
RHRU-106	621.93		9.93	5.25E+01	5.25E+01	-3.15E+01	2.60E+01
	1050.41		1.56	4.57E+02		-1.71E+02	2.26E+02
AG-108M	433.94		90.50	6.05E+00	6.05E+00	-1.32E+01	3.00E+00
	614.28		89.90	2.37E+01		-5.21E+02	1.18E+01
	722.94		90.90	6.20E+00		-1.17E+00	3.07E+00
CD-109	88.03	*	3.61	1.31E+02	1.31E+02	3.62E+02	6.54E+01
AG-110M	116.48		1.36	4.40E+02	5.89E+00	-2.13E+02	2.19E+02
	446.81		3.72	1.72E+02		4.93E+01	8.54E+01
	620.36		2.79	2.03E+02		-6.52E+03	1.01E+02
	657.76		94.00	5.89E+00		-3.33E+01	2.91E+00
	677.62		10.28	5.48E+01		8.30E+00	2.71E+01
	687.02		6.39	8.94E+01		2.81E+01	4.42E+01
	706.68		16.32	4.14E+01		-1.87E+01	2.05E+01
	744.28		4.70	1.34E+02		7.15E+01	6.64E+01
	763.94		22.14	4.72E+01		-7.24E+00	2.35E+01
	818.03		7.29	9.48E+01		-2.07E+01	4.70E+01
	884.68		72.19	1.09E+01		7.76E-01	5.42E+00
	937.49		34.13	3.30E+01		1.99E+02	1.64E+01
	1384.30		24.12	5.30E+01		-1.09E+01	2.63E+01
	1475.79		3.97	2.08E+02		2.52E+01	1.02E+02
	1505.04		12.95	9.54E+01		-6.03E+01	4.73E+01
	1562.30		1.02	7.64E+02		7.40E+01	3.77E+02
SN-113	255.06		1.82	4.95E+02	1.23E+01	2.99E+03	2.47E+02

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	SN-113	391.69		64.00	1.23E+01	1.23E+01	-1.05E+01	6.14E+00
	IN-114	190.27		15.40	8.60E+01	8.60E+01	-2.57E+02	4.29E+01
		558.43		4.40	2.54E+02		3.77E+01	1.26E+02
		725.24		4.40	2.70E+02		-1.00E+02	1.34E+02
	SB-122	564.24		69.30	1.07E+07	1.07E+07	-1.52E+06	5.33E+06
	I-124	602.72		60.50	8.29E+04	8.29E+04	-1.12E+07	4.11E+04
		722.78		9.98	5.35E+05		8.14E+05	2.65E+05
		1509.49		2.99	3.35E+06		1.23E+07	1.66E+06
		1691.02		10.40	5.41E+05		2.77E+05	2.66E+05
	SB-124	602.73		97.80	1.02E+01	1.02E+01	-1.38E+03	5.07E+00
		645.85		7.38	1.21E+02		-3.62E+01	5.97E+01
		709.32		1.35	7.46E+02		-7.51E+02	3.70E+02
		713.78		2.27	4.26E+02		-9.76E+02	2.11E+02
		722.79		10.76	9.89E+01		1.50E+02	4.90E+01
		968.20		1.89	6.89E+02		-4.93E+02	3.42E+02
		1045.13		1.84	5.99E+02		-7.04E+02	2.96E+02
		1325.51		1.62	7.09E+02		-1.28E+02	3.50E+02
		1355.18		1.04	1.10E+03		-1.88E+02	5.43E+02
		1368.16		2.62	4.48E+02		-9.72E+02	2.21E+02
		1436.56		1.23	1.01E+03		-4.04E+02	4.99E+02
		1690.98		47.30	2.37E+01		1.21E+01	1.17E+01
	I-125	30.98		20.10	7.54E+01	7.54E+01	-1.77E+02	3.75E+01
		35.49		6.68	2.00E+02		9.89E+02	9.95E+01
	SB-125	176.31		6.82	8.72E+01	2.22E+01	-4.77E+01	4.35E+01
		380.45		1.52	3.50E+02		-4.20E+02	1.74E+02
		427.88		29.60	2.22E+01		5.29E+01	1.10E+01
		463.36		10.49	5.22E+01		-2.64E+01	2.59E+01
		600.60		17.86	3.09E+01		-3.77E+03	1.53E+01
		606.72		5.03	4.88E+02		-7.87E+03	2.43E+02
		635.95		11.31	4.55E+01		3.08E+01	2.26E+01
		671.45		1.80	2.81E+02		-2.56E+02	1.39E+02
	@ XE-125	188.42		54.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	243.38		30.10	1.00E+26		1.00E+26	1.00E+20
+	I-126	388.63	*	34.10	2.30E+02	2.30E+02	6.37E+02	1.14E+02
	SB-126	414.80		83.30	1.56E+02	1.05E+02	-2.37E+02	7.75E+01
		666.30		99.60	1.41E+02		-1.30E+02	7.00E+01
		695.00		99.60	1.05E+02		-2.03E+02	5.22E+01
		697.00		28.90	3.67E+02		-6.11E+02	1.82E+02
		720.50		53.80	2.26E+02		-5.72E+01	1.12E+02
		856.70		17.60	7.71E+02		-1.47E+02	3.82E+02
	I-129	39.58		7.45	6.89E+01	6.89E+01	-2.23E+02	3.43E+01
	@ I-130	418.01		34.15	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	536.09		99.00	1.00E+26		1.00E+26	1.00E+20
	@	668.54		96.10	1.00E+26		1.00E+26	1.00E+20
	@	739.48		82.30	1.00E+26		1.00E+26	1.00E+20
	@	1157.47		11.30	1.00E+26		1.00E+26	1.00E+20
	I-131	284.30		6.14	1.14E+04	7.12E+02	3.58E+04	5.69E+03
		364.49		81.70	7.12E+02		-2.30E+02	3.54E+02
		636.99		7.17	8.12E+03		4.10E+03	4.02E+03
		722.91		1.77	3.76E+04		-7.11E+03	1.87E+04
	XE-131M	163.93		1.91	7.78E+03	7.78E+03	-1.67E+03	3.88E+03
	TE-132	111.76		1.74	3.83E+07	9.77E+05	3.90E+07	1.91E+07
		116.30		1.96	4.10E+07		-1.98E+07	2.04E+07

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TE-132	228.16		88.00	9.77E+05	9.77E+05	-4.90E+06	4.87E+05
+	BA-133	53.16		2.20	1.96E+02	1.27E+01	-1.87E+01	9.79E+01
		79.62		2.62	2.28E+02		-2.91E+02	1.14E+02
		81.00	*	34.06	1.27E+01		3.14E+01	6.35E+00
		160.61		0.64	9.36E+02		-3.56E+01	4.67E+02
		223.23		0.45	1.23E+03		-2.07E+02	6.14E+02
		276.40		7.16	8.13E+01		-1.27E+03	4.05E+01
		302.85	*	18.33	2.14E+01		5.80E+01	1.06E+01
		356.02		62.05	1.91E+01		-1.13E+02	9.51E+00
		383.85		8.94	5.96E+01		-7.24E+01	2.97E+01
	I-133	529.87		87.00	8.87E+19	8.87E+19	-2.62E+19	4.40E+19
		875.33		4.51	2.25E+21		-1.03E+20	1.12E+21
	CS-134	475.35		1.47	3.65E+02	6.85E+00	-3.39E+02	1.81E+02
		563.23		8.38	6.50E+01		6.35E+00	3.23E+01
		569.32		15.43	3.57E+01		1.12E+01	1.77E+01
		604.70		97.56	1.28E+01		-5.93E+02	6.39E+00
		795.84		85.44	6.85E+00		-1.65E+01	3.39E+00
		801.93		8.73	8.22E+01		-1.13E+02	4.08E+01
		1038.57		1.00	6.20E+02		-1.67E+02	3.07E+02
		1167.94		1.80	3.73E+02		-6.83E+02	1.84E+02
		1365.15		3.04	2.11E+02		-5.88E+01	1.04E+02
@	I-134	405.45		7.35	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		540.83		7.60	1.00E+26		1.00E+26	1.00E+20
@		595.36		11.20	1.00E+26		1.00E+26	1.00E+20
@		621.79		10.60	1.00E+26		1.00E+26	1.00E+20
@		677.34		7.80	1.00E+26		1.00E+26	1.00E+20
@		847.03		95.40	1.00E+26		1.00E+26	1.00E+20
@		884.09		64.90	1.00E+26		1.00E+26	1.00E+20
@		1072.55		15.00	1.00E+26		1.00E+26	1.00E+20
@		1136.16		9.20	1.00E+26		1.00E+26	1.00E+20
	CS-135	787.20		100.00	6.86E+00	6.29E+00	2.23E+01	3.40E+00
		846.10		95.90	6.29E+00		-9.81E+00	3.11E+00
@	I-135	417.63		3.55	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		546.56		7.20	1.00E+26		1.00E+26	1.00E+20
@		836.80		6.73	1.00E+26		1.00E+26	1.00E+20
@		1038.76		8.00	1.00E+26		1.00E+26	1.00E+20
@		1124.00		3.64	1.00E+26		1.00E+26	1.00E+20
@		1131.51		22.74	1.00E+26		1.00E+26	1.00E+20
@		1260.41		28.90	1.00E+26		1.00E+26	1.00E+20
@		1457.56		8.73	1.00E+26		1.00E+26	1.00E+20
@		1678.03		9.62	1.00E+26		1.00E+26	1.00E+20
@		1706.46		4.13	1.00E+26		1.00E+26	1.00E+20
@		1791.20		7.77	1.00E+26		1.00E+26	1.00E+20
@	XE-135	249.79		90.20	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		608.18		2.90	1.00E+26		1.00E+26	1.00E+20
@	XE-135M	526.56		80.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	CS-136	66.88		4.80	2.32E+03	1.09E+02	-2.48E+03	1.16E+03
		86.36		5.20	2.05E+03		1.25E+04	1.02E+03
		153.25		5.77	2.08E+03		-1.03E+03	1.04E+03
		163.92		3.40	3.16E+03		-6.78E+02	1.57E+03
		176.60		10.00	1.05E+03		-5.07E+02	5.24E+02
		273.65		11.10	1.29E+03		9.77E+03	6.42E+02
		340.55		42.30	2.54E+02		5.26E+02	1.27E+02

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	CS-136	818.51		100.00	1.09E+02	1.09E+02	-1.01E+01	5.39E+01
		1048.07		80.00	1.46E+02		-9.08E+01	7.20E+01
		1235.36		20.10	1.16E+03		-3.95E+03	5.78E+02
	CS-137	661.66		85.10	7.14E+00	7.14E+00	-2.18E+01	3.54E+00
@	CS-138	138.10		1.49	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		227.76		1.51	1.00E+26		1.00E+26	1.00E+20
@		408.98		4.66	1.00E+26		1.00E+26	1.00E+20
@		462.80		30.70	1.00E+26		1.00E+26	1.00E+20
@		547.00		10.76	1.00E+26		1.00E+26	1.00E+20
@		871.80		5.11	1.00E+26		1.00E+26	1.00E+20
@		1009.78		29.80	1.00E+26		1.00E+26	1.00E+20
@		1147.22		1.24	1.00E+26		1.00E+26	1.00E+20
@		1343.59		1.14	1.00E+26		1.00E+26	1.00E+20
@		1435.86		76.30	1.00E+26		1.00E+26	1.00E+20
	LA-138	788.74		33.60	2.03E+01	9.92E+00	-6.34E+00	1.01E+01
		1435.80		66.40	9.92E+00		-2.25E+00	4.89E+00
@	BA-139	165.86		23.60	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	CE-139	165.85		79.90	9.59E+00	9.59E+00	-6.77E+00	4.78E+00
	BA-140	162.66		6.21	1.90E+03	4.33E+02	-5.60E+02	9.49E+02
		304.85		4.30	2.71E+03		-2.75E+04	1.35E+03
		423.72		3.10	4.13E+03		-2.84E+03	2.05E+03
		437.58		1.93	5.51E+03		-1.00E+04	2.74E+03
		537.26		24.39	4.33E+02		-1.25E+02	2.15E+02
	LA-140	328.76		20.32	2.29E+11	6.13E+10	1.56E+11	1.14E+11
		432.49		2.90	1.50E+12		-2.77E+12	7.46E+11
		487.02		45.50	9.58E+10		3.95E+10	4.76E+10
		751.64		4.33	9.92E+11		-5.87E+11	4.91E+11
		815.77		23.30	1.93E+11		-6.98E+11	9.55E+10
		867.85		5.50	9.36E+11		1.33E+11	4.64E+11
		919.55		2.66	1.94E+12		-7.35E+11	9.63E+11
		925.19		6.90	7.39E+11		-7.13E+12	3.66E+11
		1596.21		95.40	6.13E+10		-3.65E+10	3.03E+10
	CE-141	145.44		48.20	4.45E+01	4.45E+01	-4.55E+01	2.22E+01
	CE-144	80.12		1.36	4.56E+02	5.71E+01	-4.06E+03	2.27E+02
		133.51		11.09	5.71E+01		1.97E+01	2.85E+01
	PM-144	476.78		41.98	1.37E+01	5.48E+00	-1.08E+01	6.82E+00
		618.01		98.59	5.50E+00		-9.19E+02	2.72E+00
		694.00		0.55	9.76E+02		-1.32E+03	4.83E+02
		696.49		99.49	5.48E+00		-9.43E+00	2.71E+00
		778.57		1.51	4.04E+02		-7.06E+03	2.00E+02
		814.14		0.55	1.15E+03		-4.89E+03	5.71E+02
	PM-146	146.20		0.22	3.07E+03	8.29E+00	-6.33E+03	1.53E+03
		453.88		66.00	8.29E+00		-3.20E+00	4.12E+00
		589.80		0.43	1.20E+03		-1.26E+03	5.96E+02
		633.25		1.12	4.45E+02		1.53E+02	2.21E+02
		735.93		22.80	2.29E+01		-2.17E+01	1.13E+01
		747.24		17.71	3.08E+01		3.29E+00	1.53E+01
	ND-147	91.11		27.90	5.28E+02	5.28E+02	-4.12E+03	2.63E+02
		319.41		1.95	8.54E+03		-2.24E+04	4.25E+03
		398.15		0.87	2.18E+04		-5.83E+04	1.08E+04
		439.89		1.20	1.44E+04		-1.78E+04	7.14E+03
		531.02		13.09	1.29E+03		5.24E+02	6.38E+02
	EU-152	121.78	*	28.42	1.40E+01	1.40E+01	1.17E+01	6.98E+00

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	EU-152	244.70		7.49	1.13E+02	1.40E+01	-1.59E+02	5.65E+01
		295.94	*	0.44	9.38E+02		8.29E+04	4.66E+02
		344.28		26.58	2.05E+01		-1.94E+03	1.02E+01
		411.12		2.23	2.70E+02		-9.25E+02	1.34E+02
		443.98		3.09	1.80E+02		1.79E+02	8.92E+01
		688.67		0.83	5.89E+02		-4.06E+01	2.92E+02
		778.90		12.96	4.28E+01		-5.51E+02	2.12E+01
		867.39		4.15	1.59E+02		6.08E+00	7.86E+01
		964.13	*	14.50	2.87E+01		5.23E+01	1.41E+01
		1005.28		0.65	9.77E+02		-5.67E+01	4.84E+02
		1085.87		10.16	6.21E+01		1.33E+01	3.07E+01
		1089.70		1.71	3.68E+02		-6.85E+01	1.82E+02
		1112.12		13.54	4.81E+01		-9.79E+02	2.38E+01
		1212.95		1.40	4.83E+02		-4.36E+02	2.39E+02
		1299.12		1.63	3.82E+02		1.77E+02	1.88E+02
		1408.01	*	20.87	2.17E+01		2.21E+02	1.06E+01
+	GD-153	69.67		2.54	2.67E+02	1.30E+01	1.06E+03	1.33E+02
		97.43	*	30.20	1.30E+01		-2.90E+00	6.48E+00
		103.18		21.44	2.21E+01		-2.26E+01	1.10E+01
	EU-154	123.07	*	40.78	9.81E+00	9.81E+00	8.21E+00	4.88E+00
		247.93		6.95	7.69E+01		-7.29E+02	3.83E+01
		444.49	*	0.56	5.47E+02		1.06E+03	2.70E+02
		582.10		0.89	6.43E+02		9.66E+02	3.19E+02
		591.76		4.99	1.03E+02		-9.87E+01	5.13E+01
		692.42		1.80	2.67E+02		-2.44E+02	1.32E+02
		723.30		20.22	2.82E+01		-5.33E+00	1.40E+01
		756.80		4.57	1.22E+02		-6.44E+00	6.04E+01
		815.53		0.52	1.11E+03		-4.40E+03	5.51E+02
		845.39		0.59	1.05E+03		-1.59E+03	5.20E+02
		873.19		12.27	5.50E+01		7.77E+00	2.72E+01
		892.78		0.52	1.34E+03		9.13E+01	6.64E+02
		904.08		0.90	7.95E+02		1.46E+02	3.94E+02
		996.26		10.59	6.11E+01		2.95E+01	3.02E+01
		1004.72		18.00	3.55E+01		-2.97E+00	1.76E+01
		1246.15		0.87	8.51E+02		-1.37E+04	4.21E+02
		1274.44		35.19	1.85E+01		-6.81E+01	9.12E+00
		1494.05		0.70	1.12E+03		3.31E+02	5.54E+02
		1596.49		1.80	4.20E+02		2.56E+02	2.07E+02
	EU-155	45.30		1.32	3.82E+02	1.45E+01	8.76E+02	1.90E+02
		60.01		1.13	3.78E+02		-6.06E+02	1.88E+02
		86.54	*	30.70	1.45E+01		4.01E+01	7.24E+00
		105.31		21.15	1.96E+01		-1.34E+01	9.78E+00
	W-187	72.00		11.10	2.68E+18	1.19E+18	-5.50E+19	1.34E+18
		134.25		8.80	4.17E+18		3.03E+17	2.08E+18
		479.55		21.80	1.68E+18		-8.45E+17	8.36E+17
		618.26		6.28	5.13E+18		-8.57E+20	2.54E+18
		625.52		1.09	2.85E+19		-2.44E+19	1.41E+19
		685.73		27.30	1.19E+18		4.13E+17	5.89E+17
		772.89		4.12	1.60E+19		-6.43E+19	7.95E+18
	IR-192	295.96		28.66	7.31E+01	1.08E+01	1.93E+03	3.65E+01
		308.46		30.00	2.91E+01		-2.53E+01	1.45E+01
		316.51		82.81	1.08E+01		-1.31E+01	5.37E+00
		468.07		47.83	1.83E+01		-3.42E+00	9.09E+00

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	IR-192	588.58		4.51	1.91E+02	1.08E+01	-1.59E+02	9.47E+01
		604.41		8.23	2.43E+02		-1.12E+04	1.21E+02
		612.47		5.31	7.53E+02		-1.07E+04	3.76E+02
	TL-201	135.34		2.56	6.48E+07	1.71E+07	-1.17E+06	3.23E+07
		167.43		10.00	1.71E+07		-9.03E+06	8.54E+06
	HG-203	279.20		81.46	1.52E+01	1.52E+01	-1.80E+02	7.59E+00
	TL-208	277.36		6.31	8.96E+01	6.72E+00	-1.54E+03	4.46E+01
		510.77		22.60	2.66E+01		-1.67E+01	1.32E+01
		583.19		84.50	6.72E+00		-5.57E-01	3.34E+00
		763.13		1.81	3.61E+02		-1.58E+02	1.79E+02
		860.56		12.42	5.12E+01		-8.41E+00	2.54E+01
+	PB-210	46.54	*	4.25	1.12E+02	1.12E+02	1.80E+02	5.56E+01
	BI-211	351.06		12.91	1.42E+02	1.42E+02	5.87E+03	7.07E+01
+	PB-211	404.85	*	3.78	1.14E+02	1.14E+02	5.98E+02	5.65E+01
		427.09	*	1.76	2.05E+02		6.54E+02	1.02E+02
		704.64		0.46	1.25E+03		2.40E+03	6.20E+02
		766.51		0.62	1.64E+03		-7.59E+01	8.17E+02
		832.01	*	3.52	1.44E+02		2.82E+02	7.11E+01
	BI-212	727.33		6.58	7.81E+01	7.81E+01	-5.97E+01	3.87E+01
		785.37		1.10	6.25E+02		-4.00E+02	3.10E+02
		1078.62		0.56	1.06E+03		-7.36E+02	5.24E+02
		1620.50		1.49	3.99E+02		1.44E+02	1.96E+02
	PB-212	115.18		0.59	7.26E+02	1.78E+01	-1.85E+01	3.62E+02
		238.63		43.30	1.78E+01		-6.70E+01	8.88E+00
		300.09		3.28	2.04E+02		-6.52E+03	1.02E+02
+	BI-214	609.31	*	44.80	9.16E+00	9.16E+00	1.91E+03	4.53E+00
		665.45	*	1.29	3.09E+02		2.12E+03	1.53E+02
		768.36	*	4.80	1.18E+02		2.05E+03	5.87E+01
		806.17	*	1.22	3.51E+02		1.87E+03	1.73E+02
		934.06	*	3.03	1.31E+02		1.94E+03	6.43E+01
		1120.29	*	14.80	3.96E+01		1.98E+03	1.96E+01
		1155.19	*	1.64	2.71E+02		2.04E+03	1.33E+02
		1207.68	*	0.49	7.31E+02		1.50E+03	3.58E+02
		1238.11	*	5.86	7.88E+01		1.93E+03	3.87E+01
		1280.96	*	1.44	3.92E+02		1.79E+03	1.93E+02
		1377.67	*	3.92	1.14E+02		1.98E+03	5.61E+01
		1385.31	*	0.89	5.07E+02		1.77E+03	2.49E+02
		1401.50	*	1.55	2.72E+02		1.75E+03	1.33E+02
		1407.98	*	2.80	1.60E+02		1.63E+03	7.86E+01
		1415.80		0.48	1.49E+03		-6.93E+03	7.36E+02
		1509.23	*	2.12	3.32E+02		1.95E+03	1.64E+02
		1583.22	*	0.70	5.69E+02		1.87E+03	2.78E+02
		1661.28	*	1.14	3.48E+02		1.86E+03	1.70E+02
		1729.59	*	2.88	1.15E+02		1.95E+03	5.56E+01
		1764.49	*	15.36	2.02E+01		1.92E+03	9.77E+00
		1847.42	*	2.04	1.72E+02		1.80E+03	8.36E+01
+	PB-214	53.23		1.11	3.85E+02	1.79E+01	-3.66E+01	1.92E+02
		241.98	*	7.50	8.32E+01		1.22E+03	4.15E+01
		258.79	*	0.55	7.36E+02		1.96E+03	3.66E+02
		295.21	*	18.50	2.21E+01		1.96E+03	1.10E+01
		351.92	*	35.80	1.79E+01		2.12E+03	8.90E+00
		785.91	*	0.85	5.82E+02		2.54E+03	2.88E+02
		839.03	*	0.63	8.09E+02		-6.67E+01	4.00E+02

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
+	RN-219	130.59		0.12	4.54E+03	3.80E+01	-1.12E+03	2.26E+03
		271.23	*	10.80	3.80E+01		5.09E+02	1.89E+01
		401.81	*	6.37	6.70E+01		5.30E+02	3.33E+01
	RN-220	549.73		0.11	4.63E+03	4.63E+03	-7.82E+02	2.30E+03
+	RA-223	122.32	*	1.19	3.32E+02	2.98E+01	2.78E+02	1.65E+02
		144.23	*	3.22	1.80E+02		1.34E+03	8.98E+01
		154.21	*	5.62	9.09E+01		5.69E+02	4.53E+01
		158.63	*	0.69	7.39E+02		-1.91E+03	3.68E+02
		179.54		0.15	3.86E+03		-3.42E+04	1.92E+03
		269.46	*	13.70	2.98E+01		5.05E+02	1.48E+01
		288.18		0.16	3.52E+03		-1.62E+05	1.75E+03
		323.87	*	3.93	1.02E+02		2.29E+02	5.08E+01
		328.40		0.21	2.91E+03		6.44E+03	1.45E+03
		338.28	*	2.79	1.41E+02		-3.54E+02	6.99E+01
		342.90		0.22	2.51E+03		-2.62E+04	1.25E+03
		346.80		0.18	3.06E+03		-3.12E+05	1.52E+03
		371.68		0.48	1.05E+03		9.22E+01	5.23E+02
	RA-224	240.99		3.97	2.16E+02	2.16E+02	-7.36E+02	1.08E+02
	RA-226	186.10	*	3.50	1.82E+02	1.82E+02	2.39E+03	9.10E+01
+	TH-227	50.13	*	8.00	4.09E+01	4.09E+01	-3.10E+00	2.03E+01
		79.72		1.89	3.12E+02		-3.99E+02	1.56E+02
		93.93	*	1.37	2.63E+02		-5.80E+02	1.31E+02
		210.65	*	1.10	4.91E+02		1.44E+02	2.45E+02
		235.97	*	12.70	4.54E+01		-1.84E+01	2.26E+01
		256.25	*	7.01	6.19E+01		4.98E+02	3.08E+01
		286.12	*	1.54	6.65E+02		-9.57E+03	3.32E+02
		300.00	*	2.67	1.58E+02		7.85E+02	7.83E+01
		304.51		1.23	4.91E+02		-1.17E+04	2.44E+02
		329.85	*	2.69	1.46E+02		-6.27E+02	7.23E+01
		334.38		1.05	5.44E+02		-7.18E+02	2.71E+02
	AC-228	99.50		1.28	3.35E+02	2.62E+01	-3.21E+02	1.67E+02
		129.07		2.45	2.20E+02		-9.26E+01	1.10E+02
		153.98		0.74	8.86E+02		4.34E+03	4.42E+02
		209.25		3.88	1.49E+02		-3.61E+01	7.42E+01
		270.24		3.43	2.49E+02		3.56E+03	1.24E+02
		327.90		3.06	2.07E+02		8.75E+02	1.03E+02
		332.37		0.40	1.54E+03		9.99E+02	7.64E+02
		338.32		11.25	5.21E+01		-7.53E+00	2.59E+01
		409.46		1.94	3.41E+02		-7.29E+02	1.70E+02
		463.01		4.44	1.19E+02		-6.00E+01	5.89E+01
		508.96		0.47	1.27E+03		-1.47E+03	6.32E+02
		562.50		0.87	5.97E+02		1.34E+02	2.96E+02
		755.32		1.00	5.51E+02		2.03E+02	2.73E+02
		772.29		1.50	6.77E+02		-2.14E+03	3.37E+02
		782.14		0.50	1.32E+03		-2.56E+03	6.54E+02
		794.95		4.34	1.27E+02		-1.95E+02	6.29E+01
		830.49		0.55	1.30E+03		-9.47E+02	6.43E+02
		835.71		1.68	4.55E+02		1.54E+03	2.26E+02
		840.38		0.94	7.10E+02		-6.81E+02	3.52E+02
		904.20		0.78	9.06E+02		1.67E+02	4.49E+02
		911.21		26.60	2.62E+01		1.02E+01	1.30E+01
		964.77		5.11	1.34E+02		1.59E+02	6.66E+01
		968.97		16.20	4.25E+01		-3.45E+01	2.11E+01

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	AC-228	1247.08		0.50	1.27E+03	2.62E+01	-2.51E+04	6.26E+02
		1459.14		0.80	8.55E+02		2.16E+02	4.22E+02
		1495.91		0.89	8.71E+02		2.41E+02	4.31E+02
		1580.54		0.61	1.28E+03		2.58E+03	6.34E+02
		1588.21		3.27	2.41E+02		-2.88E+02	1.19E+02
		1630.63		1.60	3.53E+02		3.64E+01	1.74E+02
+	TH-228	84.37	*	1.23	3.39E+02	3.39E+02	2.24E+03	1.69E+02
		215.99		0.26	2.11E+03		-6.78E+02	1.05E+03
	TH-229	75.09		0.61	1.08E+03	1.33E+02	1.02E+04	5.37E+02
		86.35		3.90	1.49E+02		9.06E+02	7.45E+01
		124.60		1.43	3.72E+02		-1.49E+02	1.85E+02
		136.99		1.18	4.78E+02		-1.35E+03	2.38E+02
		148.15		0.88	6.70E+02		-3.32E+03	3.34E+02
		154.34		0.77	8.53E+02		4.27E+03	4.25E+02
		156.41		1.19	5.58E+02		3.13E+03	2.78E+02
		193.51		4.41	1.33E+02		-8.91E+02	6.63E+01
		204.69		0.60	9.63E+02		-3.67E+02	4.80E+02
		210.85		2.77	2.07E+02		-4.77E+01	1.03E+02
+	PA-231	283.69		1.70	3.49E+02	1.71E+02	9.50E+02	1.74E+02
		300.07	*	2.46	1.71E+02		8.53E+02	8.50E+01
		302.65	*	2.20	1.77E+02		4.79E+02	8.78E+01
		330.06	*	1.40	2.80E+02		-1.20E+03	1.39E+02
+	TH-231	81.23	*	0.89	4.83E+02	6.32E+01	1.19E+03	2.40E+02
		84.21	*	6.60	6.32E+01		4.18E+02	3.15E+01
		89.95	*	0.94	4.18E+02		1.33E+02	2.08E+02
	TH-232	63.81		0.27	1.65E+03	1.65E+03	-9.46E+03	8.20E+02
	U-232	57.78		0.20	2.08E+03	2.08E+03	-3.45E+03	1.03E+03
		129.08		0.07	7.83E+03		-3.29E+03	3.90E+03
	PA-233	75.35		1.39	4.73E+02	1.38E+01	4.45E+03	2.36E+02
		86.81		1.97	2.75E+02		3.10E+02	1.37E+02
		103.97		0.87	4.64E+02		-5.99E+02	2.31E+02
		271.48		0.33	2.63E+03		3.97E+04	1.31E+03
		300.34		6.62	1.01E+02		-3.23E+03	5.05E+01
		312.17		38.60	1.38E+01		-6.89E+00	6.87E+00
		340.81		4.47	1.31E+02		2.72E+02	6.54E+01
		375.45		0.68	7.57E+02		3.05E+02	3.76E+02
		398.62		1.39	4.50E+02		-9.31E+02	2.24E+02
		415.76		1.75	3.45E+02		-6.60E+01	1.72E+02
+	U-233	42.44		0.09	5.44E+03	5.44E+03	-1.94E+04	2.71E+03
		54.70		0.02	2.37E+04		-2.76E+03	1.18E+04
		97.13	*	0.02	1.68E+04		-3.74E+03	8.35E+03
	PA-234	62.70		1.55	2.84E+02	3.04E+01	-2.00E+03	1.42E+02
		99.86		3.19	1.33E+02		-2.18E+02	6.60E+01
		125.46		0.78	6.84E+02		-3.50E+02	3.41E+02
		131.30		18.00	3.04E+01		2.57E+00	1.51E+01
		140.50		0.81	7.13E+02		-7.98E+02	3.56E+02
		152.71		5.97	1.09E+02		-1.22E+02	5.44E+01
		159.48	*	0.65	7.84E+02		-2.03E+03	3.91E+02
		170.85		0.50	1.15E+03		-1.78E+02	5.74E+02
		186.15	*	1.76	3.63E+02		4.75E+03	1.81E+02
		193.73		0.49	1.20E+03		-8.65E+03	5.97E+02
		200.97		0.90	6.48E+02		-1.33E+01	3.23E+02
		203.12		1.23	4.74E+02		-3.73E+01	2.36E+02

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PA-234	227.00		9.99	5.50E+01	3.04E+01	-1.52E+01	2.74E+01
	245.37		0.75	1.05E+03		-2.40E+03	5.25E+02
	249.22		2.47	2.12E+02		-3.00E+03	1.06E+02
	272.28	*	1.08	3.80E+02		5.09E+03	1.89E+02
	293.79		2.99	4.15E+02		1.10E+04	2.07E+02
	330.40	*	0.77	5.09E+02		-2.19E+03	2.53E+02
	369.50		2.47	2.05E+02		6.24E+01	1.02E+02
	372.00		1.21	4.19E+02		9.69E+01	2.08E+02
	458.68		1.13	4.83E+02		5.74E+02	2.40E+02
	506.75		1.29	4.28E+02		-9.46E+02	2.13E+02
	513.40		1.10	5.48E+02		-2.36E+02	2.72E+02
	521.40		0.74	6.67E+02		-1.37E+03	3.31E+02
	565.20		1.03	5.04E+02		-4.93E+01	2.50E+02
	569.32		11.80	4.43E+01		1.39E+01	2.20E+01
	602.60		0.54	9.80E+02		-1.33E+05	4.86E+02
	663.90		0.54	1.21E+03		-2.05E+03	5.99E+02
	666.50	*	1.16	3.44E+02		2.36E+03	1.70E+02
	669.70		0.99	6.45E+02		-3.24E+02	3.20E+02
	692.60		1.24	3.83E+02		-3.50E+02	1.89E+02
	699.03		3.61	1.47E+02		-1.50E+02	7.30E+01
	705.90		2.27	2.54E+02		-1.17E+02	1.26E+02
	730.90		0.63	8.20E+02		1.33E+01	4.06E+02
	733.39		6.90	7.42E+01		-3.97E+01	3.67E+01
	738.00		1.15	4.55E+02		-6.06E+01	2.26E+02
	742.81		2.06	2.63E+02		2.11E+02	1.30E+02
	755.00		1.22	4.54E+02		2.31E+02	2.25E+02
	780.40		0.90	6.27E+02		-1.98E+03	3.11E+02
	786.27	*	1.19	4.16E+02		1.82E+03	2.06E+02
	794.90		1.34	4.12E+02		-6.32E+02	2.04E+02
	796.10		2.58	2.16E+02		-5.19E+02	1.07E+02
	805.52		3.14	2.26E+02		7.29E+02	1.12E+02
	819.20		1.88	3.15E+02		-4.44E+01	1.56E+02
	824.65		3.12	1.94E+02		-4.32E+02	9.63E+01
	831.50	*	4.12	1.23E+02		2.41E+02	6.08E+01
	876.00		2.52	2.66E+02		2.35E+00	1.32E+02
	880.50		10.40	6.51E+01		1.91E+01	3.23E+01
	883.24		9.58	7.06E+01		3.87E+00	3.50E+01
	898.67		3.24	2.15E+02		2.72E+00	1.07E+02
	926.00		16.80	3.88E+01		-4.05E+02	1.92E+01
	946.18		15.00	4.20E+01		-4.38E+01	2.08E+01
	980.48		5.15	1.22E+02		1.24E+01	6.05E+01
	984.20		1.62	3.85E+02		-4.01E+00	1.90E+02
	1028.70		0.57	1.08E+03		1.72E+02	5.34E+02
	1083.20		0.50	1.24E+03		2.19E+01	6.14E+02
	1352.90		1.15	5.29E+02		-6.50E+01	2.61E+02
	1393.90		2.06	2.99E+02		-1.69E+03	1.48E+02
	1668.40		0.76	8.75E+02		-2.53E+03	4.31E+02
	1693.80		0.69	7.99E+02		3.93E+02	3.92E+02
PA-234M	766.36		0.29	3.46E+03	7.68E+02	-1.60E+02	1.72E+03
	811.00		0.51	1.38E+03		-2.93E+03	6.83E+02
	1001.03		0.84	7.68E+02		4.21E+02	3.80E+02
TH-234	63.29		4.84	9.18E+01	8.23E+01	-5.95E+02	4.57E+01
	83.30		0.08	7.73E+03		2.27E+04	3.86E+03

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TH-234	92.59		5.58	8.23E+01	8.23E+01	-2.27E+02	4.10E+01
		112.81		0.28	1.52E+03		1.36E+03	7.57E+02
	U-234	53.20		0.12	3.48E+03	3.48E+03	-3.30E+02	1.73E+03
		120.90		0.03	1.54E+04		-7.25E+03	7.66E+03
+	U-235	109.16		1.54	2.67E+02	1.12E+01	-8.46E+01	1.33E+02
		143.76	*	10.96	5.29E+01		3.93E+02	2.64E+01
		163.36		5.08	1.15E+02		-3.01E+01	5.76E+01
		185.71	*	57.20	1.12E+01		1.46E+02	5.57E+00
		194.94		0.63	9.34E+02		-4.12E+03	4.66E+02
		202.11		1.08	5.38E+02		6.53E+01	2.68E+02
		205.31		5.01	1.15E+02		-5.27E+01	5.74E+01
+	NP-237	57.10		0.39	1.06E+03	3.52E+01	-2.22E+03	5.28E+02
		86.48	*	12.40	3.52E+01		9.70E+01	1.75E+01
		94.64	*	0.60	5.99E+02		-1.33E+03	2.98E+02
		143.25	*	0.43	1.35E+03		1.00E+04	6.72E+02
	NP-239	106.12		27.20	1.70E+08	1.70E+08	-1.56E+08	8.48E+07
		209.75		3.42	1.93E+09		-5.00E+08	9.62E+08
		228.18		10.76	5.84E+08		-2.93E+09	2.91E+08
		277.60		14.38	4.48E+08		-7.84E+09	2.23E+08
		334.31		2.07	3.16E+09		-4.17E+09	1.57E+09
	AM-241	59.54		35.90	1.16E+01	1.16E+01	-1.58E+01	5.79E+00
	CM-241	132.41		3.90	4.54E+02	2.38E+01	1.88E+02	2.26E+02
		165.01		3.40	5.51E+02		-2.46E+02	2.75E+02
		205.88		2.67	6.92E+02		-2.29E+02	3.45E+02
		430.63		4.06	4.82E+02		-5.00E+02	2.40E+02
		463.27		1.23	1.38E+03		-6.96E+02	6.83E+02
		471.80		71.30	2.38E+01		6.59E+00	1.18E+01
		636.88		1.53	1.04E+03		5.48E+02	5.13E+02
+	AM-243	74.66	*	68.20	6.69E+00	6.69E+00	2.67E+01	3.33E+00

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

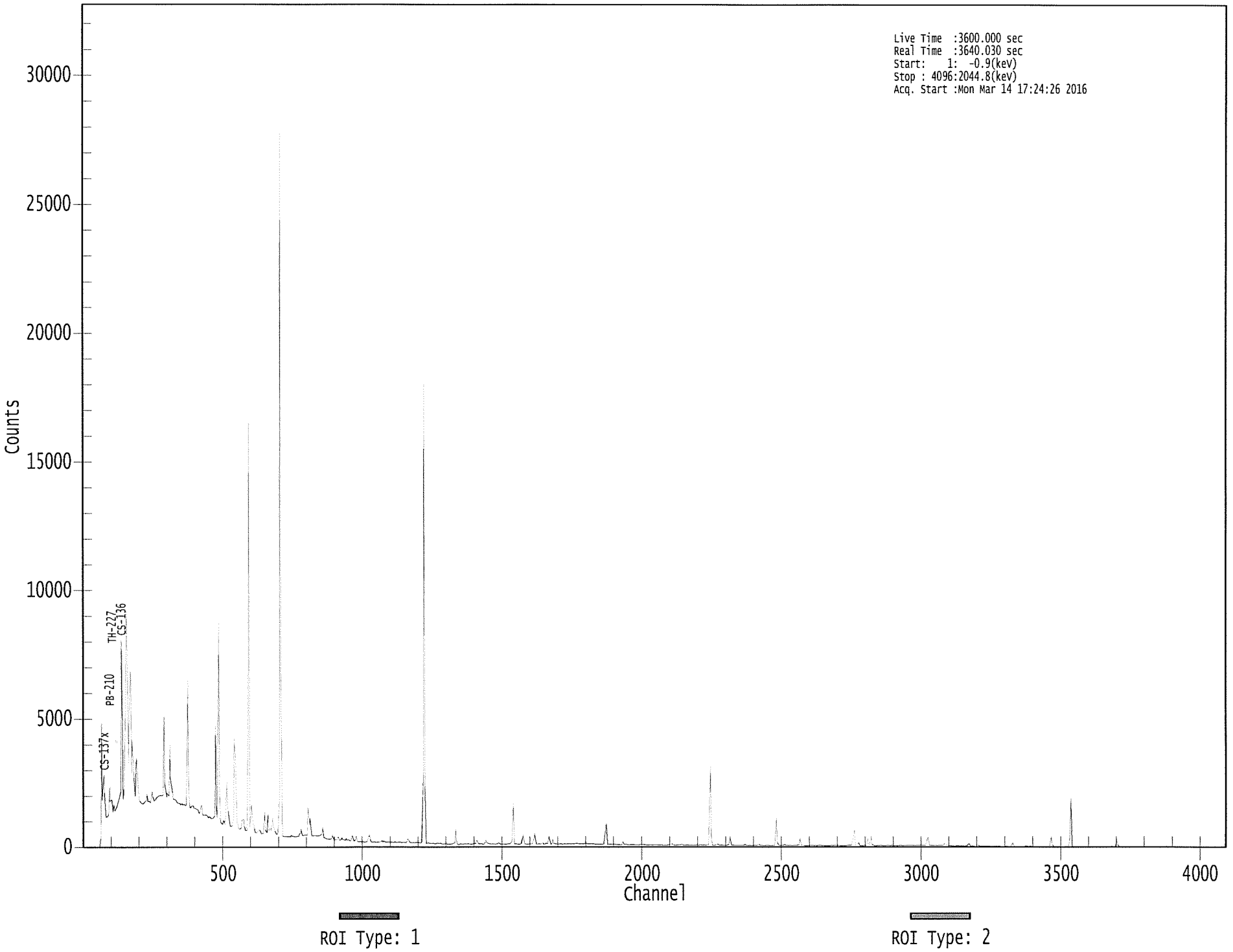
Creation Date	Comment	User

No Data Review Comments Entered.

Analysis Report for 588556Dup.R2

Tetra Tech TO# 160115-1

0000007051.CNF



011639

Apex™

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 590212R2
Sample Description	: Tetra Tech TO# 160115-1
Sample Type	: Soil
Sample Size	: 2.294E+02 grams
Facility	: Default
Sample Taken On	: 1/19/2016 1:20:00PM
Acquisition Started	: 3/14/2016 6:27:34PM
Procedure	: Raised 300g can soil
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3685.9 seconds
Dead Time	: 2.33 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7053

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

ENERGY CALIBRATION REPORT

Detector Name : DET01

ENERGY CALIBRATION COEFFICIENTS

Energy Calibrate Performed on : 11/30/2015 7:51:04PM
by : Administrator
Energy Calibrate Type : POLY

Energy (keV) = -1.445 + 0.500*ch + -1.06E-07*ch^2 + 0.00E+00*ch^3

SHAPE CALIBRATION COEFFICIENTS

Shape Calibrate Performed on : 11/30/2015 7:51:04PM
by : Administrator

FWHM = 0.610 + 3.62E-02 *E^1/2

LOW TAIL = 0.00E+00 + 0.00E+00*E

ENERGY CALIBRATION RESULTS TABLE

Centroid Channel	*Centroid error*	*Energy (keV)*
121.97	0.13	59.54
1326.58	0.01	661.66
2669.40	0.03	1332.50

SHAPE CALIBRATION RESULTS TABLE

Energy (keV)	*FWHM channels*	*FWHM error*	*TAIL channels*	*TAIL error*
59.54	2.12	0.24	0.00	0.00
661.66	3.08	0.02	0.00	0.00
1332.50	3.90	0.06	0.00	0.00

EFFICIENCY CALIBRATION REPORT

Detector Name : DET01
Geometry Description : Raised 300gm Can Soil
Efficiency Calibration Performed on : 12/20/2005 11:10:05AM
by : Administrator
Efficiency Type Used : EMPIRICAL

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

Efficiency Triplets

Energy	*% Efficiency*	*Error*	*Computed*	*Error*	*% Difference*
59.50	6.77E-01	2.04E-02			
88.00	6.93E-01	2.10E-02			
122.10	7.30E-01	2.28E-02			
165.90	6.33E-01	3.05E-02			
391.70	3.38E-01	1.74E-02			
661.70	2.30E-01	6.91E-03			
898.00	1.91E-01	8.56E-03			
1173.20	1.46E-01	4.40E-03			
1332.50	1.33E-01	3.99E-03			
1836.00	1.03E-01	3.36E-03			

DUAL Efficiency Calibration Equation

Single Equation Terms

Offset :	-3.20E+01
Slope :	1.70E+01
Quadratic :	-3.77E+00
Cubic :	3.53E-01
4th Order :	-1.23E-02
5th Order :	0.00E+00
6th Order :	0.00E+00
7th Order :	0.00E+00
8th Order :	0.00E+00
9th Order :	0.00E+00

EMPIRICAL Efficiency Calibration Equation

Empirical Equation Terms

Scaling :	9.48E+02
Offset :	-6.35E+00
Slope :	8.02E-01
Quadratic :	2.35E-02
Cubic :	-1.58E-02
4th Order :	-1.23E-02
5th Order :	0.00E+00

LINEAR Efficiency Calibration Equation

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

Linear Equation Terms

Offset	-1.79E-04
Slope	-2.75E+00
Quadratic	1.74E+02
Cubic	-1.42E+04
4th Order	2.49E+05
5th Order	6.29E+06
6th Order	0.00E+00
7th Order	0.00E+00
8th Order	0.00E+00
9th Order	0.00E+00

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

PEAK LOCATE REPORT

Peak Locate Performed on : 3/30/2016 2:02:27PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 4.30

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	32.20	67.30	0.1614	26.92
2	36.40	75.69	0.2188	14.31
3	46.68	96.25	0.2811	9.44
4	50.27	103.22	0.3670	5.58
5	53.29	109.40	0.3623	4.57
6	67.77	138.44	0.1193	39.69
7	74.91	152.61	0.1403	31.16
8	77.17	157.34	0.1170	47.84
9	81.15	165.32	0.1726	22.97
10	83.89	170.57	0.1310	33.24
11	87.35	177.52	0.1756	16.80
12	89.91	183.00	0.3094	8.33
13	94.75	192.37	0.2127	11.09
14	97.83	198.33	0.3184	6.60
15	113.17	229.24	0.3783	5.32
16	122.34	247.58	0.3155	5.44
17	144.13	291.17	0.1268	36.96
18	154.32	311.55	0.1410	27.70
19	186.29	375.50	0.0963	53.95
20	210.79	424.52	0.2480	8.38
21	236.12	475.18	0.0977	56.52
22	242.13	487.21	0.0749	94.53
23	254.04	510.58	0.2681	8.01
24	256.37	515.68	0.1228	37.62

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
25	259.05	521.17	0.2049	15.42
26	269.61	542.00	0.1112	50.59
27	271.39	545.98	0.1407	38.55
28	274.76	552.75	0.2465	9.25
29	281.40	565.54	0.3451	4.55
30	283.87	570.54	0.2234	10.76
31	286.26	575.52	0.2077	11.97
32	295.37	593.71	0.0582	149.40
33	300.16	603.26	0.1294	30.94
34	302.81	608.53	0.1784	16.66
35	304.68	612.65	0.3375	5.70
36	314.98	632.94	0.3290	5.62
37	324.05	651.07	0.1363	27.75
38	330.06	663.09	0.1391	25.33
39	334.39	671.77	0.2455	8.40
40	338.50	679.96	0.1532	22.29
41	352.06	707.11	0.0464	218.59
42	387.06	776.78	0.3026	6.65
43	389.12	781.48	0.2424	8.85
44	402.04	807.09	0.1125	38.09
45	405.18	813.41	0.1443	23.76
46	427.39	857.84	0.1809	14.41
47	445.26	893.57	0.2200	9.11
48	455.11	913.29	0.2308	8.44
49	462.13	927.33	0.2576	6.08
50	470.10	943.28	0.2772	6.26
51	480.73	964.54	0.2069	10.52
52	487.37	977.83	0.1820	13.39
53	511.13	1025.37	0.1876	9.28
54	533.92	1070.98	0.2803	6.59
55	580.43	1164.04	0.1912	12.43
56	609.60	1222.41	0.0453	195.56
57	665.79	1334.84	0.1146	32.69
58	703.52	1410.35	0.1887	10.99
59	720.25	1443.82	0.1915	11.35
60	742.93	1489.22	0.2811	5.11
61	768.77	1540.94	0.0851	58.07
62	786.29	1576.00	0.1311	24.51
63	806.59	1616.63	0.1214	25.72
64	821.73	1646.93	0.2884	4.50
65	832.38	1668.23	0.1359	21.53
66	839.49	1682.47	0.1626	14.35
67	934.54	1872.72	0.0952	41.65
68	964.55	1932.79	0.1900	11.03
69	1052.48	2108.80	0.2037	7.23
70	1070.38	2144.63	0.2168	7.67
71	1120.86	2245.67	0.0624	90.30
72	1134.28	2272.55	0.2280	6.87
73	1155.77	2315.57	0.1134	26.55
74	1182.47	2369.02	0.2389	5.16
75	1208.17	2420.46	0.1715	11.68
76	1238.71	2481.63	0.0797	53.63
77	1253.77	2511.76	0.2286	5.44
78	1281.60	2567.50	0.1198	22.23
79	1378.32	2761.17	0.0886	41.96

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
80	1385.98	2776.49	0.1438	15.50
81	1402.23	2809.00	0.1217	22.82
82	1408.65	2821.90	0.1010	32.01
83	1509.84	3024.51	0.1084	26.61
84	1539.42	3083.69	0.1875	9.29
85	1544.04	3093.16	0.2030	8.85
86	1583.92	3172.87	0.1536	13.21
87	1595.26	3195.23	0.2308	6.03
88	1599.91	3204.95	0.2059	7.81
89	1661.99	3329.21	0.1271	19.10
90	1684.70	3374.71	0.2136	6.36
91	1693.79	3392.91	0.2199	5.57
92	1730.30	3466.04	0.0959	32.95
93	1765.21	3535.96	0.0623	76.99
94	1838.94	3683.65	0.1747	10.25
95	1848.08	3701.95	0.1069	24.91
96	1873.88	3753.63	0.2193	5.27
97	1896.60	3799.14	0.2728	4.40

? = Adjacent peak noted
Errors quoted at 1.000 sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 3/30/2016 2:02:27PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	32.20	62 -	71	67.30	1.73E+04	204.69	1.64E+04	1.42
	2	36.40	73 -	82	75.69	2.03E+03	218.51	3.05E+04	1.02
	3	46.68	89 -	99	96.25	1.40E+03	213.09	2.84E+04	0.96
M	4	50.27	101 -	112	103.44	2.42E+01	116.51	8.16E+03	0.34
m	5	53.29	101 -	112	109.47	2.32E+01	111.66	8.10E+03	0.35
	6	67.77	131 -	142	138.44	1.44E+04	282.96	4.10E+04	1.11
M	7	74.91	145 -	186	152.72	5.36E+03	142.05	2.85E+04	0.85
m	8	77.17	145 -	186	157.24	1.07E+04	277.11	2.79E+04	0.86
m	9	81.15	145 -	186	165.19	2.69E+03	77.11	2.69E+04	0.87
m	10	83.89	145 -	186	170.69	7.43E+03	194.02	2.60E+04	0.87
m	11	87.35	145 -	186	177.60	3.84E+03	104.44	2.94E+04	0.88
m	12	89.91	145 -	186	182.72	4.90E+02	36.33	2.44E+04	0.88
M	13	94.75	187 -	205	192.39	-2.61E+03	334.08	2.53E+04	0.83
m	14	97.83	187 -	205	198.56	-3.50E+02	56.03	2.25E+04	0.83
	15	113.17	221 -	232	229.24	1.44E+03	256.42	4.02E+04	0.89
	16	122.34	241 -	252	247.58	8.62E+02	263.54	4.29E+04	1.19
	17	144.13	282 -	295	291.17	1.42E+04	331.63	5.64E+04	1.21
	18	154.32	303 -	316	311.55	9.26E+03	328.49	5.80E+04	1.22
	19	186.29	368 -	380	375.50	2.58E+04	313.72	4.40E+04	1.29
	20	210.79	420 -	433	424.52	1.02E+03	259.58	3.90E+04	1.12

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	21	236.12	465 -	482	475.18	-1.70E+04	359.89	7.71E+04	0.90
	22	242.13	483 -	496	487.21	2.70E+04	315.65	4.27E+04	1.16
M	23	254.04	507 -	530	511.02	2.45E+03	102.50	1.58E+04	1.20
m	24	256.37	507 -	530	515.68	8.78E+03	138.70	1.55E+04	1.21
m	25	259.05	507 -	530	521.05	2.55E+03	101.81	1.51E+04	1.21
M	26	269.61	538 -	560	542.18	1.76E+04	167.38	1.38E+04	1.22
m	27	271.39	538 -	560	545.73	1.40E+04	153.65	1.37E+04	1.22
m	28	274.76	538 -	560	552.47	1.73E+03	92.52	1.53E+04	1.22
M	29	281.40	563 -	581	565.76	1.22E+02	31.27	1.01E+04	1.05
m	30	283.87	563 -	581	570.71	1.60E+03	41.43	1.16E+04	1.05
m	31	286.26	563 -	581	575.48	1.79E+03	43.38	1.14E+04	1.05
M	32	295.37	587 -	617	593.71	9.13E+04	319.45	1.30E+04	1.24
m	33	300.16	587 -	617	603.29	5.69E+03	109.27	1.21E+04	1.24
m	34	302.81	587 -	617	608.60	3.23E+03	96.24	1.17E+04	1.25
m	35	304.68	587 -	617	612.34	1.36E+03	82.62	1.13E+04	1.25
	36	314.98	624 -	638	632.94	1.60E+03	181.57	1.79E+04	1.77
	37	324.05	645 -	656	651.07	1.40E+03	168.56	1.69E+04	1.05
M	38	330.06	656 -	685	663.10	9.82E+02	163.64	1.05E+04	1.00
m	39	334.39	656 -	685	671.76	1.54E+02	27.39	9.72E+03	1.01
m	40	338.50	656 -	685	679.99	8.27E+02	137.88	1.02E+04	1.01
	41	352.06	696 -	717	707.11	1.73E+05	470.52	2.32E+04	1.38
M	42	387.06	769 -	788	777.14	1.12E+03	74.14	8.26E+03	1.33
m	43	389.12	769 -	788	781.26	1.48E+03	79.54	8.30E+03	1.33
M	44	402.04	797 -	818	807.12	6.85E+03	111.83	8.51E+03	1.36
m	45	405.18	797 -	818	813.40	4.37E+03	97.23	8.55E+03	1.36
	46	427.39	852 -	868	857.84	2.34E+03	168.89	1.42E+04	1.53
	47	445.26	887 -	899	893.57	7.49E+02	121.58	8.50E+03	1.43
	48	455.11	904 -	922	913.29	-2.42E+02	156.12	1.26E+04	1.25
	49	462.13	922 -	932	927.33	1.96E+02	104.86	6.97E+03	1.06
	50	470.10	938 -	947	943.28	6.75E+01	94.86	5.95E+03	1.20
	51	480.73	960 -	971	964.54	-1.12E+02	107.13	7.24E+03	1.15
	52	487.37	971 -	986	977.83	4.82E+02	127.29	8.73E+03	1.51
	53	511.13	1015 -	1036	1025.37	4.06E+03	153.36	9.27E+03	2.76
	54	533.92	1066 -	1082	1070.98	6.21E+02	116.96	7.06E+03	1.32
	55	580.43	1158 -	1175	1164.04	1.10E+03	118.68	6.84E+03	1.48
	56	609.60	1210 -	1230	1222.41	1.30E+05	379.73	6.95E+03	1.54
	57	665.79	1331 -	1341	1334.84	4.06E+03	91.70	2.80E+03	1.56
	58	703.52	1406 -	1417	1410.35	1.46E+03	81.17	3.20E+03	1.96
	59	720.25	1438 -	1456	1443.82	1.06E+03	100.80	4.67E+03	1.75
	60	742.93	1481 -	1501	1489.22	3.58E+02	104.24	5.13E+03	1.69
	61	768.77	1528 -	1548	1540.94	1.21E+04	149.05	4.94E+03	1.58
	62	786.29	1572 -	1583	1576.00	2.58E+03	83.61	2.76E+03	1.66
	63	806.59	1608 -	1624	1616.63	2.69E+03	100.60	4.02E+03	1.61
	64	821.73	1641 -	1651	1646.93	1.02E+02	66.02	2.75E+03	1.85
	65	832.38	1662 -	1676	1668.23	8.93E+02	95.48	4.70E+03	1.46
	66	839.49	1677 -	1691	1682.47	-1.48E+02	92.94	5.02E+03	1.26
	67	934.54	1868 -	1883	1872.72	6.20E+03	112.22	3.55E+03	1.68
	68	964.55	1924 -	1939	1932.79	6.98E+02	80.90	3.25E+03	1.55
	69	1052.48	2104 -	2113	2108.80	5.53E+02	54.27	1.60E+03	2.33
	70	1070.38	2136 -	2153	2144.63	5.89E+02	75.66	2.70E+03	1.88
	71	1120.86	2236 -	2256	2245.67	2.69E+04	181.93	3.01E+03	1.84
	72	1134.28	2258 -	2278	2272.55	-2.65E+03	98.72	6.05E+03	0.64
	73	1155.77	2308 -	2324	2315.57	2.95E+03	85.13	2.32E+03	1.86

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	74	1182.47	2363 -	2375	2369.02	3.03E+02	55.02	1.65E+03	2.31
	75	1208.17	2415 -	2434	2420.46	6.36E+02	73.62	2.39E+03	1.82
	76	1238.71	2472 -	2491	2481.63	9.70E+03	118.94	2.22E+03	1.88
	77	1253.77	2502 -	2526	2511.76	6.80E+02	82.80	2.75E+03	2.34
	78	1281.60	2560 -	2580	2567.50	2.44E+03	83.78	2.23E+03	2.14
M	79	1378.32	2749 -	2783	2761.15	6.26E+03	85.47	1.31E+03	1.99
m	80	1385.98	2749 -	2783	2776.48	1.26E+03	45.21	1.31E+03	2.00
M	81	1402.23	2802 -	2827	2809.02	1.99E+03	53.20	1.25E+03	1.92
m	82	1408.65	2802 -	2827	2821.87	3.50E+03	66.84	1.24E+03	1.92
	83	1509.84	3014 -	3033	3024.51	3.09E+03	88.48	2.37E+03	2.10
M	84	1539.42	3078 -	3105	3083.75	6.19E+02	39.68	1.33E+03	1.99
m	85	1544.04	3078 -	3105	3093.00	4.59E+02	35.28	1.21E+03	1.99
	86	1583.92	3167 -	3184	3172.87	7.49E+02	59.84	1.49E+03	2.10
M	87	1595.26	3190 -	3211	3195.58	3.34E+02	31.17	9.69E+02	2.16
m	88	1599.91	3190 -	3211	3204.88	4.19E+02	32.94	1.02E+03	2.16
	89	1661.99	3314 -	3339	3329.21	1.46E+03	61.10	9.89E+02	2.26
	90	1684.70	3370 -	3381	3374.71	1.84E+02	30.17	4.54E+02	2.34
	91	1693.79	3382 -	3403	3392.91	1.04E+02	45.70	9.45E+02	2.05
	92	1730.30	3455 -	3479	3466.04	3.74E+03	72.46	6.73E+02	2.04
	93	1765.21	3524 -	3546	3535.96	1.99E+04	145.38	5.85E+02	2.21
	94	1838.94	3675 -	3691	3683.65	-3.77E+02	44.35	1.27E+03	1.26
	95	1848.08	3693 -	3710	3701.95	2.13E+03	59.86	7.67E+02	2.35
	96	1873.88	3748 -	3760	3753.63	2.14E+02	28.14	3.50E+02	2.30
	97	1896.60	3794 -	3808	3799.14	1.59E+02	30.19	4.30E+02	1.06

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 3/30/2016 2:02:27PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	32.20	62 -	71	1.73E+04	204.69	1.64E+04	2.58E+02
	2	36.40	73 -	82	2.03E+03	218.51	3.05E+04	3.52E+02
	3	46.68	89 -	99	1.40E+03	213.09	2.84E+04	3.45E+02
M	4	50.27	101 -	112	2.42E+01	116.51	8.16E+03	2.10E+02
m	5	53.29	101 -	112	2.32E+01	111.66	8.10E+03	2.09E+02
	6	67.77	131 -	142	1.44E+04	282.96	4.10E+04	4.22E+02
M	7	74.91	145 -	186	5.36E+03	142.05	2.85E+04	3.93E+02
m	8	77.17	145 -	186	1.07E+04	277.11	2.79E+04	3.89E+02
m	9	81.15	145 -	186	2.69E+03	77.11	2.69E+04	3.81E+02

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
m	10	83.89	145 -	186	7.43E+03	194.02	2.60E+04	3.75E+02
m	11	87.35	145 -	186	3.84E+03	104.44	2.94E+04	3.99E+02
m	12	89.91	145 -	186	4.90E+02	36.33	2.44E+04	3.64E+02
M	13	94.75	187 -	205	-2.61E+03	334.08	2.53E+04	3.70E+02
m	14	97.83	187 -	205	-3.50E+02	56.03	2.25E+04	3.49E+02
	15	113.17	221 -	232	1.44E+03	256.42	4.02E+04	4.17E+02
	16	122.34	241 -	252	8.62E+02	263.54	4.29E+04	4.31E+02
	17	144.13	282 -	295	1.42E+04	331.63	5.64E+04	5.09E+02
	18	154.32	303 -	316	9.26E+03	328.49	5.80E+04	5.17E+02
	19	186.29	368 -	380	2.58E+04	313.72	4.40E+04	4.43E+02
	20	210.79	420 -	433	1.02E+03	259.58	3.90E+04	4.24E+02
	21	236.12	465 -	482	-1.70E+04	359.89	7.71E+04	6.30E+02
	22	242.13	483 -	496	2.70E+04	315.65	4.27E+04	4.43E+02
M	23	254.04	507 -	530	2.45E+03	102.50	1.58E+04	2.93E+02
m	24	256.37	507 -	530	8.78E+03	138.70	1.55E+04	2.89E+02
m	25	259.05	507 -	530	2.55E+03	101.81	1.51E+04	2.86E+02
M	26	269.61	538 -	560	1.76E+04	167.38	1.38E+04	2.73E+02
m	27	271.39	538 -	560	1.40E+04	153.65	1.37E+04	2.72E+02
m	28	274.76	538 -	560	1.73E+03	92.52	1.53E+04	2.88E+02
M	29	281.40	563 -	581	1.22E+02	31.27	1.01E+04	2.33E+02
m	30	283.87	563 -	581	1.60E+03	41.43	1.16E+04	2.50E+02
m	31	286.26	563 -	581	1.79E+03	43.38	1.14E+04	2.48E+02
M	32	295.37	587 -	617	9.13E+04	319.45	1.30E+04	2.65E+02
m	33	300.16	587 -	617	5.69E+03	109.27	1.21E+04	2.56E+02
m	34	302.81	587 -	617	3.23E+03	96.24	1.17E+04	2.51E+02
m	35	304.68	587 -	617	1.36E+03	82.62	1.13E+04	2.47E+02
	36	314.98	624 -	638	1.60E+03	181.57	1.79E+04	2.91E+02
	37	324.05	645 -	656	1.40E+03	168.56	1.69E+04	2.70E+02
M	38	330.06	656 -	685	9.82E+02	163.64	1.05E+04	2.38E+02
m	39	334.39	656 -	685	1.54E+02	27.39	9.72E+03	2.29E+02
m	40	338.50	656 -	685	8.27E+02	137.88	1.02E+04	2.35E+02
	41	352.06	696 -	717	1.73E+05	470.52	2.32E+04	3.63E+02
M	42	387.06	769 -	788	1.12E+03	74.14	8.26E+03	2.11E+02
m	43	389.12	769 -	788	1.48E+03	79.54	8.30E+03	2.12E+02
M	44	402.04	797 -	818	6.85E+03	111.83	8.51E+03	2.15E+02
m	45	405.18	797 -	818	4.37E+03	97.23	8.55E+03	2.15E+02
	46	427.39	852 -	868	2.34E+03	168.89	1.42E+04	2.66E+02
	47	445.26	887 -	899	7.49E+02	121.58	8.50E+03	1.95E+02
	48	455.11	904 -	922	-2.42E+02	156.12	1.26E+04	2.58E+02
	49	462.13	922 -	932	1.96E+02	104.86	6.97E+03	1.71E+02
	50	470.10	938 -	947	6.75E+01	94.86	5.95E+03	1.55E+02
	51	480.73	960 -	971	-1.12E+02	107.13	7.24E+03	1.77E+02
	52	487.37	971 -	986	4.82E+02	127.29	8.73E+03	2.06E+02
	53	511.13	1015 -	1036	4.06E+03	153.36	9.27E+03	2.29E+02
	54	533.92	1066 -	1082	6.21E+02	116.96	7.06E+03	1.88E+02
	55	580.43	1158 -	1175	1.10E+03	118.68	6.84E+03	1.87E+02
	56	609.60	1210 -	1230	1.30E+05	379.73	6.95E+03	1.96E+02
	57	665.79	1331 -	1341	4.06E+03	91.70	2.80E+03	1.08E+02
	58	703.52	1406 -	1417	1.46E+03	81.17	3.20E+03	1.18E+02
	59	720.25	1438 -	1456	1.06E+03	100.80	4.67E+03	1.57E+02

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	60	742.93	1481 -	1501	3.58E+02	104.24	5.13E+03	1.69E+02
	61	768.77	1528 -	1548	1.21E+04	149.05	4.94E+03	1.66E+02
	62	786.29	1572 -	1583	2.58E+03	83.61	2.76E+03	1.09E+02
	63	806.59	1608 -	1624	2.69E+03	100.60	4.02E+03	1.42E+02
	64	821.73	1641 -	1651	1.02E+02	66.02	2.75E+03	1.07E+02
	65	832.38	1662 -	1676	8.93E+02	95.48	4.70E+03	1.49E+02
	66	839.49	1677 -	1691	-1.48E+02	92.94	5.02E+03	1.54E+02
	67	934.54	1868 -	1883	6.20E+03	112.22	3.55E+03	1.32E+02
	68	964.55	1924 -	1939	6.98E+02	80.90	3.25E+03	1.26E+02
	69	1052.48	2104 -	2113	5.53E+02	54.27	1.60E+03	8.05E+01
	70	1070.38	2136 -	2153	5.89E+02	75.66	2.70E+03	1.18E+02
	71	1120.86	2236 -	2256	2.69E+04	181.93	3.01E+03	1.29E+02
	72	1134.28	2258 -	2278	-2.65E+03	98.72	6.05E+03	1.83E+02
	73	1155.77	2308 -	2324	2.95E+03	85.13	2.32E+03	1.08E+02
	74	1182.47	2363 -	2375	3.03E+02	55.02	1.65E+03	8.59E+01
	75	1208.17	2415 -	2434	6.36E+02	73.62	2.39E+03	1.14E+02
	76	1238.71	2472 -	2491	9.70E+03	118.94	2.22E+03	1.10E+02
	77	1253.77	2502 -	2526	6.80E+02	82.80	2.75E+03	1.29E+02
	78	1281.60	2560 -	2580	2.44E+03	83.78	2.23E+03	1.11E+02
M	79	1378.32	2749 -	2783	6.26E+03	85.47	1.31E+03	8.41E+01
m	80	1385.98	2749 -	2783	1.26E+03	45.21	1.31E+03	8.42E+01
M	81	1402.23	2802 -	2827	1.99E+03	53.20	1.25E+03	8.21E+01
m	82	1408.65	2802 -	2827	3.50E+03	66.84	1.24E+03	8.18E+01
	83	1509.84	3014 -	3033	3.09E+03	88.48	2.37E+03	1.13E+02
M	84	1539.42	3078 -	3105	6.19E+02	39.68	1.33E+03	8.49E+01
m	85	1544.04	3078 -	3105	4.59E+02	35.28	1.21E+03	8.10E+01
	86	1583.92	3167 -	3184	7.49E+02	59.84	1.49E+03	8.75E+01
M	87	1595.26	3190 -	3211	3.34E+02	31.17	9.69E+02	7.24E+01
m	88	1599.91	3190 -	3211	4.19E+02	32.94	1.02E+03	7.42E+01
	89	1661.99	3314 -	3339	1.46E+03	61.10	9.89E+02	7.85E+01
	90	1684.70	3370 -	3381	1.84E+02	30.17	4.54E+02	4.43E+01
	91	1693.79	3382 -	3403	1.04E+02	45.70	9.45E+02	7.33E+01
	92	1730.30	3455 -	3479	3.74E+03	72.46	6.73E+02	6.40E+01
	93	1765.21	3524 -	3546	1.99E+04	145.38	5.85E+02	5.84E+01
	94	1838.94	3675 -	3691	-3.77E+02	44.35	1.27E+03	7.97E+01
	95	1848.08	3693 -	3710	2.13E+03	59.86	7.67E+02	6.28E+01
	96	1873.88	3748 -	3760	2.14E+02	28.14	3.50E+02	3.96E+01
	97	1896.60	3794 -	3808	1.59E+02	30.19	4.30E+02	4.51E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

PEAK WITH NID REPORT

Peak Analysis Performed on : 3/30/2016 2:02:27PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB
Peak Match Tolerance : 1.000 keV

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	32.20	62 -	71	67.30	1.73E+04	204.69	1.64E+04	.....
	2	36.40	73 -	82	75.69	2.03E+03	218.51	3.05E+04	I-125
	3	46.68	89 -	99	96.25	1.40E+03	213.09	2.84E+04	PB-210
M	4	50.27	101 -	112	103.44	2.42E+01	116.51	8.16E+03	TH-227
m	5	53.29	101 -	112	109.47	2.32E+01	111.66	8.10E+03	PB-214
									U-234
									BA-133
	6	67.77	131 -	142	138.44	1.44E+04	282.96	4.10E+04	CS-136
M	7	74.91	145 -	186	152.72	5.36E+03	142.05	2.85E+04	TH-229
									AM-243
									PA-233
m	8	77.17	145 -	186	157.24	1.07E+04	277.11	2.79E+04	.....
m	9	81.15	145 -	186	165.19	2.69E+03	77.11	2.69E+04	TH-231
									BA-133
m	10	83.89	145 -	186	170.69	7.43E+03	194.02	2.60E+04	TH-231
									TH-228
									TH-234
m	11	87.35	145 -	186	177.60	3.84E+03	104.44	2.94E+04	PA-233
									CD-109
									EU-155
									NP-237
									CS-136
m	12	89.91	145 -	186	182.72	4.90E+02	36.33	2.44E+04	TH-231
M	13	94.75	187 -	205	192.39	-2.61E+03	334.08	2.53E+04	NP-237
									TH-227
m	14	97.83	187 -	205	198.56	-3.50E+02	56.03	2.25E+04	GD-153
									U-233
	15	113.17	221 -	232	229.24	1.44E+03	256.42	4.02E+04	TH-234
	16	122.34	241 -	252	247.58	8.62E+02	263.54	4.29E+04	RA-223
									CO-57
									EU-152
									EU-154
	17	144.13	282 -	295	291.17	1.42E+04	331.63	5.64E+04	RA-223
									U-235
									NP-237
	18	154.32	303 -	316	311.55	9.26E+03	328.49	5.80E+04	TH-229
									RA-223
									AC-228
	19	186.29	368 -	380	375.50	2.58E+04	313.72	4.40E+04	PA-234
									RA-226
									U-235
	20	210.79	420 -	433	424.52	1.02E+03	259.58	3.90E+04	TH-229
									TH-227

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	21	236.12	465 -	482	475.18	-1.70E+04	359.89	7.71E+04	TH-227 NB-95m
	22	242.13	483 -	496	487.21	2.70E+04	315.65	4.27E+04	PB-214
M	23	254.04	507 -	530	511.02	2.45E+03	102.50	1.58E+04	.....
m	24	256.37	507 -	530	515.68	8.78E+03	138.70	1.55E+04	TH-227
m	25	259.05	507 -	530	521.05	2.55E+03	101.81	1.51E+04	PB-214
M	26	269.61	538 -	560	542.18	1.76E+04	167.38	1.38E+04	RA-223 AC-228
m	27	271.39	538 -	560	545.73	1.40E+04	153.65	1.37E+04	PA-233 RN-219 PA-234
m	28	274.76	538 -	560	552.47	1.73E+03	92.52	1.53E+04	.....
M	29	281.40	563 -	581	565.76	1.22E+02	31.27	1.01E+04	.....
m	30	283.87	563 -	581	570.71	1.60E+03	41.43	1.16E+04	PA-231 I-131
m	31	286.26	563 -	581	575.48	1.79E+03	43.38	1.14E+04	TH-227
M	32	295.37	587 -	617	593.71	9.13E+04	319.45	1.30E+04	PB-214 EU-152 IR-192
m	33	300.16	587 -	617	603.29	5.69E+03	109.27	1.21E+04	PB-212 PA-231 TH-227 PA-233
m	34	302.81	587 -	617	608.60	3.23E+03	96.24	1.17E+04	BA-133 PA-231
m	35	304.68	587 -	617	612.34	1.36E+03	82.62	1.13E+04	BA-140 TH-227 KR-85M SE-75
	36	314.98	624 -	638	632.94	1.60E+03	181.57	1.79E+04	.....
	37	324.05	645 -	656	651.07	1.40E+03	168.56	1.69E+04	RA-223
M	38	330.06	656 -	685	663.10	9.82E+02	163.64	1.05E+04	PA-231 TH-227 PA-234
m	39	334.39	656 -	685	671.76	1.54E+02	27.39	9.72E+03	TH-227 NP-239
m	40	338.50	656 -	685	679.99	8.27E+02	137.88	1.02E+04	AC-228 RA-223
	41	352.06	696 -	717	707.11	1.73E+05	470.52	2.32E+04	PB-214 BI-211
M	42	387.06	769 -	788	777.14	1.12E+03	74.14	8.26E+03	.....
m	43	389.12	769 -	788	781.26	1.48E+03	79.54	8.30E+03	I-126
M	44	402.04	797 -	818	807.12	6.85E+03	111.83	8.51E+03	RN-219 KR-87
m	45	405.18	797 -	818	813.40	4.37E+03	97.23	8.55E+03	I-134 PB-211
	46	427.39	852 -	868	857.84	2.34E+03	168.89	1.42E+04	PB-211 SB-125
	47	445.26	887 -	899	893.57	7.49E+02	121.58	8.50E+03	EU-154
	48	455.11	904 -	922	913.29	-2.42E+02	156.12	1.26E+04	.....
	49	462.13	922 -	932	927.33	1.96E+02	104.86	6.97E+03	CS-138 AC-228
	50	470.10	938 -	947	943.28	6.75E+01	94.86	5.95E+03	.....
	51	480.73	960 -	971	964.54	-1.12E+02	107.13	7.24E+03	.....

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	52	487.37	971 -	986	977.83	4.82E+02	127.29	8.73E+03	LA-140
	53	511.13	1015 -	1036	1025.37	4.06E+03	153.36	9.27E+03	TL-208
	54	533.92	1066 -	1082	1070.98	6.21E+02	116.96	7.06E+03	.....
	55	580.43	1158 -	1175	1164.04	1.10E+03	118.68	6.84E+03	.....
	56	609.60	1210 -	1230	1222.41	1.30E+05	379.73	6.95E+03	BI-214
									RU-103
	57	665.79	1331 -	1341	1334.84	4.06E+03	91.70	2.80E+03	BI-214
									SB-126
									PA-234
	58	703.52	1406 -	1417	1410.35	1.46E+03	81.17	3.20E+03	NB-94x
	59	720.25	1438 -	1456	1443.82	1.06E+03	100.80	4.67E+03	SB-126
	60	742.93	1481 -	1501	1489.22	3.58E+02	104.24	5.13E+03	PA-234
	61	768.77	1528 -	1548	1540.94	1.21E+04	149.05	4.94E+03	BI-214
	62	786.29	1572 -	1583	1576.00	2.58E+03	83.61	2.76E+03	PA-234
									PB-214
									CS-135
									BI-212
	63	806.59	1608 -	1624	1616.63	2.69E+03	100.60	4.02E+03	BI-214
	64	821.73	1641 -	1651	1646.93	1.02E+02	66.02	2.75E+03	.....
	65	832.38	1662 -	1676	1668.23	8.93E+02	95.48	4.70E+03	PB-211
									PA-234
	66	839.49	1677 -	1691	1682.47	-1.48E+02	92.94	5.02E+03	PB-214
									AC-228
	67	934.54	1868 -	1883	1872.72	6.20E+03	112.22	3.55E+03	BI-214
	68	964.55	1924 -	1939	1932.79	6.98E+02	80.90	3.25E+03	AC-228
									EU-152
	69	1052.48	2104 -	2113	2108.80	5.53E+02	54.27	1.60E+03	.....
	70	1070.38	2136 -	2153	2144.63	5.89E+02	75.66	2.70E+03	.....
	71	1120.86	2236 -	2256	2245.67	2.69E+04	181.93	3.01E+03	BI-214
	72	1134.28	2258 -	2278	2272.55	-2.65E+03	98.72	6.05E+03	.....
	73	1155.77	2308 -	2324	2315.57	2.95E+03	85.13	2.32E+03	BI-214
	74	1182.47	2363 -	2375	2369.02	3.03E+02	55.02	1.65E+03	.....
	75	1208.17	2415 -	2434	2420.46	6.36E+02	73.62	2.39E+03	BI-214
	76	1238.71	2472 -	2491	2481.63	9.70E+03	118.94	2.22E+03	CO-56
									BI-214
	77	1253.77	2502 -	2526	2511.76	6.80E+02	82.80	2.75E+03	.....
	78	1281.60	2560 -	2580	2567.50	2.44E+03	83.78	2.23E+03	BI-214
M	79	1378.32	2749 -	2783	2761.15	6.26E+03	85.47	1.31E+03	BI-214
m	80	1385.98	2749 -	2783	2776.48	1.26E+03	45.21	1.31E+03	BI-214
M	81	1402.23	2802 -	2827	2809.02	1.99E+03	53.20	1.25E+03	BI-214
m	82	1408.65	2802 -	2827	2821.87	3.50E+03	66.84	1.24E+03	EU-152
									BI-214
	83	1509.84	3014 -	3033	3024.51	3.09E+03	88.48	2.37E+03	I-124
									BI-214
M	84	1539.42	3078 -	3105	3083.75	6.19E+02	39.68	1.33E+03	.....
m	85	1544.04	3078 -	3105	3093.00	4.59E+02	35.28	1.21E+03	.....
	86	1583.92	3167 -	3184	3172.87	7.49E+02	59.84	1.49E+03	BI-214
M	87	1595.26	3190 -	3211	3195.58	3.34E+02	31.17	9.69E+02	LA-140
m	88	1599.91	3190 -	3211	3204.88	4.19E+02	32.94	1.02E+03	.....
	89	1661.99	3314 -	3339	3329.21	1.46E+03	61.10	9.89E+02	BI-214
	90	1684.70	3370 -	3381	3374.71	1.84E+02	30.17	4.54E+02	.....
	91	1693.79	3382 -	3403	3392.91	1.04E+02	45.70	9.45E+02	PA-234
	92	1730.30	3455 -	3479	3466.04	3.74E+03	72.46	6.73E+02	BI-214
	93	1765.21	3524 -	3546	3535.96	1.99E+04	145.38	5.85E+02	BI-214

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
94	1838.94	3675 -	3691	3683.65	-3.77E+02	44.35	1.27E+03	.....
95	1848.08	3693 -	3710	3701.95	2.13E+03	59.86	7.67E+02	BI-214
96	1873.88	3748 -	3760	3753.63	2.14E+02	28.14	3.50E+02	.....
97	1896.60	3794 -	3808	3799.14	1.59E+02	30.19	4.30E+02	.....

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 3/30/2016 2:02:27PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	32.20	1.73E+04	204.69	3.72E-03	2.28E-04
	2	36.40	2.03E+03	218.51	4.40E-03	2.28E-04
	3	46.68	1.40E+03	213.09	5.70E-03	2.28E-04
M	4	50.27	2.42E+01	116.51	6.03E-03	2.28E-04
m	5	53.29	2.32E+01	111.66	6.27E-03	2.28E-04
	6	67.77	1.44E+04	282.96	7.01E-03	2.88E-04
M	7	74.91	5.36E+03	142.05	7.19E-03	3.39E-04
m	8	77.17	1.07E+04	277.11	7.23E-03	3.56E-04
m	9	81.15	2.69E+03	77.11	7.27E-03	3.84E-04
m	10	83.89	7.43E+03	194.02	7.29E-03	4.04E-04
m	11	87.35	3.84E+03	104.44	7.31E-03	4.29E-04
m	12	89.91	4.90E+02	36.33	7.31E-03	4.32E-04
M	13	94.75	-2.61E+03	334.08	7.29E-03	4.25E-04
m	14	97.83	-3.50E+02	56.03	7.28E-03	4.22E-04
	15	113.17	1.44E+03	256.42	7.12E-03	4.02E-04
	16	122.34	8.62E+02	263.54	6.98E-03	3.90E-04
	17	144.13	1.42E+04	331.63	6.61E-03	3.59E-04
	18	154.32	9.26E+03	328.49	6.42E-03	3.44E-04
	19	186.29	2.58E+04	313.72	5.86E-03	3.19E-04
	20	210.79	1.02E+03	259.58	5.46E-03	3.09E-04
	21	236.12	-1.70E+04	359.89	5.09E-03	2.99E-04
	22	242.13	2.70E+04	315.65	5.00E-03	2.97E-04
M	23	254.04	2.45E+03	102.50	4.85E-03	2.92E-04
m	24	256.37	8.78E+03	138.70	4.82E-03	2.91E-04
m	25	259.05	2.55E+03	101.81	4.78E-03	2.90E-04
M	26	269.61	1.76E+04	167.38	4.66E-03	2.86E-04
m	27	271.39	1.40E+04	153.65	4.63E-03	2.85E-04
m	28	274.76	1.73E+03	92.52	4.59E-03	2.84E-04
M	29	281.40	1.22E+02	31.27	4.52E-03	2.81E-04
m	30	283.87	1.60E+03	41.43	4.49E-03	2.80E-04
m	31	286.26	1.79E+03	43.38	4.46E-03	2.79E-04

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
M	32	295.37	9.13E+04	319.45	4.37E-03	2.75E-04
m	33	300.16	5.69E+03	109.27	4.32E-03	2.74E-04
m	34	302.81	3.23E+03	96.24	4.29E-03	2.72E-04
m	35	304.68	1.36E+03	82.62	4.27E-03	2.72E-04
	36	314.98	1.60E+03	181.57	4.17E-03	2.68E-04
	37	324.05	1.40E+03	168.56	4.08E-03	2.64E-04
M	38	330.06	9.82E+02	163.64	4.03E-03	2.62E-04
m	39	334.39	1.54E+02	27.39	3.99E-03	2.60E-04
m	40	338.50	8.27E+02	137.88	3.95E-03	2.58E-04
	41	352.06	1.73E+05	470.52	3.84E-03	2.53E-04
M	42	387.06	1.12E+03	74.14	3.57E-03	2.39E-04
m	43	389.12	1.48E+03	79.54	3.56E-03	2.38E-04
M	44	402.04	6.85E+03	111.83	3.47E-03	2.31E-04
m	45	405.18	4.37E+03	97.23	3.45E-03	2.29E-04
	46	427.39	2.34E+03	168.89	3.30E-03	2.15E-04
	47	445.26	7.49E+02	121.58	3.20E-03	2.04E-04
	48	455.11	-2.42E+02	156.12	3.15E-03	1.99E-04
	49	462.13	1.96E+02	104.86	3.11E-03	1.94E-04
	50	470.10	6.75E+01	94.86	3.07E-03	1.89E-04
	51	480.73	-1.12E+02	107.13	3.01E-03	1.83E-04
	52	487.37	4.82E+02	127.29	2.98E-03	1.79E-04
	53	511.13	4.06E+03	153.36	2.87E-03	1.65E-04
	54	533.92	6.21E+02	116.96	2.77E-03	1.51E-04
	55	580.43	1.10E+03	118.68	2.59E-03	1.23E-04
	56	609.60	1.30E+05	379.73	2.49E-03	1.05E-04
	57	665.79	4.06E+03	91.70	2.32E-03	7.49E-05
	58	703.52	1.46E+03	81.17	2.22E-03	8.30E-05
	59	720.25	1.06E+03	100.80	2.17E-03	8.66E-05
	60	742.93	3.58E+02	104.24	2.12E-03	9.15E-05
	61	768.77	1.21E+04	149.05	2.06E-03	9.70E-05
	62	786.29	2.58E+03	83.61	2.02E-03	1.01E-04
	63	806.59	2.69E+03	100.60	1.98E-03	1.05E-04
	64	821.73	1.02E+02	66.02	1.95E-03	1.08E-04
	65	832.38	8.93E+02	95.48	1.93E-03	1.11E-04
	66	839.49	-1.48E+02	92.94	1.92E-03	1.12E-04
	67	934.54	6.20E+03	112.22	1.76E-03	1.14E-04
	68	964.55	6.98E+02	80.90	1.72E-03	1.05E-04
	69	1052.48	5.53E+02	54.27	1.60E-03	7.96E-05
	70	1070.38	5.89E+02	75.66	1.58E-03	7.44E-05
	71	1120.86	2.69E+04	181.93	1.52E-03	5.96E-05
	72	1134.28	-2.65E+03	98.72	1.51E-03	5.57E-05
	73	1155.77	2.95E+03	85.13	1.49E-03	4.94E-05
	74	1182.47	3.03E+02	55.02	1.46E-03	4.41E-05
	75	1208.17	6.36E+02	73.62	1.44E-03	4.34E-05
	76	1238.71	9.70E+03	118.94	1.41E-03	4.25E-05
	77	1253.77	6.80E+02	82.80	1.39E-03	4.21E-05
	78	1281.60	2.44E+03	83.78	1.37E-03	4.13E-05
M	79	1378.32	6.26E+03	85.47	1.29E-03	3.94E-05
m	80	1385.98	1.26E+03	45.21	1.29E-03	3.93E-05
M	81	1402.23	1.99E+03	53.20	1.28E-03	3.91E-05
m	82	1408.65	3.50E+03	66.84	1.27E-03	3.90E-05
	83	1509.84	3.09E+03	88.48	1.21E-03	3.78E-05
M	84	1539.42	6.19E+02	39.68	1.19E-03	3.74E-05

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
m	85	1544.04	4.59E+02	35.28	1.19E-03	3.74E-05
	86	1583.92	7.49E+02	59.84	1.16E-03	3.69E-05
M	87	1595.26	3.34E+02	31.17	1.16E-03	3.67E-05
m	88	1599.91	4.19E+02	32.94	1.15E-03	3.67E-05
	89	1661.99	1.46E+03	61.10	1.12E-03	3.59E-05
	90	1684.70	1.84E+02	30.17	1.11E-03	3.56E-05
	91	1693.79	1.04E+02	45.70	1.10E-03	3.55E-05
	92	1730.30	3.74E+03	72.46	1.09E-03	3.51E-05
	93	1765.21	1.99E+04	145.38	1.07E-03	3.47E-05
	94	1838.94	-3.77E+02	44.35	1.04E-03	3.38E-05
	95	1848.08	2.13E+03	59.86	1.03E-03	3.38E-05
	96	1873.88	2.14E+02	28.14	1.02E-03	3.38E-05
	97	1896.60	1.59E+02	30.19	1.01E-03	3.38E-05

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 3/30/2016 2:02:27PM

Env. Background File : \\NHHJ-6\ApexRoot\Default\Data\0000006791.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	32.20	1.73E+04	204.69			1.73E+04	2.05E+02
	2	36.40	2.03E+03	218.51			2.03E+03	2.19E+02
	3	46.68	1.40E+03	213.09	2.73E+01	2.86E+00	1.37E+03	2.13E+02
M	4	50.27	2.42E+01	116.51			2.42E+01	1.17E+02
m	5	53.29	2.32E+01	111.66			2.32E+01	1.12E+02
	6	67.77	1.44E+04	282.96			1.44E+04	2.83E+02
M	7	74.91	5.36E+03	142.05			5.36E+03	1.42E+02
m	8	77.17	1.07E+04	277.11			1.07E+04	2.77E+02
m	9	81.15	2.69E+03	77.11			2.69E+03	7.71E+01
m	10	83.89	7.43E+03	194.02			7.43E+03	1.94E+02
m	11	87.35	3.84E+03	104.44			3.84E+03	1.04E+02
m	12	89.91	4.90E+02	36.33			4.90E+02	3.63E+01
M	13	94.75	-2.61E+03	334.08			-2.61E+03	3.34E+02
m	14	97.83	-3.50E+02	56.03			-3.50E+02	5.60E+01
	15	113.17	1.44E+03	256.42			1.44E+03	2.56E+02
	16	122.34	8.62E+02	263.54			8.62E+02	2.64E+02
	17	144.13	1.42E+04	331.63			1.42E+04	3.32E+02
	18	154.32	9.26E+03	328.49			9.26E+03	3.28E+02
	19	186.29	2.58E+04	313.72	2.96E+01	3.21E+00	2.58E+04	3.14E+02
	20	210.79	1.02E+03	259.58			1.02E+03	2.60E+02
	21	236.12	-1.70E+04	359.89			-1.70E+04	3.60E+02
	22	242.13	2.70E+04	315.65			2.70E+04	3.16E+02

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	23	254.04	2.45E+03	102.50			2.45E+03	1.02E+02
m	24	256.37	8.78E+03	138.70			8.78E+03	1.39E+02
m	25	259.05	2.55E+03	101.81			2.55E+03	1.02E+02
M	26	269.61	1.76E+04	167.38			1.76E+04	1.67E+02
m	27	271.39	1.40E+04	153.65			1.40E+04	1.54E+02
m	28	274.76	1.73E+03	92.52			1.73E+03	9.25E+01
M	29	281.40	1.22E+02	31.27			1.22E+02	3.13E+01
m	30	283.87	1.60E+03	41.43			1.60E+03	4.14E+01
m	31	286.26	1.79E+03	43.38			1.79E+03	4.34E+01
M	32	295.37	9.13E+04	319.45			9.13E+04	3.19E+02
m	33	300.16	5.69E+03	109.27			5.69E+03	1.09E+02
m	34	302.81	3.23E+03	96.24			3.23E+03	9.62E+01
m	35	304.68	1.36E+03	82.62			1.36E+03	8.26E+01
	36	314.98	1.60E+03	181.57			1.60E+03	1.82E+02
	37	324.05	1.40E+03	168.56			1.40E+03	1.69E+02
M	38	330.06	9.82E+02	163.64			9.82E+02	1.64E+02
m	39	334.39	1.54E+02	27.39			1.54E+02	2.74E+01
m	40	338.50	8.27E+02	137.88			8.27E+02	1.38E+02
	41	352.06	1.73E+05	470.52			1.73E+05	4.71E+02
M	42	387.06	1.12E+03	74.14			1.12E+03	7.41E+01
m	43	389.12	1.48E+03	79.54			1.48E+03	7.95E+01
M	44	402.04	6.85E+03	111.83			6.85E+03	1.12E+02
m	45	405.18	4.37E+03	97.23			4.37E+03	9.72E+01
	46	427.39	2.34E+03	168.89			2.34E+03	1.69E+02
	47	445.26	7.49E+02	121.58			7.49E+02	1.22E+02
	48	455.11	-2.42E+02	156.12			-2.42E+02	1.56E+02
	49	462.13	1.96E+02	104.86			1.96E+02	1.05E+02
	50	470.10	6.75E+01	94.86			6.75E+01	9.49E+01
	51	480.73	-1.12E+02	107.13			-1.12E+02	1.07E+02
	52	487.37	4.82E+02	127.29			4.82E+02	1.27E+02
	53	511.13	4.06E+03	153.36	7.31E+01	3.34E+00	3.98E+03	1.53E+02
	54	533.92	6.21E+02	116.96			6.21E+02	1.17E+02
	55	580.43	1.10E+03	118.68			1.10E+03	1.19E+02
	56	609.60	1.30E+05	379.73			1.30E+05	3.80E+02
	57	665.79	4.06E+03	91.70			4.06E+03	9.17E+01
	58	703.52	1.46E+03	81.17			1.46E+03	8.12E+01
	59	720.25	1.06E+03	100.80			1.06E+03	1.01E+02
	60	742.93	3.58E+02	104.24			3.58E+02	1.04E+02
	61	768.77	1.21E+04	149.05			1.21E+04	1.49E+02
	62	786.29	2.58E+03	83.61			2.58E+03	8.36E+01
	63	806.59	2.69E+03	100.60			2.69E+03	1.01E+02
	64	821.73	1.02E+02	66.02			1.02E+02	6.60E+01
	65	832.38	8.93E+02	95.48			8.93E+02	9.55E+01
	66	839.49	-1.48E+02	92.94			-1.48E+02	9.29E+01
	67	934.54	6.20E+03	112.22			6.20E+03	1.12E+02
	68	964.55	6.98E+02	80.90			6.98E+02	8.09E+01
	69	1052.48	5.53E+02	54.27			5.53E+02	5.43E+01
	70	1070.38	5.89E+02	75.66			5.89E+02	7.57E+01
	71	1120.86	2.69E+04	181.93			2.69E+04	1.82E+02
	72	1134.28	-2.65E+03	98.72			-2.65E+03	9.87E+01
	73	1155.77	2.95E+03	85.13			2.95E+03	8.51E+01
	74	1182.47	3.03E+02	55.02			3.03E+02	5.50E+01
	75	1208.17	6.36E+02	73.62			6.36E+02	7.36E+01
	76	1238.71	9.70E+03	118.94			9.70E+03	1.19E+02

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	77	1253.77	6.80E+02	82.80			6.80E+02	8.28E+01
	78	1281.60	2.44E+03	83.78			2.44E+03	8.38E+01
M	79	1378.32	6.26E+03	85.47			6.26E+03	8.55E+01
m	80	1385.98	1.26E+03	45.21			1.26E+03	4.52E+01
M	81	1402.23	1.99E+03	53.20			1.99E+03	5.32E+01
m	82	1408.65	3.50E+03	66.84			3.50E+03	6.68E+01
	83	1509.84	3.09E+03	88.48			3.09E+03	8.85E+01
M	84	1539.42	6.19E+02	39.68			6.19E+02	3.97E+01
m	85	1544.04	4.59E+02	35.28			4.59E+02	3.53E+01
	86	1583.92	7.49E+02	59.84			7.49E+02	5.98E+01
M	87	1595.26	3.34E+02	31.17			3.34E+02	3.12E+01
m	88	1599.91	4.19E+02	32.94			4.19E+02	3.29E+01
	89	1661.99	1.46E+03	61.10			1.46E+03	6.11E+01
	90	1684.70	1.84E+02	30.17			1.84E+02	3.02E+01
	91	1693.79	1.04E+02	45.70			1.04E+02	4.57E+01
	92	1730.30	3.74E+03	72.46			3.74E+03	7.25E+01
	93	1765.21	1.99E+04	145.38			1.99E+04	1.45E+02
	94	1838.94	-3.77E+02	44.35			-3.77E+02	4.44E+01
	95	1848.08	2.13E+03	59.86			2.13E+03	5.99E+01
	96	1873.88	2.14E+02	28.14			2.14E+02	2.81E+01
	97	1896.60	1.59E+02	30.19			1.59E+02	3.02E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 3/30/2016 2:02:27PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\NHHJ-6\ApexRoot\Default\Data\0000006791.CNF

Corrected Area is: Original * Peak Ratio - Background

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	32.20	1.73E+04	204.69			1.73E+04	2.05E+02
	2	36.40	2.03E+03	218.51			2.03E+03	2.19E+02
	3	46.68	1.40E+03	213.09	2.73E+01	2.86E+00	1.37E+03	2.13E+02
M	4	50.27	2.42E+01	116.51			2.42E+01	1.17E+02
m	5	53.29	2.32E+01	111.66			2.32E+01	1.12E+02
	6	67.77	1.44E+04	282.96			1.44E+04	2.83E+02
M	7	74.91	5.36E+03	142.05			5.36E+03	1.42E+02
m	8	77.17	1.07E+04	277.11			1.07E+04	2.77E+02
m	9	81.15	2.69E+03	77.11			2.69E+03	7.71E+01

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
m	10	83.89	7.43E+03	194.02			7.43E+03	1.94E+02
m	11	87.35	3.84E+03	104.44			3.84E+03	1.04E+02
m	12	89.91	4.90E+02	36.33			4.90E+02	3.63E+01
M	13	94.75	-2.61E+03	334.08			-2.61E+03	3.34E+02
m	14	97.83	-3.50E+02	56.03			-3.50E+02	5.60E+01
	15	113.17	1.44E+03	256.42			1.44E+03	2.56E+02
	16	122.34	8.62E+02	263.54			8.62E+02	2.64E+02
	17	144.13	1.42E+04	331.63			1.42E+04	3.32E+02
	18	154.32	9.26E+03	328.49			9.26E+03	3.28E+02
	19	186.29	2.58E+04	313.72	2.96E+01	3.21E+00	2.58E+04	3.14E+02
	20	210.79	1.02E+03	259.58			1.02E+03	2.60E+02
	21	236.12	-1.70E+04	359.89			-1.70E+04	3.60E+02
	22	242.13	2.70E+04	315.65			2.70E+04	3.16E+02
M	23	254.04	2.45E+03	102.50			2.45E+03	1.02E+02
m	24	256.37	8.78E+03	138.70			8.78E+03	1.39E+02
m	25	259.05	2.55E+03	101.81			2.55E+03	1.02E+02
M	26	269.61	1.76E+04	167.38			1.76E+04	1.67E+02
m	27	271.39	1.40E+04	153.65			1.40E+04	1.54E+02
m	28	274.76	1.73E+03	92.52			1.73E+03	9.25E+01
M	29	281.40	1.22E+02	31.27			1.22E+02	3.13E+01
m	30	283.87	1.60E+03	41.43			1.60E+03	4.14E+01
m	31	286.26	1.79E+03	43.38			1.79E+03	4.34E+01
M	32	295.37	9.13E+04	319.45			9.13E+04	3.19E+02
m	33	300.16	5.69E+03	109.27			5.69E+03	1.09E+02
m	34	302.81	3.23E+03	96.24			3.23E+03	9.62E+01
m	35	304.68	1.36E+03	82.62			1.36E+03	8.26E+01
	36	314.98	1.60E+03	181.57			1.60E+03	1.82E+02
	37	324.05	1.40E+03	168.56			1.40E+03	1.69E+02
M	38	330.06	9.82E+02	163.64			9.82E+02	1.64E+02
m	39	334.39	1.54E+02	27.39			1.54E+02	2.74E+01
m	40	338.50	8.27E+02	137.88			8.27E+02	1.38E+02
	41	352.06	1.73E+05	470.52			1.73E+05	4.71E+02
M	42	387.06	1.12E+03	74.14			1.12E+03	7.41E+01
m	43	389.12	1.48E+03	79.54			1.48E+03	7.95E+01
M	44	402.04	6.85E+03	111.83			6.85E+03	1.12E+02
m	45	405.18	4.37E+03	97.23			4.37E+03	9.72E+01
	46	427.39	2.34E+03	168.89			2.34E+03	1.69E+02
	47	445.26	7.49E+02	121.58			7.49E+02	1.22E+02
	48	455.11	-2.42E+02	156.12			-2.42E+02	1.56E+02
	49	462.13	1.96E+02	104.86			1.96E+02	1.05E+02
	50	470.10	6.75E+01	94.86			6.75E+01	9.49E+01
	51	480.73	-1.12E+02	107.13			-1.12E+02	1.07E+02
	52	487.37	4.82E+02	127.29			4.82E+02	1.27E+02
	53	511.13	4.06E+03	153.36	7.31E+01	3.34E+00	3.98E+03	1.53E+02
	54	533.92	6.21E+02	116.96			6.21E+02	1.17E+02
	55	580.43	1.10E+03	118.68			1.10E+03	1.19E+02
	56	609.60	1.30E+05	379.73			1.30E+05	3.80E+02
	57	665.79	4.06E+03	91.70			4.06E+03	9.17E+01
	58	703.52	1.46E+03	81.17			1.46E+03	8.12E+01
	59	720.25	1.06E+03	100.80			1.06E+03	1.01E+02
	60	742.93	3.58E+02	104.24			3.58E+02	1.04E+02
	61	768.77	1.21E+04	149.05			1.21E+04	1.49E+02
	62	786.29	2.58E+03	83.61			2.58E+03	8.36E+01
	63	806.59	2.69E+03	100.60			2.69E+03	1.01E+02

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	64	821.73	1.02E+02	66.02			1.02E+02	6.60E+01
	65	832.38	8.93E+02	95.48			8.93E+02	9.55E+01
	66	839.49	-1.48E+02	92.94			-1.48E+02	9.29E+01
	67	934.54	6.20E+03	112.22			6.20E+03	1.12E+02
	68	964.55	6.98E+02	80.90			6.98E+02	8.09E+01
	69	1052.48	5.53E+02	54.27			5.53E+02	5.43E+01
	70	1070.38	5.89E+02	75.66			5.89E+02	7.57E+01
	71	1120.86	2.69E+04	181.93			2.69E+04	1.82E+02
	72	1134.28	-2.65E+03	98.72			-2.65E+03	9.87E+01
	73	1155.77	2.95E+03	85.13			2.95E+03	8.51E+01
	74	1182.47	3.03E+02	55.02			3.03E+02	5.50E+01
	75	1208.17	6.36E+02	73.62			6.36E+02	7.36E+01
	76	1238.71	9.70E+03	118.94			9.70E+03	1.19E+02
	77	1253.77	6.80E+02	82.80			6.80E+02	8.28E+01
	78	1281.60	2.44E+03	83.78			2.44E+03	8.38E+01
M	79	1378.32	6.26E+03	85.47			6.26E+03	8.55E+01
m	80	1385.98	1.26E+03	45.21			1.26E+03	4.52E+01
M	81	1402.23	1.99E+03	53.20			1.99E+03	5.32E+01
m	82	1408.65	3.50E+03	66.84			3.50E+03	6.68E+01
	83	1509.84	3.09E+03	88.48			3.09E+03	8.85E+01
M	84	1539.42	6.19E+02	39.68			6.19E+02	3.97E+01
m	85	1544.04	4.59E+02	35.28			4.59E+02	3.53E+01
	86	1583.92	7.49E+02	59.84			7.49E+02	5.98E+01
M	87	1595.26	3.34E+02	31.17			3.34E+02	3.12E+01
m	88	1599.91	4.19E+02	32.94			4.19E+02	3.29E+01
	89	1661.99	1.46E+03	61.10			1.46E+03	6.11E+01
	90	1684.70	1.84E+02	30.17			1.84E+02	3.02E+01
	91	1693.79	1.04E+02	45.70			1.04E+02	4.57E+01
	92	1730.30	3.74E+03	72.46			3.74E+03	7.25E+01
	93	1765.21	1.99E+04	145.38			1.99E+04	1.45E+02
	94	1838.94	-3.77E+02	44.35			-3.77E+02	4.44E+01
	95	1848.08	2.13E+03	59.86			2.13E+03	5.99E+01
	96	1873.88	2.14E+02	28.14			2.14E+02	2.81E+01
	97	1896.60	1.59E+02	30.19			1.59E+02	3.02E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

IDENTIFIED NUCLIDES

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
I-126	0.881	388.63	*	34.10	7.43E+02	6.62E+01
BA-133	0.999	53.16	*	2.20	5.56E+00	2.68E+01
		79.62		2.62		
		81.00	*	34.06	3.59E+01	2.18E+00
		160.61		0.64		
		223.23		0.45		
		276.40		7.16		
		302.85	*	18.33	1.36E+02	9.53E+00
		356.02		62.05		
		383.85		8.94		
EU-152	0.979	121.78	*	28.42	1.43E+01	4.46E+00
		244.70		7.49		
		295.94	*	0.44	1.57E+05	1.05E+04
		344.28		26.58		
		411.12		2.23		
		443.98		3.09		
		688.67		0.83		
		778.90		12.96		
		867.39		4.15		
		964.13	*	14.50	9.24E+01	1.22E+01
		1005.28		0.65		
		1085.87		10.16		
		1089.70		1.71		
		1112.12		13.54		
		1212.95		1.40		
		1299.12		1.63		
		1408.01	*	20.87	4.35E+02	1.58E+01
GD-153	0.986	69.67		2.54		
		97.43	*	30.20	-6.11E+00	1.04E+00
		103.18		21.44		
PB-210	0.997	46.54	*	4.25	1.86E+02	3.46E+01
BI-211	0.853	351.06	*	12.91	1.14E+04	7.58E+02
PB-211	0.984	404.85	*	3.78	1.10E+03	7.82E+01
		427.09	*	1.76	1.32E+03	1.31E+02
		704.64		0.46		
		766.51		0.62		
		832.01	*	3.52	4.29E+02	5.24E+01
BI-214	0.953	609.31	*	44.80	3.81E+03	1.68E+02
		665.45	*	1.29	4.45E+03	2.04E+02
		768.36	*	4.80	4.00E+03	2.03E+02
		806.17	*	1.22	3.63E+03	2.52E+02
		934.06	*	3.03	3.80E+03	2.63E+02
		1120.29	*	14.80	3.91E+03	1.64E+02
		1155.19	*	1.64	3.96E+03	1.99E+02
		1207.68	*	0.49	2.96E+03	4.65E+02
		1238.11	*	5.86	3.85E+03	1.36E+02
		1280.96	*	1.44	4.05E+03	2.03E+02
		1377.67	*	3.92	4.04E+03	1.58E+02
		1385.31	*	0.89	3.60E+03	4.01E+02
		1401.50	*	1.55	3.29E+03	3.85E+02
		1407.98	*	2.80	3.22E+03	4.74E+02
		1415.80		0.48		
		1509.23	*	2.12	3.95E+03	1.84E+02

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.953	1583.22	*	0.70	3.00E+03	2.65E+02
		1661.28	*	1.14	3.74E+03	2.20E+02
		1729.59	*	2.88	3.91E+03	1.68E+02
		1764.49	*	15.36	3.96E+03	1.41E+02
		1847.42	*	2.04	3.30E+03	1.57E+02
PB-214	0.996	53.23	*	1.11	1.09E+01	5.25E+01
		241.98	*	7.50	2.36E+03	1.46E+02
		258.79	*	0.55	3.18E+03	3.69E+02
		295.21	*	18.50	3.70E+03	2.41E+02
		351.92	*	35.80	4.11E+03	2.77E+02
		785.91	*	0.85	4.91E+03	6.47E+02
		839.03	*	0.63	-3.99E+02	2.53E+02
RN-219	0.994	130.59		0.12		
		271.23	*	10.80	9.15E+02	6.33E+01
		401.81	*	6.37	1.01E+03	6.95E+01
RA-223	0.997	122.32	*	1.19	3.39E+02	1.06E+02
		144.23	*	3.22	2.18E+03	1.37E+02
		154.21	*	5.62	8.40E+02	5.79E+01
		158.63		0.69		
		179.54		0.15		
		269.46	*	13.70	9.02E+02	5.88E+01
		288.18		0.16		
		323.87	*	3.93	2.86E+02	3.94E+01
		328.40		0.21		
		338.28	*	2.79	2.45E+02	4.42E+01
		342.90		0.22		
		346.80		0.18		
		371.68		0.48		
TH-227	0.993	50.13	*	8.00	1.64E+00	7.90E+00
		79.72		1.89		
		93.93	*	1.37	-8.54E+02	1.38E+02
		210.65	*	1.10	5.53E+02	1.79E+02
		235.97	*	12.70	-8.61E+02	8.65E+01
		256.25	*	7.01	8.51E+02	6.96E+01
		286.12	*	1.54	8.54E+02	8.77E+01
		300.00	*	2.67	1.62E+03	1.71E+02
		304.51	*	1.23	8.50E+02	2.66E+02
		329.85	*	2.69	2.97E+02	6.08E+01
		334.38	*	1.05	1.20E+02	2.55E+01
TH-228	0.722	84.37	*	1.23	2.71E+03	1.72E+02
		215.99		0.26		
PA-231	0.997	283.69	*	1.70	6.86E+02	6.14E+01
		300.07	*	2.46	1.75E+03	1.26E+02
		302.65	*	2.20	1.12E+03	1.58E+02
		330.06	*	1.40	5.70E+02	1.30E+02
TH-231	0.987	81.23	*	0.89	1.36E+03	1.12E+02
		84.21	*	6.60	5.05E+02	3.85E+01
		89.95	*	0.94	2.34E+02	2.67E+01
U-233	0.988	42.44		0.09		
		54.70		0.02		
		97.13	*	0.02	-7.88E+03	1.79E+03
U-235	0.711	109.16		1.54		
		143.76	*	10.96	6.40E+02	3.81E+01

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
U-235	0.711	163.36		5.08		
		185.71	*	57.20	2.52E+02	1.42E+01
		194.94		0.63		
		202.11		1.08		
		205.31		5.01		
NP-237	0.892	57.10		0.39		
		86.48	*	12.40	1.39E+02	1.00E+01
		94.64	*	0.60	-1.95E+03	7.05E+02
		143.25	*	0.43	1.63E+04	1.23E+03
AM-243	0.990	74.66	*	68.20	3.58E+01	2.07E+00

* = Energy line found in the spectrum.
- = Manually added nuclide.
? = Manually edited nuclide.
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 3/30/2016 2:02:27PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.20	4.80278E+00	1.18		
	2	36.40	5.63611E-01	10.77		
	6	67.77	3.99767E+00	1.97		
m	8	77.17	2.97040E+00	2.59		
	15	113.17	3.98722E-01	17.86	Tol.	TH-234
M	23	254.04	6.79630E-01	4.19		
m	28	274.76	4.80687E-01	5.35		
M	29	281.40	3.37814E-02	25.71	Sum	
	36	314.98	4.44236E-01	11.35		
M	42	387.06	3.12111E-01	6.60	D-Esc	
	47	445.26	2.08167E-01	16.22	Sum	
	48	455.11	-6.71251E-02	- 64.6	Sum	
	49	462.13	5.43334E-02	53.61	Tol.	AC-228
	50	470.10	1.87500E-02	140.53	Sum	
	51	480.73	-3.11667E-02	- 95.4	Sum	
	52	487.37	1.33778E-01	26.43	D-Esc	
	53	511.13	1.10648E+00	3.85	Sum	
	54	533.92	1.72431E-01	18.84	Sum	
	55	580.43	3.04611E-01	10.82	Sum	
	58	703.52	4.06111E-01	5.55	Sum	
	59	720.25	2.95153E-01	9.49	Tol.	SB-126
	60	742.93	9.94166E-02	29.13	D-Esc	
	64	821.73	2.82917E-02	64.82	Sum	

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	69	1052.48	1.53472E-01	9.82	Sum	
	70	1070.38	1.63694E-01	12.84	Sum	
	72	1134.28	-7.37236E-01	- 3.7	Sum	
	74	1182.47	8.41667E-02	18.16		
	77	1253.77	1.88889E-01	12.18	S-Esc	
M	84	1539.42	1.71916E-01	6.41	Sum	
m	85	1544.04	1.27530E-01	7.69	Sum	
M	87	1595.26	9.28543E-02	9.32	Sum	
m	88	1599.91	1.16279E-01	7.87	Sum	
	90	1684.70	5.10556E-02	16.42		
	91	1693.79	2.89167E-02	43.90	Tol.	PA-234
	94	1838.94	-1.04819E-01	- 11.7	Sum	
	96	1873.88	5.93472E-02	13.17	Sum	
	97	1896.60	4.42361E-02	18.96		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
I-126	0.88	388.63	*	34.10	7.43E+02	6.62E+01
BA-133	0.99	53.16	*	2.20	5.56E+00	2.68E+01
		79.62		2.62		
		81.00	*	34.06	3.59E+01	2.18E+00
		160.61		0.64		
		223.23		0.45		
		276.40		7.16		
		302.85	*	18.33	1.36E+02	9.53E+00
		356.02		62.05		
		383.85		8.94		
EU-152	0.97	121.78	*	28.42	1.43E+01	4.46E+00
		244.70		7.49		
		295.94	*	0.44	1.57E+05	1.05E+04
		344.28		26.58		
		411.12		2.23		
		443.98		3.09		
		688.67		0.83		
		778.90		12.96		
		867.39		4.15		

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
EU-152	0.97	964.13	*	14.50	9.24E+01	1.22E+01
		1005.28		0.65		
		1085.87		10.16		
		1089.70		1.71		
		1112.12		13.54		
		1212.95		1.40		
		1299.12		1.63		
		1408.01	*	20.87	4.35E+02	1.58E+01
GD-153	0.98	69.67		2.54		
		97.43	*	30.20	-6.11E+00	1.04E+00
		103.18		21.44		
PB-210	0.99	46.54	*	4.25	1.86E+02	3.46E+01
BI-211	0.85	351.06	*	12.91	1.14E+04	7.58E+02
PB-211	0.98	404.85	*	3.78	1.10E+03	7.82E+01
		427.09	*	1.76	1.32E+03	1.31E+02
		704.64		0.46		
		766.51		0.62		
		832.01	*	3.52	4.29E+02	5.24E+01
BI-214	0.95	609.31	*	44.80	3.81E+03	1.68E+02
		665.45	*	1.29	4.45E+03	2.04E+02
		768.36	*	4.80	4.00E+03	2.03E+02
		806.17	*	1.22	3.63E+03	2.52E+02
		934.06	*	3.03	3.80E+03	2.63E+02
		1120.29	*	14.80	3.91E+03	1.64E+02
		1155.19	*	1.64	3.96E+03	1.99E+02
		1207.68	*	0.49	2.96E+03	4.65E+02
		1238.11	*	5.86	3.85E+03	1.36E+02
		1280.96	*	1.44	4.05E+03	2.03E+02
		1377.67	*	3.92	4.04E+03	1.58E+02
		1385.31	*	0.89	3.60E+03	4.01E+02
		1401.50	*	1.55	3.29E+03	3.85E+02
		1407.98	*	2.80	3.22E+03	4.74E+02
		1415.80		0.48		
		1509.23	*	2.12	3.95E+03	1.84E+02
		1583.22	*	0.70	3.00E+03	2.65E+02
		1661.28	*	1.14	3.74E+03	2.20E+02
		1729.59	*	2.88	3.91E+03	1.68E+02
		1764.49	*	15.36	3.96E+03	1.41E+02
		1847.42	*	2.04	3.30E+03	1.57E+02
PB-214	0.99	53.23	*	1.11	1.09E+01	5.25E+01
		241.98	*	7.50	2.36E+03	1.46E+02
		258.79	*	0.55	3.18E+03	3.69E+02
		295.21	*	18.50	3.70E+03	2.41E+02
		351.92	*	35.80	4.11E+03	2.77E+02
		785.91	*	0.85	4.91E+03	6.47E+02
		839.03	*	0.63	-3.99E+02	2.53E+02
RN-219	0.99	130.59		0.12		
		271.23	*	10.80	9.15E+02	6.33E+01
		401.81	*	6.37	1.01E+03	6.95E+01
RA-223	0.99	122.32	*	1.19	3.39E+02	1.06E+02
		144.23	*	3.22	2.18E+03	1.37E+02
		154.21	*	5.62	8.40E+02	5.79E+01
		158.63		0.69		

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
RA-223	0.99	179.54		0.15		
		269.46	*	13.70	9.02E+02	5.88E+01
		288.18		0.16		
		323.87	*	3.93	2.86E+02	3.94E+01
		328.40		0.21		
		338.28	*	2.79	2.45E+02	4.42E+01
		342.90		0.22		
		346.80		0.18		
		371.68		0.48		
TH-227	0.99	50.13	*	8.00	1.64E+00	7.90E+00
		79.72		1.89		
		93.93	*	1.37	-8.54E+02	1.38E+02
		210.65	*	1.10	5.53E+02	1.79E+02
		235.97	*	12.70	-8.61E+02	8.65E+01
		256.25	*	7.01	8.51E+02	6.96E+01
		286.12	*	1.54	8.54E+02	8.77E+01
		300.00	*	2.67	1.62E+03	1.71E+02
		304.51	*	1.23	8.50E+02	2.66E+02
		329.85	*	2.69	2.97E+02	6.08E+01
		334.38	*	1.05	1.20E+02	2.55E+01
TH-228	0.72	84.37	*	1.23	2.71E+03	1.72E+02
		215.99		0.26		
PA-231	0.99	283.69	*	1.70	6.86E+02	6.14E+01
		300.07	*	2.46	1.75E+03	1.26E+02
		302.65	*	2.20	1.12E+03	1.58E+02
		330.06	*	1.40	5.70E+02	1.30E+02
TH-231	0.98	81.23	*	0.89	1.36E+03	1.12E+02
		84.21	*	6.60	5.05E+02	3.85E+01
		89.95	*	0.94	2.34E+02	2.67E+01
U-233	0.98	42.44		0.09		
		54.70		0.02		
		97.13	*	0.02	-7.88E+03	1.79E+03
U-235	0.71	109.16		1.54		
		143.76	*	10.96	6.40E+02	3.81E+01
		163.36		5.08		
		185.71	*	57.20	2.52E+02	1.42E+01
		194.94		0.63		
		202.11		1.08		
		205.31		5.01		
NP-237	0.89	57.10		0.39		
		86.48	*	12.40	1.39E+02	1.00E+01
		94.64	*	0.60	-1.95E+03	7.05E+02
		143.25	*	0.43	1.63E+04	1.23E+03
AM-243	0.99	74.66	*	68.20	3.58E+01	2.07E+00

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 1.000 sigma

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
X	CO-57	0.989			
X	NB-95m	0.302			
X	CD-109	0.928			
	I-126	0.881	7.43E+02	6.62E+01	
	BA-133	0.999	2.80E+01	2.19E+00	
	EU-152	0.979	2.91E-02	4.13E+00	
?	GD-153	0.986	-6.11E+00	1.04E+00	
X	EU-154	0.978			
X	EU-155	0.319			
	PB-210	0.997	1.86E+02	3.46E+01	
	BI-211	0.853	9.69E+03	7.63E+02	
	PB-211	0.984	7.04E+02	4.13E+01	
	BI-214	0.953	3.74E+03	3.65E+01	
	PB-214	0.996	6.19E+02	4.67E+01	
	RN-219	0.994	9.60E+02	4.68E+01	
	RA-223	0.997	5.00E+02	2.29E+01	
X	RA-226	0.994			
	TH-227	0.993	5.37E+01	7.22E+00	
	TH-228	0.722	1.43E+03	2.04E+02	
	PA-231	0.997	7.94E+02	3.56E+01	
	TH-231	0.987	2.38E+02	2.21E+01	
?	U-233	0.988	-7.88E+03	1.79E+03	
X	U-234	0.999			
	U-235	0.711	2.81E+02	1.32E+01	
	NP-237	0.892	1.39E+02	8.98E+00	
	AM-243	0.990	3.58E+01	2.07E+00	

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 3/30/2016 2:02:27PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	32.20	4.80278E+00	1.18		

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	2	36.40	5.63611E-01	10.77		
	6	67.77	3.99767E+00	1.97		
m	8	77.17	2.97040E+00	2.59		
	15	113.17	3.98722E-01	17.86	Tol.	TH-234
M	23	254.04	6.79630E-01	4.19		
m	28	274.76	4.80687E-01	5.35		
M	29	281.40	3.37814E-02	25.71	Sum	
	36	314.98	4.44236E-01	11.35		
M	42	387.06	3.12111E-01	6.60	D-Esc	
	47	445.26	2.08167E-01	16.22	Sum	
	48	455.11	-6.71251E-02	- 64.6	Sum	
	49	462.13	5.43334E-02	53.61	Tol.	AC-228
	50	470.10	1.87500E-02	140.53	Sum	
	51	480.73	-3.11667E-02	- 95.4	Sum	
	52	487.37	1.33778E-01	26.43	D-Esc	
	53	511.13	1.10648E+00	3.85	Sum	
	54	533.92	1.72431E-01	18.84	Sum	
	55	580.43	3.04611E-01	10.82	Sum	
	58	703.52	4.06111E-01	5.55	Sum	
	59	720.25	2.95153E-01	9.49	Tol.	SB-126
	60	742.93	9.94166E-02	29.13	D-Esc	
	64	821.73	2.82917E-02	64.82	Sum	
	69	1052.48	1.53472E-01	9.82	Sum	
	70	1070.38	1.63694E-01	12.84	Sum	
	72	1134.28	-7.37236E-01	- 3.7	Sum	
	74	1182.47	8.41667E-02	18.16		
	77	1253.77	1.88889E-01	12.18	S-Esc	
M	84	1539.42	1.71916E-01	6.41	Sum	
m	85	1544.04	1.27530E-01	7.69	Sum	
M	87	1595.26	9.28543E-02	9.32	Sum	
m	88	1599.91	1.16279E-01	7.87	Sum	
	90	1684.70	5.10556E-02	16.42		
	91	1693.79	2.89167E-02	43.90	Tol.	PA-234
	94	1838.94	-1.04819E-01	- 11.7	Sum	
	96	1873.88	5.93472E-02	13.17	Sum	
	97	1896.60	4.42361E-02	18.96		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BE-7	477.60		10.42	-9.22E+01	1.50E+02	1.50E+02
	NA-22	1274.53		99.94	-4.96E+01	8.99E+00	8.99E+00
@	NA-24	1368.63		100.00	1.00E+26	1.00E+26	1.00E+26
> @		2754.03		99.94	0.00E+00		0.00E+00
	K-40	1460.83		10.67	6.32E+00	8.58E+01	8.58E+01
@	AR-41	1293.59		99.10	1.00E+26	1.00E+26	1.00E+26
	CR-51	320.08		9.86	-5.68E+02	2.90E+02	2.90E+02
	MN-54	834.85		99.98	4.85E+01	1.14E+01	1.14E+01
	CO-56	846.77		99.93	-1.81E+01	2.13E+00	1.34E+01
		977.37		1.44	-1.89E+02		9.73E+02
		1037.84		13.99	-2.43E+01		9.61E+01
		1175.10		2.28	-3.26E+02		6.11E+02
		1238.28		67.56	5.44E+02		4.16E+01
		1360.21		4.33	-3.77E+01		3.16E+02
		1771.35		15.69	-1.90E+03		2.88E+02
		2015.18		3.08	0.00E+00		5.42E+00
		2034.76		7.89	0.00E+00		2.13E+00
@	MN-56	846.75		98.87	1.00E+26	1.00E+26	1.00E+26
@		1810.72		27.19	1.00E+26		1.00E+26
> @		2113.05		14.34	0.00E+00		0.00E+00
	CO-57	122.06	*	85.60	5.43E+00	7.69E+00	7.69E+00
		136.47		10.68	-3.14E+02		7.77E+01
		692.41		0.16	-3.92E+03		4.86E+03
	CO-58	810.78		99.45	-4.28E+01	1.64E+01	1.64E+01
		863.96		0.68	8.09E+02		2.22E+03
		1674.73		0.52	-1.21E+04		2.07E+03
	FE-59	142.65		1.02	1.63E+04	3.66E+01	1.94E+03
		192.35		3.08	-7.44E+03		5.96E+02
		1099.25		56.50	1.07E+01		3.66E+01
		1291.60		43.20	-2.19E+01		4.40E+01
	CO-60	1173.24		99.90	-5.39E+00	8.59E+00	8.70E+00
		1332.50		99.98	3.92E+00		8.59E+00
@	CU-64	1345.77		0.47	1.00E+26	1.00E+26	1.00E+26
	ZN-65	1115.55		50.60	-3.98E+02	5.42E+01	5.42E+01
	SE-75	66.05		1.12	4.25E+03	1.61E+01	7.44E+02
		96.73		3.42	7.64E+02		2.27E+02
		121.12		17.14	-1.39E+01		5.36E+01
		136.00		58.27	-3.02E+01		1.70E+01
		198.61		1.47	4.63E+02		7.36E+02
		264.66		58.50	-1.92E+02		1.61E+01
		279.54		24.79	-2.10E+01		4.11E+01
		303.93		1.31	-4.27E+04		8.85E+02
		400.66		11.37	5.32E+02		1.16E+02
	RB-83	520.39		44.70	-4.47E+01	2.35E+01	2.35E+01
		529.59		29.30	-2.23E+01		3.71E+01
		552.59		15.96	-6.98E+01		6.68E+01
@	BR-84	881.60		42.00	1.00E+26	1.00E+26	1.00E+26

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
@	BR-84	1897.60		14.90	1.00E+26	1.00E+26	1.00E+26
	KR-85	514.01		0.43	-6.67E+02	1.92E+03	1.92E+03
@	KR-85M	151.20		75.00	1.00E+26	1.00E+26	1.00E+26
@		304.87		14.00	1.00E+26		1.00E+26
	SR-85	514.01		95.70	-5.35E+00	1.54E+01	1.54E+01
@	SR-85m	151.19		12.90	1.00E+26	1.00E+26	1.00E+26
@		231.86		84.40	1.00E+26		1.00E+26
	RB-86	1077.00		8.64	-7.12E+02	7.49E+02	7.49E+02
@	KR-87	402.59		49.60	1.00E+26	1.00E+26	1.00E+26
@		673.83		1.89	1.00E+26		1.00E+26
@		845.44		7.30	1.00E+26		1.00E+26
@		1175.40		1.11	1.00E+26		1.00E+26
@		1740.52		2.04	1.00E+26		1.00E+26
@	KR-88	165.98		3.10	1.00E+26	1.00E+26	1.00E+26
@		196.30		26.00	1.00E+26		1.00E+26
@		362.23		2.25	1.00E+26		1.00E+26
@		834.83		13.00	1.00E+26		1.00E+26
@		985.78		1.52	1.00E+26		1.00E+26
@		1141.33		1.28	1.00E+26		1.00E+26
@		1179.51		1.00	1.00E+26		1.00E+26
@		1250.67		1.12	1.00E+26		1.00E+26
@		1369.50		1.48	1.00E+26		1.00E+26
@		1518.39		2.15	1.00E+26		1.00E+26
@		1529.77		10.90	1.00E+26		1.00E+26
@	RB-88	898.03		14.04	1.00E+26	1.00E+26	1.00E+26
@		1836.01		21.40	1.00E+26		1.00E+26
	Y-88	898.04		93.68	3.32E+00	1.04E+01	1.43E+01
		1836.06		99.24	-9.47E+00		1.04E+01
	NB-94x	702.62		97.90	-6.75E+00	8.07E+00	8.07E+00
		871.09		99.90	-1.69E+00		8.92E+00
	NB-95	765.81		99.81	-4.27E+00	4.08E+01	4.08E+01
	NB-95m	204.12		2.33	-1.28E+06	1.88E+06	1.35E+07
		235.69	*	24.80	-1.79E+07		1.88E+06
	ZR-95	724.20		44.17	-1.58E+00	2.48E+01	3.11E+01
		756.73		54.46	1.66E+00		2.48E+01
	NB-96	460.04		26.62	1.33E+18	9.40E+17	3.35E+18
		568.87		57.97	-1.83E+17		1.50E+18
		778.22		96.45	-2.97E+19		9.40E+17
		849.93		20.40	-7.02E+18		4.91E+18
		1200.23		19.96	-1.16E+19		5.01E+18
	MO-99	140.51		4.52	-2.69E+08	6.65E+07	1.85E+08
		181.06		6.08	-1.14E+09		1.43E+08
		366.42		1.20	-3.19E+08		6.36E+08
		739.50		12.13	-3.76E+07		6.65E+07
		777.92		4.28	-6.12E+09		1.94E+08
@	TC-99M	140.51		89.06	1.00E+26	1.00E+26	1.00E+26
	RU-103	443.80		3.27	-2.19E+02	2.01E+01	5.99E+02
		497.08		90.90	-2.23E+01		2.01E+01
		610.33		5.75	-7.45E+03		1.47E+03
	RHRU-106	621.93		9.93	-4.63E+01	7.13E+01	7.13E+01
		1050.41		1.56	9.82E+02		6.26E+02
	AG-108M	433.94		90.50	-6.11E+00	8.26E+00	8.26E+00

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
AG-108M	614.28		89.90	-8.96E+02	8.26E+00	3.16E+01
	722.94		90.90	-6.18E-01		8.30E+00
CD-109	88.03	*	3.61	5.17E+02	1.52E+02	1.52E+02
AG-110M	116.48		1.36	-3.83E+02	7.98E+00	5.56E+02
	446.81		3.72	-9.63E+01		2.30E+02
	620.36		2.79	-1.28E+04		2.72E+02
	657.76		94.00	-6.85E+01		7.98E+00
	677.62		10.28	-3.99E+01		7.30E+01
	687.02		6.39	8.12E+01		1.23E+02
	706.68		16.32	-5.39E+01		5.68E+01
	744.28		4.70	2.22E+02		1.81E+02
	763.94		22.14	-1.77E+01		6.34E+01
	818.03		7.29	-5.72E+01		1.28E+02
	884.68		72.19	4.15E+00		1.47E+01
	937.49		34.13	3.94E+02		4.45E+01
	1384.30		24.12	-1.53E+01		7.18E+01
	1475.79		3.97	4.19E+01		2.77E+02
	1505.04		12.95	-1.58E+02		1.30E+02
	1562.30		1.02	-9.96E+01		1.02E+03
SN-113	255.06		1.82	5.34E+03	1.66E+01	6.56E+02
	391.69		64.00	-6.75E+00		1.66E+01
IN-114	190.27		15.40	-9.31E+02	1.14E+02	1.14E+02
	558.43		4.40	6.99E+01		3.43E+02
	725.24		4.40	-4.95E+01		3.60E+02
SB-122	564.24		69.30	-2.39E+06	1.46E+07	1.46E+07
I-124	602.72		60.50	-1.79E+05	1.14E+05	1.14E+05
	722.78		9.98	1.51E+06		7.19E+05
	1509.49		2.99	2.66E+07		4.61E+06
	1691.02		10.40	1.31E+06		6.93E+05
SB-124	602.73		97.80	-2.20E+01	1.40E+01	1.40E+01
	645.85		7.38	2.61E+01		1.65E+02
	709.32		1.35	-1.89E+03		1.02E+03
	713.78		2.27	-1.88E+03		5.73E+02
	722.79		10.76	2.78E+02		1.32E+02
	968.20		1.89	-6.70E+02		9.30E+02
	1045.13		1.84	-9.73E+02		8.36E+02
	1325.51		1.62	-7.90E+02		9.51E+02
	1355.18		1.04	-7.70E+01		1.51E+03
	1368.16		2.62	-6.29E+02		6.09E+02
	1436.56		1.23	-1.01E+03		1.33E+03
	1690.98		47.30	5.72E+01		3.03E+01
I-125	30.98		20.10	-2.98E+02	9.24E+01	9.24E+01
	35.49		6.68	1.71E+03		2.52E+02
SB-125	176.31		6.82	-1.06E+02	2.98E+01	1.15E+02
	380.45		1.52	-5.55E+02		4.78E+02
	427.88		29.60	-5.48E+00		2.98E+01
	463.36		10.49	-4.40E+01		7.11E+01
	600.60		17.86	-8.40E+01		4.16E+01
	606.72		5.03	-7.95E+01		6.56E+02
	635.95		11.31	3.69E+01		6.07E+01
	671.45		1.80	-2.38E+03		3.85E+02
@ XE-125	188.42		54.00	1.00E+26	1.00E+26	1.00E+26

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
@	XE-125	243.38		30.10	1.00E+26	1.00E+26	1.00E+26
+	I-126	388.63	*	34.10	7.43E+02	3.01E+02	3.01E+02
	SB-126	414.80		83.30	-4.98E+02	1.46E+02	2.10E+02
		666.30		99.60	1.26E+03		1.91E+02
		695.00		99.60	-3.84E+02		1.46E+02
		697.00		28.90	-1.55E+03		5.05E+02
		720.50		53.80	-8.07E+01		3.04E+02
		856.70		17.60	-1.50E+02		1.06E+03
	I-129	39.58		7.45	-1.76E+02	9.04E+01	9.04E+01
@	I-130	418.01		34.15	1.00E+26	1.00E+26	1.00E+26
@		536.09		99.00	1.00E+26		1.00E+26
@		668.54		96.10	1.00E+26		1.00E+26
@		739.48		82.30	1.00E+26		1.00E+26
@		1157.47		11.30	1.00E+26		1.00E+26
	I-131	284.30		6.14	6.81E+04	9.83E+02	1.55E+04
		364.49		81.70	-3.91E+02		9.83E+02
		636.99		7.17	4.32E+03		1.09E+04
		722.91		1.77	-3.76E+03		5.04E+04
	XE-131M	163.93		1.91	-4.90E+03	1.02E+04	1.02E+04
	TE-132	111.76		1.74	6.29E+07	1.31E+06	4.85E+07
		116.30		1.96	-3.58E+07		5.19E+07
		228.16		88.00	-3.77E+06		1.31E+06
+	BA-133	53.16	*	2.20	5.56E+00	1.44E+01	1.43E+02
		79.62		2.62	-4.58E+02		2.52E+02
		81.00	*	34.06	3.59E+01		1.44E+01
		160.61		0.64	-3.43E+03		1.23E+03
		223.23		0.45	2.60E+02		1.66E+03
		276.40		7.16	-5.28E+01		1.10E+02
		302.85	*	18.33	1.36E+02		3.00E+01
		356.02		62.05	-2.17E+02		2.54E+01
		383.85		8.94	-3.63E+01		8.16E+01
	I-133	529.87		87.00	-7.37E+19	1.23E+20	1.23E+20
		875.33		4.51	9.78E+20		3.07E+21
	CS-134	475.35		1.47	-3.83E+02	9.34E+00	4.97E+02
		563.23		8.38	2.79E+01		8.84E+01
		569.32		15.43	9.86E+00		4.86E+01
		604.70		97.56	-9.09E+00		1.76E+01
		795.84		85.44	-5.92E+01		9.34E+00
		801.93		8.73	-2.16E+02		1.10E+02
		1038.57		1.00	-2.19E+02		8.61E+02
		1167.94		1.80	-1.36E+03		4.91E+02
		1365.15		3.04	-3.26E+01		2.90E+02
@	I-134	405.45		7.35	1.00E+26	1.00E+26	1.00E+26
@		540.83		7.60	1.00E+26		1.00E+26
@		595.36		11.20	1.00E+26		1.00E+26
@		621.79		10.60	1.00E+26		1.00E+26
@		677.34		7.80	1.00E+26		1.00E+26
@		847.03		95.40	1.00E+26		1.00E+26
@		884.09		64.90	1.00E+26		1.00E+26
@		1072.55		15.00	1.00E+26		1.00E+26
@		1136.16		9.20	1.00E+26		1.00E+26
	CS-135	787.20		100.00	4.30E+01	8.52E+00	9.22E+00

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CS-135	846.10	95.90	-1.14E+01	8.52E+00	8.52E+00
@	I-135	417.63	3.55	1.00E+26	1.00E+26	1.00E+26
@		546.56	7.20	1.00E+26		1.00E+26
@		836.80	6.73	1.00E+26		1.00E+26
@		1038.76	8.00	1.00E+26		1.00E+26
@		1124.00	3.64	1.00E+26		1.00E+26
@		1131.51	22.74	1.00E+26		1.00E+26
@		1260.41	28.90	1.00E+26		1.00E+26
@		1457.56	8.73	1.00E+26		1.00E+26
@		1678.03	9.62	1.00E+26		1.00E+26
@		1706.46	4.13	1.00E+26		1.00E+26
@		1791.20	7.77	1.00E+26		1.00E+26
@	XE-135	249.79	90.20	1.00E+26	1.00E+26	1.00E+26
@		608.18	2.90	1.00E+26		1.00E+26
@	XE-135M	526.56	80.50	1.00E+26	1.00E+26	1.00E+26
	CS-136	66.88	4.80	3.17E+04	1.47E+02	2.53E+03
		86.36	5.20	1.64E+04		2.33E+03
		153.25	5.77	1.48E+04		2.67E+03
		163.92	3.40	-1.99E+03		4.16E+03
		176.60	10.00	-1.24E+03		1.39E+03
		273.65	11.10	1.76E+04		1.70E+03
		340.55	42.30	-1.11E+02		3.44E+02
		818.51	100.00	-3.20E+01		1.47E+02
		1048.07	80.00	-2.09E+02		1.99E+02
		1235.36	20.10	-4.87E+03		1.56E+03
	CS-137	661.66	85.10	-4.46E+01	9.70E+00	9.70E+00
@	CS-138	138.10	1.49	1.00E+26	1.00E+26	1.00E+26
@		227.76	1.51	1.00E+26		1.00E+26
@		408.98	4.66	1.00E+26		1.00E+26
@		462.80	30.70	1.00E+26		1.00E+26
@		547.00	10.76	1.00E+26		1.00E+26
@		871.80	5.11	1.00E+26		1.00E+26
@		1009.78	29.80	1.00E+26		1.00E+26
@		1147.22	1.24	1.00E+26		1.00E+26
@		1343.59	1.14	1.00E+26		1.00E+26
@		1435.86	76.30	1.00E+26		1.00E+26
	LA-138	788.74	33.60	1.32E+02	1.30E+01	2.75E+01
		1435.80	66.40	-1.14E+01		1.30E+01
@	BA-139	165.86	23.60	1.00E+26	1.00E+26	1.00E+26
	CE-139	165.85	79.90	-7.39E+00	1.27E+01	1.27E+01
	BA-140	162.66	6.21	-5.71E+03	5.93E+02	2.51E+03
		304.85	4.30	-1.73E+03		3.66E+03
		423.72	3.10	-4.73E+03		5.55E+03
		437.58	1.93	-1.46E+04		7.58E+03
		537.26	24.39	-2.11E+02		5.93E+02
	LA-140	328.76	20.32	2.91E+11	8.33E+10	3.11E+11
		432.49	2.90	-1.41E+12		2.06E+12
		487.02	45.50	4.84E+10		1.30E+11
		751.64	4.33	7.02E+11		1.34E+12
		815.77	23.30	-1.30E+12		2.65E+11
		867.85	5.50	-2.73E+11		1.27E+12
		919.55	2.66	-3.29E+12		2.59E+12

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LA-140	925.19		6.90	-1.43E+13	8.33E+10	9.88E+11
		1596.21		95.40	-2.00E+10		8.33E+10
	CE-141	145.44		48.20	-1.02E+02	5.69E+01	5.69E+01
	CE-144	80.12		1.36	-4.91E+03	7.29E+01	5.13E+02
		133.51		11.09	-1.39E+01		7.29E+01
	PM-144	476.78		41.98	-1.41E+01	7.36E+00	1.88E+01
		618.01		98.59	-1.65E+03		7.36E+00
		694.00		0.55	-2.52E+03		1.35E+03
		696.49		99.49	-2.49E+01		7.54E+00
		778.57		1.51	-1.56E+04		5.41E+02
		814.14		0.55	-7.75E+03		1.55E+03
	PM-146	146.20		0.22	-1.30E+04	1.12E+01	3.92E+03
		453.88		66.00	-2.61E+00		1.12E+01
		589.80		0.43	-1.59E+03		1.64E+03
		633.25		1.12	9.09E+01		5.95E+02
		735.93		22.80	-2.10E+01		3.04E+01
		747.24		17.71	-1.03E+01		4.12E+01
	ND-147	91.11		27.90	-5.05E+03	6.31E+02	6.31E+02
		319.41		1.95	-2.35E+04		1.17E+04
		398.15		0.87	-2.14E+04		2.94E+04
		439.89		1.20	-2.12E+04		1.96E+04
		531.02		13.09	-8.40E+02		1.77E+03
+	EU-152	121.78	*	28.42	1.43E+01	2.03E+01	2.03E+01
		244.70		7.49	-2.87E+02		1.49E+02
		295.94	*	0.44	1.57E+05		1.29E+03
		344.28		26.58	-2.90E+02		2.78E+01
		411.12		2.23	-1.66E+03		3.64E+02
		443.98		3.09	-6.49E+01		2.40E+02
		688.67		0.83	2.13E+02		8.12E+02
		778.90		12.96	-1.29E+03		5.73E+01
		867.39		4.15	-3.81E+01		2.15E+02
		964.13	*	14.50	9.24E+01		4.75E+01
		1005.28		0.65	5.78E+02		1.33E+03
		1085.87		10.16	-5.19E+00		8.28E+01
		1089.70		1.71	-7.15E+01		4.93E+02
		1112.12		13.54	-1.97E+03		6.50E+01
		1212.95		1.40	1.81E+01		6.60E+02
		1299.12		1.63	-7.46E+00		5.05E+02
		1408.01	*	20.87	4.35E+02		2.91E+01
+	GD-153	69.67		2.54	-6.86E+02	1.73E+01	2.94E+02
		97.43	*	30.20	-6.11E+00		1.73E+01
		103.18		21.44	-2.38E+01		2.80E+01
	EU-154	123.07	*	40.78	1.00E+01	1.42E+01	1.42E+01
		247.93		6.95	-1.34E+03		1.04E+02
		444.49	*	0.56	1.39E+03		1.02E+03
		582.10		0.89	1.66E+03		8.68E+02
		591.76		4.99	-1.05E+02		1.41E+02
		692.42		1.80	-3.01E+02		3.72E+02
		723.30		20.22	-2.81E+00		3.78E+01
		756.80		4.57	1.10E+01		1.64E+02
		815.53		0.52	-7.48E+03		1.51E+03
		845.39		0.59	-1.68E+03		1.43E+03

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	EU-154	873.19		12.27	5.44E-01	1.42E+01	7.38E+01
		892.78		0.52	-5.25E+01		1.80E+03
		904.08		0.90	-1.27E+02		1.06E+03
		996.26		10.59	-2.20E+01		8.15E+01
		1004.72		18.00	2.70E+01		4.84E+01
		1246.15		0.87	-7.43E+03		1.13E+03
		1274.44		35.19	-1.37E+02		2.48E+01
		1494.05		0.70	-1.73E+02		1.49E+03
		1596.49		1.80	8.69E+02		5.66E+02
	EU-155	45.30		1.32	8.46E+02	1.68E+01	4.74E+02
		60.01		1.13	-4.22E+02		4.63E+02
		86.54	*	30.70	5.73E+01		1.68E+01
		105.31		21.15	-2.35E+01		2.48E+01
	W-187	72.00		11.10	-8.84E+18	1.63E+18	3.16E+18
		134.25		8.80	-9.19E+17		5.38E+18
		479.55		21.80	-1.14E+18		2.30E+18
		618.26		6.28	-1.55E+21		6.93E+18
		625.52		1.09	-3.71E+19		3.90E+19
		685.73		27.30	9.90E+17		1.63E+18
		772.89		4.12	-1.55E+20		2.16E+19
	IR-192	295.96		28.66	3.76E+03	1.47E+01	9.74E+01
		308.46		30.00	-7.53E+01		3.96E+01
		316.51		82.81	-1.75E+01		1.47E+01
		468.07		47.83	-1.15E+01		2.47E+01
		588.58		4.51	-2.27E+02		2.59E+02
		604.41		8.23	-1.72E+02		3.33E+02
		612.47		5.31	-1.78E+04		1.01E+03
	TL-201	135.34		2.56	-6.05E+07	2.27E+07	8.29E+07
		167.43		10.00	-1.76E+07		2.27E+07
	HG-203	279.20		81.46	-1.05E+01	2.07E+01	2.07E+01
	TL-208	277.36		6.31	-5.95E+01	9.02E+00	1.21E+02
		510.77		22.60	2.03E+02		3.66E+01
		583.19		84.50	-6.58E-01		9.02E+00
		763.13		1.81	-3.11E+02		4.86E+02
		860.56		12.42	2.00E+01		7.05E+01
+	PB-210	46.54	*	4.25	1.86E+02	1.33E+02	1.33E+02
+	BI-211	351.06	*	12.91	1.14E+04	6.80E+01	6.80E+01
+	PB-211	404.85	*	3.78	1.10E+03	1.53E+02	1.53E+02
		427.09	*	1.76	1.32E+03		4.25E+02
		704.64		0.46	5.32E+03		1.72E+03
		766.51		0.62	-1.37E+02		2.20E+03
		832.01	*	3.52	4.29E+02		2.04E+02
	BI-212	727.33		6.58	-3.01E+01	1.05E+02	1.05E+02
		785.37		1.10	3.83E+03		8.37E+02
		1078.62		0.56	-1.90E+03		1.44E+03
		1620.50		1.49	-7.60E+01		5.34E+02
	PB-212	115.18		0.59	-1.65E+02	2.33E+01	9.16E+02
		238.63		43.30	9.46E+01		2.33E+01
		300.09		3.28	-1.27E+04		2.73E+02
+	BI-214	609.31	*	44.80	3.81E+03	1.64E+01	1.64E+01
		665.45	*	1.29	4.45E+03		3.39E+02
		768.36	*	4.80	4.00E+03		1.56E+02

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BI-214	806.17	*	1.22	3.63E+03	1.64E+01	5.46E+02
		934.06	*	3.03	3.80E+03		2.30E+02
		1120.29	*	14.80	3.91E+03		5.34E+01
		1155.19	*	1.64	3.96E+03		4.13E+02
		1207.68	*	0.49	2.96E+03		1.51E+03
		1238.11	*	5.86	3.85E+03		1.24E+02
		1280.96	*	1.44	4.05E+03		5.26E+02
		1377.67	*	3.92	4.04E+03		1.55E+02
		1385.31	*	0.89	3.60E+03		6.88E+02
		1401.50	*	1.55	3.29E+03		3.89E+02
		1407.98	*	2.80	3.22E+03		2.15E+02
		1415.80		0.48	-2.04E+04		1.97E+03
		1509.23	*	2.12	3.95E+03		4.14E+02
		1583.22	*	0.70	3.00E+03		1.00E+03
		1661.28	*	1.14	3.74E+03		5.76E+02
		1729.59	*	2.88	3.91E+03		1.92E+02
		1764.49	*	15.36	3.96E+03		3.35E+01
		1847.42	*	2.04	3.30E+03		2.80E+02
+	PB-214	53.23	*	1.11	1.09E+01	2.45E+01	2.80E+02
		241.98	*	7.50	2.36E+03		1.10E+02
		258.79	*	0.55	3.18E+03		1.01E+03
		295.21	*	18.50	3.70E+03		3.04E+01
		351.92	*	35.80	4.11E+03		2.45E+01
		785.91	*	0.85	4.91E+03		5.93E+02
		839.03	*	0.63	-3.99E+02		1.19E+03
+	RN-219	130.59		0.12	-1.44E+03	5.05E+01	5.81E+03
		271.23	*	10.80	9.15E+02		5.05E+01
		401.81	*	6.37	1.01E+03		9.03E+01
	RN-220	549.73		0.11	-1.94E+03	6.28E+03	6.28E+03
+	RA-223	122.32	*	1.19	3.39E+02	3.98E+01	4.81E+02
		144.23	*	3.22	2.18E+03		2.22E+02
		154.21	*	5.62	8.40E+02		1.33E+02
		158.63		0.69	-2.38E+03		1.14E+03
		179.54		0.15	-6.02E+04		5.10E+03
		269.46	*	13.70	9.02E+02		3.98E+01
		288.18		0.16	-1.09E+05		4.81E+03
		323.87	*	3.93	2.86E+02		1.56E+02
		328.40		0.21	1.09E+04		3.90E+03
		338.28	*	2.79	2.45E+02		1.98E+02
		342.90		0.22	-3.46E+04		3.41E+03
		346.80		0.18	-3.11E+04		4.16E+03
		371.68		0.48	4.83E+02		1.44E+03
	RA-224	240.99		3.97	4.84E+03	2.85E+02	2.85E+02
	RA-226	186.10	*	3.50	4.12E+03	2.01E+02	2.01E+02
+	TH-227	50.13	*	8.00	1.64E+00	4.05E+01	4.05E+01
		79.72		1.89	-6.29E+02		3.46E+02
		93.93	*	1.37	-8.54E+02		3.43E+02
		210.65	*	1.10	5.53E+02		6.55E+02
		235.97	*	12.70	-8.61E+02		9.03E+01
		256.25	*	7.01	8.51E+02		7.95E+01
		286.12	*	1.54	8.54E+02		3.36E+02
		300.00	*	2.67	1.62E+03		2.06E+02

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	TH-227	304.51	*	1.23	8.50E+02	4.05E+01	4.37E+02
		329.85	*	2.69	2.97E+02		2.04E+02
		334.38	*	1.05	1.20E+02		5.09E+02
	AC-228	99.50		1.28	-2.77E+02	3.51E+01	4.13E+02
		129.07		2.45	-1.71E+02		2.82E+02
		153.98		0.74	6.65E+03		1.14E+03
		209.25		3.88	-1.33E+02		1.98E+02
		270.24		3.43	-6.56E+02		3.25E+02
		327.90		3.06	1.55E+03		2.77E+02
		332.37		0.40	1.23E+03		2.06E+03
		338.32		11.25	-5.37E+00		7.05E+01
		409.46		1.94	-1.34E+03		4.57E+02
		463.01		4.44	-1.00E+02		1.62E+02
		508.96		0.47	-5.34E+02		1.75E+03
		562.50		0.87	2.17E+02		8.06E+02
		755.32		1.00	4.45E+02		7.44E+02
		772.29		1.50	-5.23E+03		9.10E+02
		782.14		0.50	-6.60E+03		1.78E+03
		794.95		4.34	-9.60E+02		1.74E+02
		830.49		0.55	-2.06E+03		1.72E+03
		835.71		1.68	2.94E+03		6.06E+02
		840.38		0.94	-1.57E+03		9.54E+02
		904.20		0.78	-1.45E+02		1.21E+03
		911.21		26.60	2.10E+01		3.51E+01
		964.77		5.11	3.15E+02		1.82E+02
		968.97		16.20	-4.67E+01		5.73E+01
		1247.08		0.50	-1.28E+04		1.69E+03
		1459.14		0.80	2.23E+01		1.14E+03
		1495.91		0.89	-1.00E+02		1.16E+03
		1580.54		0.61	-2.95E+03		1.71E+03
		1588.21		3.27	-7.38E+01		3.25E+02
		1630.63		1.60	9.60E+01		4.68E+02
+	TH-228	84.37	*	1.23	2.71E+03	3.88E+02	3.88E+02
		215.99		0.26	-1.59E+03		2.83E+03
	TH-229	75.09		0.61	1.22E+04	1.69E+02	1.18E+03
		86.35		3.90	1.19E+03		1.69E+02
		124.60		1.43	-1.22E+02		4.77E+02
		136.99		1.18	-2.31E+03		6.12E+02
		148.15		0.88	-4.38E+03		8.74E+02
		154.34		0.77	6.40E+03		1.09E+03
		156.41		1.19	-5.44E+02		7.13E+02
		193.51		4.41	-2.10E+03		1.77E+02
		204.69		0.60	-2.79E+02		1.29E+03
		210.85		2.77	-9.29E+01		2.77E+02
+	PA-231	283.69	*	1.70	6.86E+02	2.24E+02	3.05E+02
		300.07	*	2.46	1.75E+03		2.24E+02
		302.65	*	2.20	1.12E+03		2.47E+02
		330.06	*	1.40	5.70E+02		3.93E+02
+	TH-231	81.23	*	0.89	1.36E+03	7.24E+01	5.46E+02
		84.21	*	6.60	5.05E+02		7.24E+01
		89.95	*	0.94	2.34E+02		4.91E+02
	TH-232	63.81		0.27	-7.45E+03	1.93E+03	1.93E+03

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	U-232	57.78		0.20	-3.12E+03	2.56E+03	2.56E+03
		129.08		0.07	-6.09E+03		1.00E+04
	PA-233	75.35		1.39	5.33E+03	1.87E+01	5.18E+02
		86.81		1.97	6.59E+02		3.17E+02
		103.97		0.87	-5.89E+02		5.89E+02
		271.48		0.33	7.05E+04		3.43E+03
		300.34		6.62	-6.32E+03		1.35E+02
		312.17		38.60	-1.38E+01		1.87E+01
		340.81		4.47	-5.73E+01		1.77E+02
		375.45		0.68	6.58E+02		1.03E+03
		398.62		1.39	-2.57E+02		6.03E+02
		415.76		1.75	-5.35E+01		4.66E+02
+	U-233	42.44		0.09	-2.34E+04	7.15E+03	7.15E+03
		54.70		0.02	-1.65E+04		2.92E+04
		97.13	*	0.02	-7.88E+03		2.23E+04
	PA-234	62.70		1.55	-1.84E+03	3.89E+01	3.35E+02
		99.86		3.19	-1.84E+02		1.65E+02
		125.46		0.78	-2.53E+02		8.78E+02
		131.30		18.00	1.67E+00		3.89E+01
		140.50		0.81	-1.33E+03		9.18E+02
		152.71		5.97	5.72E+02		1.41E+02
		159.48		0.65	-2.89E+03		1.21E+03
		170.85		0.50	-3.57E+02		1.52E+03
		186.15		1.76	8.14E+03		5.52E+02
		193.73		0.49	-1.81E+04		1.60E+03
		200.97		0.90	3.43E+02		8.68E+02
		203.12		1.23	1.14E+01		6.34E+02
		227.00		9.99	-3.18E+01		7.37E+01
		245.37		0.75	-4.29E+03		1.39E+03
		249.22		2.47	-5.46E+03		2.88E+02
		272.28		1.08	2.27E+04		1.05E+03
		293.79		2.99	-4.70E+03		5.53E+02
		330.40		0.77	-8.71E+02		1.04E+03
		369.50		2.47	2.66E+01		2.79E+02
		372.00		1.21	2.21E+02		5.74E+02
		458.68		1.13	1.31E+03		6.59E+02
		506.75		1.29	-5.80E+02		5.87E+02
		513.40		1.10	-8.66E+01		7.52E+02
		521.40		0.74	-1.94E+03		9.13E+02
		565.20		1.03	-1.25E+02		6.81E+02
		569.32		11.80	1.23E+01		6.04E+01
		602.60		0.54	-2.11E+03		1.34E+03
		663.90		0.54	-4.48E+03		1.64E+03
		666.50		1.16	4.88E+03		7.58E+02
		669.70		0.99	-3.00E+03		8.84E+02
		692.60		1.24	-4.32E+02		5.34E+02
		699.03		3.61	-4.14E+02		2.02E+02
		705.90		2.27	-3.39E+02		3.48E+02
		730.90		0.63	1.22E+02		1.09E+03
		733.39		6.90	-7.58E+01		9.87E+01
		738.00		1.15	-3.63E+02		6.05E+02
		742.81		2.06	-6.02E+01		3.53E+02

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PA-234	755.00		1.22	3.39E+02	3.89E+01	6.10E+02
		780.40		0.90	-4.67E+03		8.46E+02
		786.27		1.19	3.55E+03		7.74E+02
		794.90		1.34	-3.11E+03		5.62E+02
		796.10		2.58	-1.86E+03		2.94E+02
		805.52		3.14	-1.97E+02		3.04E+02
		819.20		1.88	-3.20E+01		4.26E+02
		824.65		3.12	-4.90E+02		2.63E+02
		831.50		4.12	-1.99E+02		2.30E+02
		876.00		2.52	1.53E+02		3.60E+02
		880.50		10.40	9.48E+00		8.73E+01
		883.24		9.58	3.04E+01		9.52E+01
		898.67		3.24	9.86E+01		2.90E+02
		926.00		16.80	-8.05E+02		5.18E+01
		946.18		15.00	-9.17E+01		5.76E+01
		980.48		5.15	-4.05E+01		1.66E+02
		984.20		1.62	1.00E+02		5.26E+02
		1028.70		0.57	1.02E+03		1.49E+03
		1083.20		0.50	-2.59E+02		1.67E+03
		1352.90		1.15	-1.86E+02		7.18E+02
		1393.90		2.06	-3.43E+03		4.18E+02
		1668.40		0.76	-2.11E+03		1.20E+03
		1693.80		0.69	4.66E+01		1.02E+03
	PA-234M	766.36		0.29	-2.89E+02	1.04E+03	4.64E+03
		811.00		0.51	-4.86E+03		1.86E+03
		1001.03		0.84	9.12E+02		1.04E+03
	TH-234	63.29		4.84	-5.03E+02	9.81E+01	1.07E+02
		83.30		0.08	2.26E+04		8.57E+03
		92.59		5.58	-3.11E+02		9.81E+01
		112.81		0.28	2.05E+03		1.92E+03
	U-234	53.20	*	0.12	9.84E+01	2.52E+03	2.52E+03
		120.90		0.03	-6.41E+03		1.96E+04
+	U-235	109.16		1.54	-1.14E+02	1.23E+01	3.39E+02
		143.76	*	10.96	6.40E+02		6.52E+01
		163.36		5.08	-1.48E+02		1.52E+02
		185.71	*	57.20	2.52E+02		1.23E+01
		194.94		0.63	-6.96E+03		1.24E+03
		202.11		1.08	3.78E+02		7.23E+02
		205.31		5.01	-8.03E+01		1.54E+02
+	NP-237	57.10		0.39	-1.80E+03	4.08E+01	1.32E+03
		86.48	*	12.40	1.39E+02		4.08E+01
		94.64	*	0.60	-1.95E+03		7.83E+02
		143.25	*	0.43	1.63E+04		1.66E+03
	NP-239	106.12		27.20	-2.66E+08	2.16E+08	2.16E+08
		209.75		3.42	-1.57E+09		2.58E+09
		228.18		10.76	-2.26E+09		7.85E+08
		277.60		14.38	-3.00E+08		6.09E+08
		334.31		2.07	-7.28E+09		4.30E+09
	AM-241	59.54		35.90	-1.07E+01	1.43E+01	1.43E+01
	CM-241	132.41		3.90	-6.01E+01	3.21E+01	5.80E+02
		165.01		3.40	-4.03E+02		7.27E+02
		205.88		2.67	-5.16E+02		9.25E+02

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CM-241	430.63		4.06	-1.33E+02	3.21E+01	6.52E+02
		463.27		1.23	-1.16E+03		1.87E+03
		471.80		71.30	7.19E-01		3.21E+01
		636.88		1.53	6.69E+02		1.39E+03
+	AM-243	74.66	*	68.20	3.58E+01	7.43E+00	7.43E+00

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.60		10.42	1.50E+02	1.50E+02	-9.22E+01	7.49E+01
	NA-22	1274.53		99.94	8.99E+00	8.99E+00	-4.96E+01	4.46E+00
@	NA-24	1368.63		100.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
>@		2754.03		99.94	0.00E+00		0.00E+00	0.00E+00
	K-40	1460.83		10.67	8.58E+01	8.58E+01	6.32E+00	4.25E+01
@	AR-41	1293.59		99.10	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	CR-51	320.08		9.86	2.90E+02	2.90E+02	-5.68E+02	1.44E+02
	MN-54	834.85		99.98	1.14E+01	1.14E+01	4.85E+01	5.65E+00
	CO-56	846.77		99.93	1.34E+01	2.13E+00	-1.81E+01	6.64E+00
		977.37		1.44	9.73E+02		-1.89E+02	4.83E+02
		1037.84		13.99	9.61E+01		-2.43E+01	4.77E+01
		1175.10		2.28	6.11E+02		-3.26E+02	3.03E+02
		1238.28		67.56	4.16E+01		5.44E+02	2.07E+01
		1360.21		4.33	3.16E+02		-3.77E+01	1.56E+02
		1771.35		15.69	2.88E+02		-1.90E+03	1.43E+02
		2015.18		3.08	5.42E+00		0.00E+00	0.00E+00
		2034.76		7.89	2.13E+00		0.00E+00	0.00E+00
@	MN-56	846.75		98.87	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		1810.72		27.19	1.00E+26		1.00E+26	1.00E+20
>@		2113.05		14.34	0.00E+00		0.00E+00	0.00E+00
	CO-57	122.06	*	85.60	7.69E+00	7.69E+00	5.43E+00	3.84E+00
		136.47		10.68	7.77E+01		-3.14E+02	3.88E+01
		692.41		0.16	4.86E+03		-3.92E+03	2.41E+03
	CO-58	810.78		99.45	1.64E+01	1.64E+01	-4.28E+01	8.15E+00
		863.96		0.68	2.22E+03		8.09E+02	1.10E+03
		1674.73		0.52	2.07E+03		-1.21E+04	1.02E+03
	FE-59	142.65		1.02	1.94E+03	3.66E+01	1.63E+04	9.69E+02
		192.35		3.08	5.96E+02		-7.44E+03	2.97E+02
		1099.25		56.50	3.66E+01		1.07E+01	1.82E+01
		1291.60		43.20	4.40E+01		-2.19E+01	2.18E+01

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	CO-60	1173.24		99.90	8.70E+00	8.59E+00	-5.39E+00	4.32E+00
		1332.50		99.98	8.59E+00		3.92E+00	4.26E+00
@	CU-64	1345.77		0.47	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	ZN-65	1115.55		50.60	5.42E+01	5.42E+01	-3.98E+02	2.70E+01
	SE-75	66.05		1.12	7.44E+02	1.61E+01	4.25E+03	3.71E+02
		96.73		3.42	2.27E+02		7.64E+02	1.13E+02
		121.12		17.14	5.36E+01		-1.39E+01	2.67E+01
		136.00		58.27	1.70E+01		-3.02E+01	8.46E+00
		198.61		1.47	7.36E+02		4.63E+02	3.67E+02
		264.66		58.50	1.61E+01		-1.92E+02	8.05E+00
		279.54		24.79	4.11E+01		-2.10E+01	2.05E+01
		303.93		1.31	8.85E+02		-4.27E+04	4.41E+02
		400.66		11.37	1.16E+02		5.32E+02	5.77E+01
	RB-83	520.39		44.70	2.35E+01	2.35E+01	-4.47E+01	1.17E+01
		529.59		29.30	3.71E+01		-2.23E+01	1.84E+01
		552.59		15.96	6.68E+01		-6.98E+01	3.32E+01
@	BR-84	881.60		42.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		1897.60		14.90	1.00E+26		1.00E+26	1.00E+20
	KR-85	514.01		0.43	1.92E+03	1.92E+03	-6.67E+02	9.57E+02
@	KR-85M	151.20		75.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		304.87		14.00	1.00E+26		1.00E+26	1.00E+20
	SR-85	514.01		95.70	1.54E+01	1.54E+01	-5.35E+00	7.68E+00
@	SR-85m	151.19		12.90	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		231.86		84.40	1.00E+26		1.00E+26	1.00E+20
	RB-86	1077.00		8.64	7.49E+02	7.49E+02	-7.12E+02	3.72E+02
@	KR-87	402.59		49.60	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		673.83		1.89	1.00E+26		1.00E+26	1.00E+20
@		845.44		7.30	1.00E+26		1.00E+26	1.00E+20
@		1175.40		1.11	1.00E+26		1.00E+26	1.00E+20
@		1740.52		2.04	1.00E+26		1.00E+26	1.00E+20
@	KR-88	165.98		3.10	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		196.30		26.00	1.00E+26		1.00E+26	1.00E+20
@		362.23		2.25	1.00E+26		1.00E+26	1.00E+20
@		834.83		13.00	1.00E+26		1.00E+26	1.00E+20
@		985.78		1.52	1.00E+26		1.00E+26	1.00E+20
@		1141.33		1.28	1.00E+26		1.00E+26	1.00E+20
@		1179.51		1.00	1.00E+26		1.00E+26	1.00E+20
@		1250.67		1.12	1.00E+26		1.00E+26	1.00E+20
@		1369.50		1.48	1.00E+26		1.00E+26	1.00E+20
@		1518.39		2.15	1.00E+26		1.00E+26	1.00E+20
@		1529.77		10.90	1.00E+26		1.00E+26	1.00E+20
@	RB-88	898.03		14.04	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		1836.01		21.40	1.00E+26		1.00E+26	1.00E+20
	Y-88	898.04		93.68	1.43E+01	1.04E+01	3.32E+00	7.11E+00
		1836.06		99.24	1.04E+01		-9.47E+00	5.15E+00
	NB-94x	702.62		97.90	8.07E+00	8.07E+00	-6.75E+00	4.01E+00
		871.09		99.90	8.92E+00		-1.69E+00	4.43E+00
	NB-95	765.81		99.81	4.08E+01	4.08E+01	-4.27E+00	2.03E+01
	NB-95m	204.12		2.33	1.35E+07	1.88E+06	-1.28E+06	6.75E+06
		235.69	*	24.80	1.88E+06		-1.79E+07	9.36E+05
	ZR-95	724.20		44.17	3.11E+01	2.48E+01	-1.58E+00	1.54E+01
		756.73		54.46	2.48E+01		1.66E+00	1.23E+01
	NB-96	460.04		26.62	3.35E+18	9.40E+17	1.33E+18	1.67E+18

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
NB-96	568.87		57.97	1.50E+18	9.40E+17	-1.83E+17	7.48E+17
	778.22		96.45	9.40E+17		-2.97E+19	4.67E+17
	849.93		20.40	4.91E+18		-7.02E+18	2.44E+18
	1200.23		19.96	5.01E+18		-1.16E+19	2.48E+18
MO-99	140.51		4.52	1.85E+08	6.65E+07	-2.69E+08	9.25E+07
	181.06		6.08	1.43E+08		-1.14E+09	7.12E+07
	366.42		1.20	6.36E+08		-3.19E+08	3.17E+08
	739.50		12.13	6.65E+07		-3.76E+07	3.30E+07
	777.92		4.28	1.94E+08		-6.12E+09	9.63E+07
@ TC-99M	140.51		89.06	1.00E+26	1.00E+26	1.00E+26	1.00E+20
RU-103	443.80		3.27	5.99E+02	2.01E+01	-2.19E+02	2.98E+02
	497.08		90.90	2.01E+01		-2.23E+01	1.00E+01
	610.33		5.75	1.47E+03		-7.45E+03	7.36E+02
RHRU-106	621.93		9.93	7.13E+01	7.13E+01	-4.63E+01	3.54E+01
	1050.41		1.56	6.26E+02		9.82E+02	3.11E+02
AG-108M	433.94		90.50	8.26E+00	8.26E+00	-6.11E+00	4.11E+00
	614.28		89.90	3.16E+01		-8.96E+02	1.58E+01
	722.94		90.90	8.30E+00		-6.18E-01	4.12E+00
CD-109	88.03	*	3.61	1.52E+02	1.52E+02	5.17E+02	7.59E+01
AG-110M	116.48		1.36	5.56E+02	7.98E+00	-3.83E+02	2.77E+02
	446.81		3.72	2.30E+02		-9.63E+01	1.14E+02
	620.36		2.79	2.72E+02		-1.28E+04	1.35E+02
	657.76		94.00	7.98E+00		-6.85E+01	3.96E+00
	677.62		10.28	7.30E+01		-3.99E+01	3.63E+01
	687.02		6.39	1.23E+02		8.12E+01	6.10E+01
	706.68		16.32	5.68E+01		-5.39E+01	2.82E+01
	744.28		4.70	1.81E+02		2.22E+02	8.99E+01
	763.94		22.14	6.34E+01		-1.77E+01	3.16E+01
	818.03		7.29	1.28E+02		-5.72E+01	6.38E+01
	884.68		72.19	1.47E+01		4.15E+00	7.32E+00
	937.49		34.13	4.45E+01		3.94E+02	2.22E+01
	1384.30		24.12	7.18E+01		-1.53E+01	3.57E+01
	1475.79		3.97	2.77E+02		4.19E+01	1.37E+02
	1505.04		12.95	1.30E+02		-1.58E+02	6.46E+01
	1562.30		1.02	1.02E+03		-9.96E+01	5.03E+02
SN-113	255.06		1.82	6.56E+02	1.66E+01	5.34E+03	3.27E+02
	391.69		64.00	1.66E+01		-6.75E+00	8.25E+00
IN-114	190.27		15.40	1.14E+02	1.14E+02	-9.31E+02	5.67E+01
	558.43		4.40	3.43E+02		6.99E+01	1.70E+02
	725.24		4.40	3.60E+02		-4.95E+01	1.79E+02
SB-122	564.24		69.30	1.46E+07	1.46E+07	-2.39E+06	7.25E+06
I-124	602.72		60.50	1.14E+05	1.14E+05	-1.79E+05	5.67E+04
	722.78		9.98	7.19E+05		1.51E+06	3.57E+05
	1509.49		2.99	4.61E+06		2.66E+07	2.29E+06
	1691.02		10.40	6.93E+05		1.31E+06	3.42E+05
SB-124	602.73		97.80	1.40E+01	1.40E+01	-2.20E+01	6.97E+00
	645.85		7.38	1.65E+02		2.61E+01	8.21E+01
	709.32		1.35	1.02E+03		-1.89E+03	5.08E+02
	713.78		2.27	5.73E+02		-1.88E+03	2.85E+02
	722.79		10.76	1.32E+02		2.78E+02	6.58E+01
	968.20		1.89	9.30E+02		-6.70E+02	4.62E+02
	1045.13		1.84	8.36E+02		-9.73E+02	4.15E+02
	1325.51		1.62	9.51E+02		-7.90E+02	4.71E+02

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	SB-124	1355.18		1.04	1.51E+03	1.40E+01	-7.70E+01	7.46E+02
		1368.16		2.62	6.09E+02		-6.29E+02	3.02E+02
		1436.56		1.23	1.33E+03		-1.01E+03	6.57E+02
		1690.98		47.30	3.03E+01		5.72E+01	1.50E+01
	I-125	30.98		20.10	9.24E+01	9.24E+01	-2.98E+02	4.61E+01
		35.49		6.68	2.52E+02		1.71E+03	1.26E+02
	SB-125	176.31		6.82	1.15E+02	2.98E+01	-1.06E+02	5.75E+01
		380.45		1.52	4.78E+02		-5.55E+02	2.38E+02
		427.88		29.60	2.98E+01		-5.48E+00	1.48E+01
		463.36		10.49	7.11E+01		-4.40E+01	3.54E+01
		600.60		17.86	4.16E+01		-8.40E+01	2.07E+01
		606.72		5.03	6.56E+02		-7.95E+01	3.28E+02
		635.95		11.31	6.07E+01		3.69E+01	3.01E+01
		671.45		1.80	3.85E+02		-2.38E+03	1.91E+02
@	XE-125	188.42		54.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		243.38		30.10	1.00E+26		1.00E+26	1.00E+20
+	I-126	388.63	*	34.10	3.01E+02	3.01E+02	7.43E+02	1.50E+02
	SB-126	414.80		83.30	2.10E+02	1.46E+02	-4.98E+02	1.05E+02
		666.30		99.60	1.91E+02		1.26E+03	9.52E+01
		695.00		99.60	1.46E+02		-3.84E+02	7.23E+01
		697.00		28.90	5.05E+02		-1.55E+03	2.51E+02
		720.50		53.80	3.04E+02		-8.07E+01	1.51E+02
		856.70		17.60	1.06E+03		-1.50E+02	5.28E+02
	I-129	39.58		7.45	9.04E+01	9.04E+01	-1.76E+02	4.51E+01
@	I-130	418.01		34.15	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		536.09		99.00	1.00E+26		1.00E+26	1.00E+20
@		668.54		96.10	1.00E+26		1.00E+26	1.00E+20
@		739.48		82.30	1.00E+26		1.00E+26	1.00E+20
@		1157.47		11.30	1.00E+26		1.00E+26	1.00E+20
	I-131	284.30		6.14	1.55E+04	9.83E+02	6.81E+04	7.73E+03
		364.49		81.70	9.83E+02		-3.91E+02	4.90E+02
		636.99		7.17	1.09E+04		4.32E+03	5.40E+03
		722.91		1.77	5.04E+04		-3.76E+03	2.51E+04
	XE-131M	163.93		1.91	1.02E+04	1.02E+04	-4.90E+03	5.11E+03
	TE-132	111.76		1.74	4.85E+07	1.31E+06	6.29E+07	2.42E+07
		116.30		1.96	5.19E+07		-3.58E+07	2.59E+07
		228.16		88.00	1.31E+06		-3.77E+06	6.54E+05
+	BA-133	53.16	*	2.20	1.43E+02	1.44E+01	5.56E+00	7.09E+01
		79.62		2.62	2.52E+02		-4.58E+02	1.26E+02
		81.00	*	34.06	1.44E+01		3.59E+01	7.19E+00
		160.61		0.64	1.23E+03		-3.43E+03	6.13E+02
		223.23		0.45	1.66E+03		2.60E+02	8.28E+02
		276.40		7.16	1.10E+02		-5.28E+01	5.47E+01
		302.85	*	18.33	3.00E+01		1.36E+02	1.49E+01
		356.02		62.05	2.54E+01		-2.17E+02	1.27E+01
		383.85		8.94	8.16E+01		-3.63E+01	4.06E+01
	I-133	529.87		87.00	1.23E+20	1.23E+20	-7.37E+19	6.11E+19
		875.33		4.51	3.07E+21		9.78E+20	1.53E+21
	CS-134	475.35		1.47	4.97E+02	9.34E+00	-3.83E+02	2.47E+02
		563.23		8.38	8.84E+01		2.79E+01	4.40E+01
		569.32		15.43	4.86E+01		9.86E+00	2.42E+01
		604.70		97.56	1.76E+01		-9.09E+00	8.79E+00
		795.84		85.44	9.34E+00		-5.92E+01	4.64E+00

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-134	801.93	8.73	1.10E+02	9.34E+00	-2.16E+02	5.48E+01
	1038.57	1.00	8.61E+02		-2.19E+02	4.27E+02
	1167.94	1.80	4.91E+02		-1.36E+03	2.43E+02
	1365.15	3.04	2.90E+02		-3.26E+01	1.44E+02
@ I-134	405.45	7.35	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	540.83	7.60	1.00E+26		1.00E+26	1.00E+20
@	595.36	11.20	1.00E+26		1.00E+26	1.00E+20
@	621.79	10.60	1.00E+26		1.00E+26	1.00E+20
@	677.34	7.80	1.00E+26		1.00E+26	1.00E+20
@	847.03	95.40	1.00E+26		1.00E+26	1.00E+20
@	884.09	64.90	1.00E+26		1.00E+26	1.00E+20
@	1072.55	15.00	1.00E+26		1.00E+26	1.00E+20
@	1136.16	9.20	1.00E+26		1.00E+26	1.00E+20
CS-135	787.20	100.00	9.22E+00	8.52E+00	4.30E+01	4.58E+00
	846.10	95.90	8.52E+00		-1.14E+01	4.23E+00
@ I-135	417.63	3.55	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	546.56	7.20	1.00E+26		1.00E+26	1.00E+20
@	836.80	6.73	1.00E+26		1.00E+26	1.00E+20
@	1038.76	8.00	1.00E+26		1.00E+26	1.00E+20
@	1124.00	3.64	1.00E+26		1.00E+26	1.00E+20
@	1131.51	22.74	1.00E+26		1.00E+26	1.00E+20
@	1260.41	28.90	1.00E+26		1.00E+26	1.00E+20
@	1457.56	8.73	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.62	1.00E+26		1.00E+26	1.00E+20
@	1706.46	4.13	1.00E+26		1.00E+26	1.00E+20
@	1791.20	7.77	1.00E+26		1.00E+26	1.00E+20
@ XE-135	249.79	90.20	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	608.18	2.90	1.00E+26		1.00E+26	1.00E+20
@ XE-135M	526.56	80.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
CS-136	66.88	4.80	2.53E+03	1.47E+02	3.17E+04	1.26E+03
	86.36	5.20	2.33E+03		1.64E+04	1.16E+03
	153.25	5.77	2.67E+03		1.48E+04	1.33E+03
	163.92	3.40	4.16E+03		-1.99E+03	2.07E+03
	176.60	10.00	1.39E+03		-1.24E+03	6.93E+02
	273.65	11.10	1.70E+03		1.76E+04	8.46E+02
	340.55	42.30	3.44E+02		-1.11E+02	1.71E+02
	818.51	100.00	1.47E+02		-3.20E+01	7.31E+01
	1048.07	80.00	1.99E+02		-2.09E+02	9.87E+01
	1235.36	20.10	1.56E+03		-4.87E+03	7.77E+02
CS-137	661.66	85.10	9.70E+00	9.70E+00	-4.46E+01	4.83E+00
@ CS-138	138.10	1.49	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	227.76	1.51	1.00E+26		1.00E+26	1.00E+20
@	408.98	4.66	1.00E+26		1.00E+26	1.00E+20
@	462.80	30.70	1.00E+26		1.00E+26	1.00E+20
@	547.00	10.76	1.00E+26		1.00E+26	1.00E+20
@	871.80	5.11	1.00E+26		1.00E+26	1.00E+20
@	1009.78	29.80	1.00E+26		1.00E+26	1.00E+20
@	1147.22	1.24	1.00E+26		1.00E+26	1.00E+20
@	1343.59	1.14	1.00E+26		1.00E+26	1.00E+20
@	1435.86	76.30	1.00E+26		1.00E+26	1.00E+20
LA-138	788.74	33.60	2.75E+01	1.30E+01	1.32E+02	1.37E+01
	1435.80	66.40	1.30E+01		-1.14E+01	6.46E+00
@ BA-139	165.86	23.60	1.00E+26	1.00E+26	1.00E+26	1.00E+20

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	CE-139	165.85		79.90	1.27E+01	1.27E+01	-7.39E+00	6.33E+00
	BA-140	162.66		6.21	2.51E+03	5.93E+02	-5.71E+03	1.25E+03
		304.85		4.30	3.66E+03		-1.73E+03	1.82E+03
		423.72		3.10	5.55E+03		-4.73E+03	2.76E+03
		437.58		1.93	7.58E+03		-1.46E+04	3.77E+03
		537.26		24.39	5.93E+02		-2.11E+02	2.95E+02
	LA-140	328.76		20.32	3.11E+11	8.33E+10	2.91E+11	1.55E+11
		432.49		2.90	2.06E+12		-1.41E+12	1.02E+12
		487.02		45.50	1.30E+11		4.84E+10	6.47E+10
		751.64		4.33	1.34E+12		7.02E+11	6.68E+11
		815.77		23.30	2.65E+11		-1.30E+12	1.31E+11
		867.85		5.50	1.27E+12		-2.73E+11	6.32E+11
		919.55		2.66	2.59E+12		-3.29E+12	1.29E+12
		925.19		6.90	9.88E+11		-1.43E+13	4.91E+11
		1596.21		95.40	8.33E+10		-2.00E+10	4.13E+10
	CE-141	145.44		48.20	5.69E+01	5.69E+01	-1.02E+02	2.84E+01
	CE-144	80.12		1.36	5.13E+02	7.29E+01	-4.91E+03	2.56E+02
		133.51		11.09	7.29E+01		-1.39E+01	3.64E+01
	PM-144	476.78		41.98	1.88E+01	7.36E+00	-1.41E+01	9.36E+00
		618.01		98.59	7.36E+00		-1.65E+03	3.66E+00
		694.00		0.55	1.35E+03		-2.52E+03	6.68E+02
		696.49		99.49	7.54E+00		-2.49E+01	3.74E+00
		778.57		1.51	5.41E+02		-1.56E+04	2.69E+02
		814.14		0.55	1.55E+03		-7.75E+03	7.72E+02
	PM-146	146.20		0.22	3.92E+03	1.12E+01	-1.30E+04	1.96E+03
		453.88		66.00	1.12E+01		-2.61E+00	5.58E+00
		589.80		0.43	1.64E+03		-1.59E+03	8.15E+02
		633.25		1.12	5.95E+02		9.09E+01	2.96E+02
		735.93		22.80	3.04E+01		-2.10E+01	1.51E+01
		747.24		17.71	4.12E+01		-1.03E+01	2.05E+01
	ND-147	91.11		27.90	6.31E+02	6.31E+02	-5.05E+03	3.15E+02
		319.41		1.95	1.17E+04		-2.35E+04	5.83E+03
		398.15		0.87	2.94E+04		-2.14E+04	1.46E+04
		439.89		1.20	1.96E+04		-2.12E+04	9.78E+03
		531.02		13.09	1.77E+03		-8.40E+02	8.81E+02
+	EU-152	121.78	*	28.42	2.03E+01	2.03E+01	1.43E+01	1.01E+01
		244.70		7.49	1.49E+02		-2.87E+02	7.46E+01
		295.94	*	0.44	1.29E+03		1.57E+05	6.43E+02
		344.28		26.58	2.78E+01		-2.90E+02	1.39E+01
		411.12		2.23	3.64E+02		-1.66E+03	1.81E+02
		443.98		3.09	2.40E+02		-6.49E+01	1.20E+02
		688.67		0.83	8.12E+02		2.13E+02	4.03E+02
		778.90		12.96	5.73E+01		-1.29E+03	2.84E+01
		867.39		4.15	2.15E+02		-3.81E+01	1.07E+02
		964.13	*	14.50	4.75E+01		9.24E+01	2.35E+01
		1005.28		0.65	1.33E+03		5.78E+02	6.60E+02
		1085.87		10.16	8.28E+01		-5.19E+00	4.11E+01
		1089.70		1.71	4.93E+02		-7.15E+01	2.45E+02
		1112.12		13.54	6.50E+01		-1.97E+03	3.23E+01
		1212.95		1.40	6.60E+02		1.81E+01	3.27E+02
		1299.12		1.63	5.05E+02		-7.46E+00	2.50E+02
		1408.01	*	20.87	2.91E+01		4.35E+02	1.43E+01
+	GD-153	69.67		2.54	2.94E+02	1.73E+01	-6.86E+02	1.47E+02

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	GD-153	97.43	*	30.20	1.73E+01	1.73E+01	-6.11E+00	8.61E+00
		103.18		21.44	2.80E+01		-2.38E+01	1.40E+01
	EU-154	123.07	*	40.78	1.42E+01	1.42E+01	1.00E+01	7.08E+00
		247.93		6.95	1.04E+02		-1.34E+03	5.16E+01
		444.49	*	0.56	1.02E+03		1.39E+03	5.09E+02
		582.10		0.89	8.68E+02		1.66E+03	4.32E+02
		591.76		4.99	1.41E+02		-1.05E+02	7.03E+01
		692.42		1.80	3.72E+02		-3.01E+02	1.85E+02
		723.30		20.22	3.78E+01		-2.81E+00	1.88E+01
		756.80		4.57	1.64E+02		1.10E+01	8.17E+01
		815.53		0.52	1.51E+03		-7.48E+03	7.49E+02
		845.39		0.59	1.43E+03		-1.68E+03	7.10E+02
		873.19		12.27	7.38E+01		5.44E-01	3.67E+01
		892.78		0.52	1.80E+03		-5.25E+01	8.93E+02
		904.08		0.90	1.06E+03		-1.27E+02	5.27E+02
		996.26		10.59	8.15E+01		-2.20E+01	4.05E+01
		1004.72		18.00	4.84E+01		2.70E+01	2.40E+01
		1246.15		0.87	1.13E+03		-7.43E+03	5.61E+02
		1274.44		35.19	2.48E+01		-1.37E+02	1.23E+01
		1494.05		0.70	1.49E+03		-1.73E+02	7.37E+02
		1596.49		1.80	5.66E+02		8.69E+02	2.80E+02
	EU-155	45.30		1.32	4.74E+02	1.68E+01	8.46E+02	2.36E+02
		60.01		1.13	4.63E+02		-4.22E+02	2.31E+02
		86.54	*	30.70	1.68E+01		5.73E+01	8.40E+00
		105.31		21.15	2.48E+01		-2.35E+01	1.24E+01
	W-187	72.00		11.10	3.16E+18	1.63E+18	-8.84E+18	1.58E+18
		134.25		8.80	5.38E+18		-9.19E+17	2.69E+18
		479.55		21.80	2.30E+18		-1.14E+18	1.14E+18
		618.26		6.28	6.93E+18		-1.55E+21	3.44E+18
		625.52		1.09	3.90E+19		-3.71E+19	1.94E+19
		685.73		27.30	1.63E+18		9.90E+17	8.12E+17
		772.89		4.12	2.16E+19		-1.55E+20	1.08E+19
	IR-192	295.96		28.66	9.74E+01	1.47E+01	3.76E+03	4.86E+01
		308.46		30.00	3.96E+01		-7.53E+01	1.97E+01
		316.51		82.81	1.47E+01		-1.75E+01	7.34E+00
		468.07		47.83	2.47E+01		-1.15E+01	1.23E+01
		588.58		4.51	2.59E+02		-2.27E+02	1.29E+02
		604.41		8.23	3.33E+02		-1.72E+02	1.66E+02
		612.47		5.31	1.01E+03		-1.78E+04	5.05E+02
	TL-201	135.34		2.56	8.29E+07	2.27E+07	-6.05E+07	4.14E+07
		167.43		10.00	2.27E+07		-1.76E+07	1.13E+07
	HG-203	279.20		81.46	2.07E+01	2.07E+01	-1.05E+01	1.03E+01
	TL-208	277.36		6.31	1.21E+02	9.02E+00	-5.95E+01	6.04E+01
		510.77		22.60	3.66E+01		2.03E+02	1.82E+01
		583.19		84.50	9.02E+00		-6.58E-01	4.49E+00
		763.13		1.81	4.86E+02		-3.11E+02	2.42E+02
		860.56		12.42	7.05E+01		2.00E+01	3.50E+01
+	PB-210	46.54	*	4.25	1.33E+02	1.33E+02	1.86E+02	6.63E+01
+	BI-211	351.06	*	12.91	6.80E+01	6.80E+01	1.14E+04	3.39E+01
+	PB-211	404.85	*	3.78	1.53E+02	1.53E+02	1.10E+03	7.64E+01
		427.09	*	1.76	4.25E+02		1.32E+03	2.12E+02
		704.64		0.46	1.72E+03		5.32E+03	8.56E+02
		766.51		0.62	2.20E+03		-1.37E+02	1.10E+03

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	PB-211	832.01	*	3.52	2.04E+02	1.53E+02	4.29E+02	1.01E+02
	BI-212	727.33		6.58	1.05E+02	1.05E+02	-3.01E+01	5.20E+01
		785.37		1.10	8.37E+02		3.83E+03	4.16E+02
		1078.62		0.56	1.44E+03		-1.90E+03	7.14E+02
		1620.50		1.49	5.34E+02		-7.60E+01	2.64E+02
	PB-212	115.18		0.59	9.16E+02	2.33E+01	-1.65E+02	4.57E+02
		238.63		43.30	2.33E+01		9.46E+01	1.16E+01
		300.09		3.28	2.73E+02		-1.27E+04	1.36E+02
+	BI-214	609.31	*	44.80	1.64E+01	1.64E+01	3.81E+03	8.15E+00
		665.45	*	1.29	3.39E+02		4.45E+03	1.68E+02
		768.36	*	4.80	1.56E+02		4.00E+03	7.74E+01
		806.17	*	1.22	5.46E+02		3.63E+03	2.71E+02
		934.06	*	3.03	2.30E+02		3.80E+03	1.14E+02
		1120.29	*	14.80	5.34E+01		3.91E+03	2.65E+01
		1155.19	*	1.64	4.13E+02		3.96E+03	2.04E+02
		1207.68	*	0.49	1.51E+03		2.96E+03	7.48E+02
		1238.11	*	5.86	1.24E+02		3.85E+03	6.15E+01
		1280.96	*	1.44	5.26E+02		4.05E+03	2.61E+02
		1377.67	*	3.92	1.55E+02		4.04E+03	7.66E+01
		1385.31	*	0.89	6.88E+02		3.60E+03	3.40E+02
		1401.50	*	1.55	3.89E+02		3.29E+03	1.92E+02
		1407.98	*	2.80	2.15E+02		3.22E+03	1.06E+02
		1415.80		0.48	1.97E+03		-2.04E+04	9.77E+02
		1509.23	*	2.12	4.14E+02		3.95E+03	2.05E+02
		1583.22	*	0.70	1.00E+03		3.00E+03	4.96E+02
		1661.28	*	1.14	5.76E+02		3.74E+03	2.84E+02
		1729.59	*	2.88	1.92E+02		3.91E+03	9.46E+01
		1764.49	*	15.36	3.35E+01		3.96E+03	1.64E+01
		1847.42	*	2.04	2.80E+02		3.30E+03	1.38E+02
+	PB-214	53.23	*	1.11	2.80E+02	2.45E+01	1.09E+01	1.39E+02
		241.98	*	7.50	1.10E+02		2.36E+03	5.46E+01
		258.79	*	0.55	1.01E+03		3.18E+03	5.03E+02
		295.21	*	18.50	3.04E+01		3.70E+03	1.52E+01
		351.92	*	35.80	2.45E+01		4.11E+03	1.22E+01
		785.91	*	0.85	5.93E+02		4.91E+03	2.94E+02
		839.03	*	0.63	1.19E+03		-3.99E+02	5.90E+02
+	RN-219	130.59		0.12	5.81E+03	5.05E+01	-1.44E+03	2.90E+03
		271.23	*	10.80	5.05E+01		9.15E+02	2.52E+01
		401.81	*	6.37	9.03E+01		1.01E+03	4.49E+01
	RN-220	549.73		0.11	6.28E+03	6.28E+03	-1.94E+03	3.12E+03
+	RA-223	122.32	*	1.19	4.81E+02	3.98E+01	3.39E+02	2.40E+02
		144.23	*	3.22	2.22E+02		2.18E+03	1.11E+02
		154.21	*	5.62	1.33E+02		8.40E+02	6.62E+01
		158.63		0.69	1.14E+03		-2.38E+03	5.68E+02
		179.54		0.15	5.10E+03		-6.02E+04	2.54E+03
		269.46	*	13.70	3.98E+01		9.02E+02	1.98E+01
		288.18		0.16	4.81E+03		-1.09E+05	2.40E+03
		323.87	*	3.93	1.56E+02		2.86E+02	7.79E+01
		328.40		0.21	3.90E+03		1.09E+04	1.94E+03
		338.28	*	2.79	1.98E+02		2.45E+02	9.84E+01
		342.90		0.22	3.41E+03		-3.46E+04	1.70E+03
		346.80		0.18	4.16E+03		-3.11E+04	2.07E+03
		371.68		0.48	1.44E+03		4.83E+02	7.20E+02

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	RA-224	240.99		3.97	2.85E+02	2.85E+02	4.84E+03	1.42E+02
	RA-226	186.10	*	3.50	2.01E+02	2.01E+02	4.12E+03	1.00E+02
+	TH-227	50.13	*	8.00	4.05E+01	4.05E+01	1.64E+00	2.01E+01
		79.72		1.89	3.46E+02		-6.29E+02	1.73E+02
		93.93	*	1.37	3.43E+02		-8.54E+02	1.71E+02
		210.65	*	1.10	6.55E+02		5.53E+02	3.26E+02
		235.97	*	12.70	9.03E+01		-8.61E+02	4.51E+01
		256.25	*	7.01	7.95E+01		8.51E+02	3.96E+01
		286.12	*	1.54	3.36E+02		8.54E+02	1.67E+02
		300.00	*	2.67	2.06E+02		1.62E+03	1.03E+02
		304.51	*	1.23	4.37E+02		8.50E+02	2.18E+02
		329.85	*	2.69	2.04E+02		2.97E+02	1.02E+02
		334.38	*	1.05	5.09E+02		1.20E+02	2.53E+02
	AC-228	99.50		1.28	4.13E+02	3.51E+01	-2.77E+02	2.06E+02
		129.07		2.45	2.82E+02		-1.71E+02	1.41E+02
		153.98		0.74	1.14E+03		6.65E+03	5.68E+02
		209.25		3.88	1.98E+02		-1.33E+02	9.88E+01
		270.24		3.43	3.25E+02		-6.56E+02	1.62E+02
		327.90		3.06	2.77E+02		1.55E+03	1.38E+02
		332.37		0.40	2.06E+03		1.23E+03	1.03E+03
		338.32		11.25	7.05E+01		-5.37E+00	3.52E+01
		409.46		1.94	4.57E+02		-1.34E+03	2.28E+02
		463.01		4.44	1.62E+02		-1.00E+02	8.04E+01
		508.96		0.47	1.75E+03		-5.34E+02	8.69E+02
		562.50		0.87	8.06E+02		2.17E+02	4.01E+02
		755.32		1.00	7.44E+02		4.45E+02	3.70E+02
		772.29		1.50	9.10E+02		-5.23E+03	4.54E+02
		782.14		0.50	1.78E+03		-6.60E+03	8.85E+02
		794.95		4.34	1.74E+02		-9.60E+02	8.62E+01
		830.49		0.55	1.72E+03		-2.06E+03	8.57E+02
		835.71		1.68	6.06E+02		2.94E+03	3.01E+02
		840.38		0.94	9.54E+02		-1.57E+03	4.74E+02
		904.20		0.78	1.21E+03		-1.45E+02	6.00E+02
		911.21		26.60	3.51E+01		2.10E+01	1.75E+01
		964.77		5.11	1.82E+02		3.15E+02	9.04E+01
		968.97		16.20	5.73E+01		-4.67E+01	2.85E+01
		1247.08		0.50	1.69E+03		-1.28E+04	8.37E+02
		1459.14		0.80	1.14E+03		2.23E+01	5.64E+02
		1495.91		0.89	1.16E+03		-1.00E+02	5.76E+02
		1580.54		0.61	1.71E+03		-2.95E+03	8.49E+02
		1588.21		3.27	3.25E+02		-7.38E+01	1.61E+02
		1630.63		1.60	4.68E+02		9.60E+01	2.31E+02
+	TH-228	84.37	*	1.23	3.88E+02	3.88E+02	2.71E+03	1.94E+02
		215.99		0.26	2.83E+03		-1.59E+03	1.41E+03
	TH-229	75.09		0.61	1.18E+03	1.69E+02	1.22E+04	5.90E+02
		86.35		3.90	1.69E+02		1.19E+03	8.44E+01
		124.60		1.43	4.77E+02		-1.22E+02	2.38E+02
		136.99		1.18	6.12E+02		-2.31E+03	3.05E+02
		148.15		0.88	8.74E+02		-4.38E+03	4.36E+02
		154.34		0.77	1.09E+03		6.40E+03	5.46E+02
		156.41		1.19	7.13E+02		-5.44E+02	3.56E+02
		193.51		4.41	1.77E+02		-2.10E+03	8.83E+01
		204.69		0.60	1.29E+03		-2.79E+02	6.44E+02

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TH-229	210.85		2.77	2.77E+02	1.69E+02	-9.29E+01	1.38E+02
+	PA-231	283.69	*	1.70	3.05E+02	2.24E+02	6.86E+02	1.52E+02
		300.07	*	2.46	2.24E+02		1.75E+03	1.11E+02
		302.65	*	2.20	2.47E+02		1.12E+03	1.23E+02
		330.06	*	1.40	3.93E+02		5.70E+02	1.95E+02
+	TH-231	81.23	*	0.89	5.46E+02	7.24E+01	1.36E+03	2.72E+02
		84.21	*	6.60	7.24E+01		5.05E+02	3.61E+01
		89.95	*	0.94	4.91E+02		2.34E+02	2.45E+02
	TH-232	63.81		0.27	1.93E+03	1.93E+03	-7.45E+03	9.62E+02
	U-232	57.78		0.20	2.56E+03	2.56E+03	-3.12E+03	1.28E+03
		129.08		0.07	1.00E+04		-6.09E+03	5.00E+03
	PA-233	75.35		1.39	5.18E+02	1.87E+01	5.33E+03	2.59E+02
		86.81		1.97	3.17E+02		6.59E+02	1.58E+02
		103.97		0.87	5.89E+02		-5.89E+02	2.94E+02
		271.48		0.33	3.43E+03		7.05E+04	1.71E+03
		300.34		6.62	1.35E+02		-6.32E+03	6.75E+01
		312.17		38.60	1.87E+01		-1.38E+01	9.30E+00
		340.81		4.47	1.77E+02		-5.73E+01	8.85E+01
		375.45		0.68	1.03E+03		6.58E+02	5.14E+02
		398.62		1.39	6.03E+02		-2.57E+02	3.00E+02
		415.76		1.75	4.66E+02		-5.35E+01	2.32E+02
+	U-233	42.44		0.09	7.15E+03	7.15E+03	-2.34E+04	3.56E+03
		54.70		0.02	2.92E+04		-1.65E+04	1.46E+04
		97.13	*	0.02	2.23E+04		-7.88E+03	1.11E+04
	PA-234	62.70		1.55	3.35E+02	3.89E+01	-1.84E+03	1.67E+02
		99.86		3.19	1.65E+02		-1.84E+02	8.23E+01
		125.46		0.78	8.78E+02		-2.53E+02	4.38E+02
		131.30		18.00	3.89E+01		1.67E+00	1.94E+01
		140.50		0.81	9.18E+02		-1.33E+03	4.58E+02
		152.71		5.97	1.41E+02		5.72E+02	7.02E+01
		159.48		0.65	1.21E+03		-2.89E+03	6.04E+02
		170.85		0.50	1.52E+03		-3.57E+02	7.59E+02
		186.15		1.76	5.52E+02		8.14E+03	2.75E+02
		193.73		0.49	1.60E+03		-1.81E+04	7.97E+02
		200.97		0.90	8.68E+02		3.43E+02	4.33E+02
		203.12		1.23	6.34E+02		1.14E+01	3.16E+02
		227.00		9.99	7.37E+01		-3.18E+01	3.68E+01
		245.37		0.75	1.39E+03		-4.29E+03	6.93E+02
		249.22		2.47	2.88E+02		-5.46E+03	1.44E+02
		272.28		1.08	1.05E+03		2.27E+04	5.25E+02
		293.79		2.99	5.53E+02		-4.70E+03	2.76E+02
		330.40		0.77	1.04E+03		-8.71E+02	5.19E+02
		369.50		2.47	2.79E+02		2.66E+01	1.39E+02
		372.00		1.21	5.74E+02		2.21E+02	2.86E+02
		458.68		1.13	6.59E+02		1.31E+03	3.28E+02
		506.75		1.29	5.87E+02		-5.80E+02	2.92E+02
		513.40		1.10	7.52E+02		-8.66E+01	3.75E+02
		521.40		0.74	9.13E+02		-1.94E+03	4.54E+02
		565.20		1.03	6.81E+02		-1.25E+02	3.39E+02
		569.32		11.80	6.04E+01		1.23E+01	3.00E+01
		602.60		0.54	1.34E+03		-2.11E+03	6.68E+02
		663.90		0.54	1.64E+03		-4.48E+03	8.16E+02
		666.50		1.16	7.58E+02		4.88E+03	3.77E+02

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	PA-234	669.70		0.99	8.84E+02	3.89E+01	-3.00E+03	4.40E+02
		692.60		1.24	5.34E+02		-4.32E+02	2.65E+02
		699.03		3.61	2.02E+02		-4.14E+02	1.00E+02
		705.90		2.27	3.48E+02		-3.39E+02	1.73E+02
		730.90		0.63	1.09E+03		1.22E+02	5.42E+02
		733.39		6.90	9.87E+01		-7.58E+01	4.90E+01
		738.00		1.15	6.05E+02		-3.63E+02	3.01E+02
		742.81		2.06	3.53E+02		-6.02E+01	1.75E+02
		755.00		1.22	6.10E+02		3.39E+02	3.03E+02
		780.40		0.90	8.46E+02		-4.67E+03	4.20E+02
		786.27		1.19	7.74E+02		3.55E+03	3.85E+02
		794.90		1.34	5.62E+02		-3.11E+03	2.79E+02
		796.10		2.58	2.94E+02		-1.86E+03	1.46E+02
		805.52		3.14	3.04E+02		-1.97E+02	1.51E+02
		819.20		1.88	4.26E+02		-3.20E+01	2.12E+02
		824.65		3.12	2.63E+02		-4.90E+02	1.31E+02
		831.50		4.12	2.30E+02		-1.99E+02	1.14E+02
		876.00		2.52	3.60E+02		1.53E+02	1.79E+02
		880.50		10.40	8.73E+01		9.48E+00	4.34E+01
		883.24		9.58	9.52E+01		3.04E+01	4.73E+01
		898.67		3.24	2.90E+02		9.86E+01	1.44E+02
		926.00		16.80	5.18E+01		-8.05E+02	2.57E+01
		946.18		15.00	5.76E+01		-9.17E+01	2.86E+01
		980.48		5.15	1.66E+02		-4.05E+01	8.23E+01
		984.20		1.62	5.26E+02		1.00E+02	2.61E+02
		1028.70		0.57	1.49E+03		1.02E+03	7.39E+02
		1083.20		0.50	1.67E+03		-2.59E+02	8.31E+02
		1352.90		1.15	7.18E+02		-1.86E+02	3.56E+02
		1393.90		2.06	4.18E+02		-3.43E+03	2.07E+02
		1668.40		0.76	1.20E+03		-2.11E+03	5.95E+02
		1693.80		0.69	1.02E+03		4.66E+01	5.03E+02
	PA-234M	766.36		0.29	4.64E+03	1.04E+03	-2.89E+02	2.31E+03
		811.00		0.51	1.86E+03		-4.86E+03	9.26E+02
		1001.03		0.84	1.04E+03		9.12E+02	5.15E+02
	TH-234	63.29		4.84	1.07E+02	9.81E+01	-5.03E+02	5.36E+01
		83.30		0.08	8.57E+03		2.26E+04	4.27E+03
		92.59		5.58	9.81E+01		-3.11E+02	4.89E+01
		112.81		0.28	1.92E+03		2.05E+03	9.59E+02
	U-234	53.20	*	0.12	2.52E+03	2.52E+03	9.84E+01	1.26E+03
		120.90		0.03	1.96E+04		-6.41E+03	9.78E+03
+	U-235	109.16		1.54	3.39E+02	1.23E+01	-1.14E+02	1.69E+02
		143.76	*	10.96	6.52E+01		6.40E+02	3.25E+01
		163.36		5.08	1.52E+02		-1.48E+02	7.58E+01
		185.71	*	57.20	1.23E+01		2.52E+02	6.12E+00
		194.94		0.63	1.24E+03		-6.96E+03	6.20E+02
		202.11		1.08	7.23E+02		3.78E+02	3.61E+02
		205.31		5.01	1.54E+02		-8.03E+01	7.68E+01
+	NP-237	57.10		0.39	1.32E+03	4.08E+01	-1.80E+03	6.56E+02
		86.48	*	12.40	4.08E+01		1.39E+02	2.03E+01
		94.64	*	0.60	7.83E+02		-1.95E+03	3.91E+02
		143.25	*	0.43	1.66E+03		1.63E+04	8.29E+02
	NP-239	106.12		27.20	2.16E+08	2.16E+08	-2.66E+08	1.08E+08
		209.75		3.42	2.58E+09		-1.57E+09	1.29E+09

Analysis Report for 590212R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	NP-239	228.18		10.76	7.85E+08	2.16E+08	-2.26E+09	3.91E+08
		277.60		14.38	6.09E+08		-3.00E+08	3.04E+08
		334.31		2.07	4.30E+09		-7.28E+09	2.14E+09
	AM-241	59.54		35.90	1.43E+01	1.43E+01	-1.07E+01	7.11E+00
	CM-241	132.41		3.90	5.80E+02	3.21E+01	-6.01E+01	2.89E+02
		165.01		3.40	7.27E+02		-4.03E+02	3.63E+02
		205.88		2.67	9.25E+02		-5.16E+02	4.61E+02
		430.63		4.06	6.52E+02		-1.33E+02	3.25E+02
		463.27		1.23	1.87E+03		-1.16E+03	9.33E+02
		471.80		71.30	3.21E+01		7.19E-01	1.60E+01
		636.88		1.53	1.39E+03		6.69E+02	6.89E+02
+	AM-243	74.66	*	68.20	7.43E+00	7.43E+00	3.58E+01	3.70E+00

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

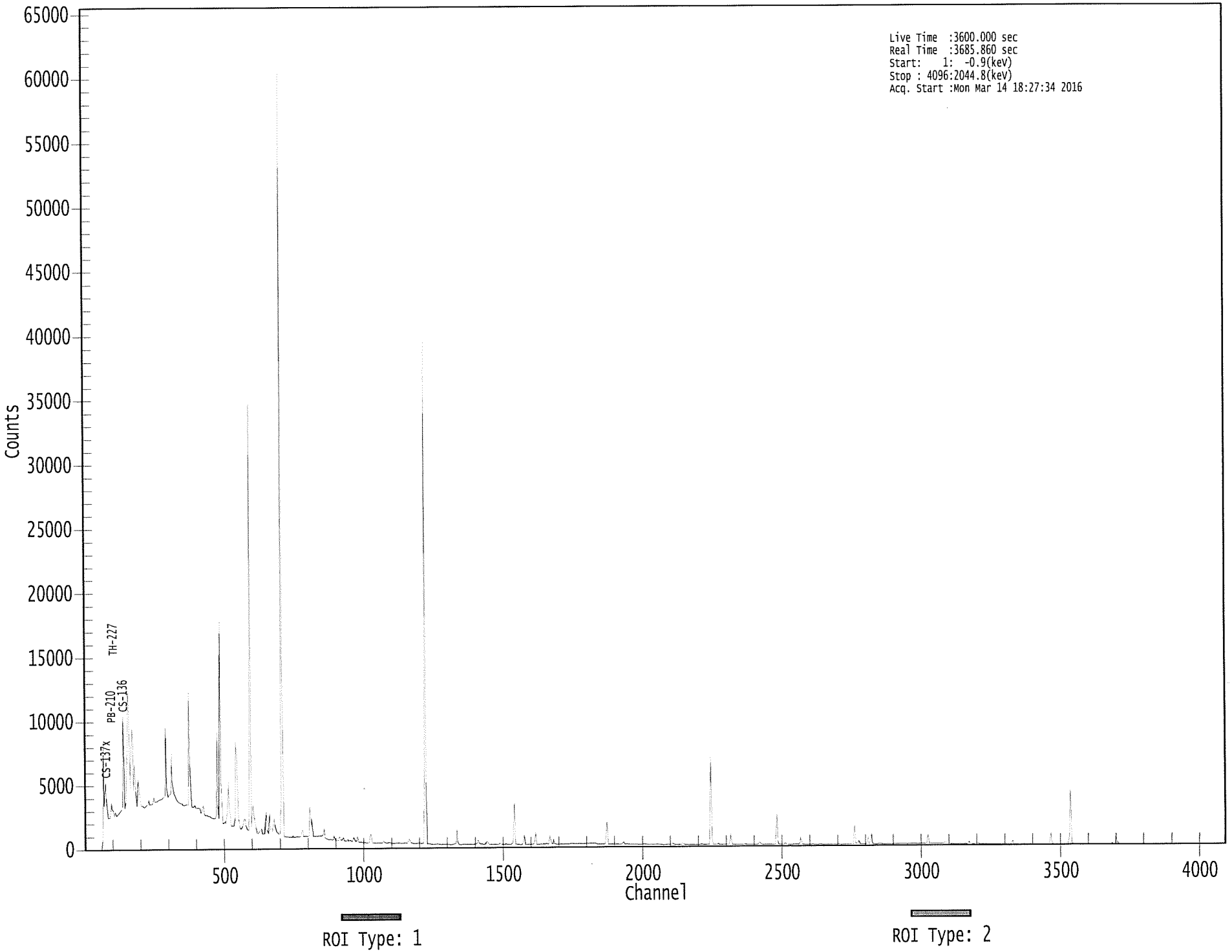
No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

0000007053.CNF



011691

Apex™

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 590213R2
Sample Description	: Tetra Tech TO# 160115-1
Sample Type	: Soil
Sample Size	: 2.223E+02 grams
Facility	: Default
Sample Taken On	: 1/19/2016 1:50:00PM
Acquisition Started	: 3/14/2016 7:45:44PM
Procedure	: Raised 300g can soil
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3634.8 seconds
Dead Time	: 0.96 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7055

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

ENERGY CALIBRATION REPORT

Detector Name : DET01

ENERGY CALIBRATION COEFFICIENTS

Energy Calibrate Performed on : 11/30/2015 7:51:04PM
by : Administrator
Energy Calibrate Type : POLY

Energy (keV) = -1.445 + 0.500*ch + -1.06E-07*ch^2 + 0.00E+00*ch^3

SHAPE CALIBRATION COEFFICIENTS

Shape Calibrate Performed on : 11/30/2015 7:51:04PM
by : Administrator

FWHM = 0.610 + 3.62E-02 *E^1/2

LOW TAIL = 0.00E+00 + 0.00E+00*E

ENERGY CALIBRATION RESULTS TABLE

Centroid Channel	Centroid error	Energy (keV)
121.97	0.13	59.54
1326.58	0.01	661.66
2669.40	0.03	1332.50

SHAPE CALIBRATION RESULTS TABLE

Energy (keV)	FWHM channels	FWHM error	TAIL channels	TAIL error
59.54	2.12	0.24	0.00	0.00
661.66	3.08	0.02	0.00	0.00
1332.50	3.90	0.06	0.00	0.00

EFFICIENCY CALIBRATION REPORT

Detector Name : DET01
Geometry Description : Raised 300gm Can Soil
Efficiency Calibration Performed on : 12/20/2005 11:10:05AM
by : Administrator
Efficiency Type Used : EMPIRICAL

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

Efficiency Triplets

Energy	*% Efficiency*	*Error*	*Computed*	*Error*	*% Difference*
59.50	6.77E-01	2.04E-02			
88.00	6.93E-01	2.10E-02			
122.10	7.30E-01	2.28E-02			
165.90	6.33E-01	3.05E-02			
391.70	3.38E-01	1.74E-02			
661.70	2.30E-01	6.91E-03			
898.00	1.91E-01	8.56E-03			
1173.20	1.46E-01	4.40E-03			
1332.50	1.33E-01	3.99E-03			
1836.00	1.03E-01	3.36E-03			

DUAL Efficiency Calibration Equation

Single Equation Terms

Offset :	-3.20E+01
Slope :	1.70E+01
Quadratic :	-3.77E+00
Cubic :	3.53E-01
4th Order :	-1.23E-02
5th Order :	0.00E+00
6th Order :	0.00E+00
7th Order :	0.00E+00
8th Order :	0.00E+00
9th Order :	0.00E+00

EMPIRICAL Efficiency Calibration Equation

Empirical Equation Terms

Scaling :	9.48E+02
Offset :	-6.35E+00
Slope :	8.02E-01
Quadratic :	2.35E-02
Cubic :	-1.58E-02
4th Order :	-1.23E-02
5th Order :	0.00E+00

LINEAR Efficiency Calibration Equation

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

Linear Equation Terms

Offset :	-1.79E-04
Slope :	-2.75E+00
Quadratic :	1.74E+02
Cubic :	-1.42E+04
4th Order :	2.49E+05
5th Order :	6.29E+06
6th Order :	0.00E+00
7th Order :	0.00E+00
8th Order :	0.00E+00
9th Order :	0.00E+00

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

PEAK LOCATE REPORT

Peak Locate Performed on : 3/30/2016 2:04:39PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 4.30

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	32.17	67.23	0.1957	20.11
2	36.38	75.64	0.2584	9.65
3	46.61	96.12	0.2895	10.50
4	50.27	103.43	0.3194	5.56
5	67.76	138.42	0.1288	35.18
6	74.91	152.62	0.1520	26.81
7	77.17	157.35	0.1277	40.03
8	81.13	165.31	0.1829	20.76
9	83.89	170.57	0.1415	28.24
10	87.37	177.54	0.1989	13.77
11	89.90	182.84	0.3353	7.44
12	94.76	192.42	0.2230	10.03
13	97.83	198.39	0.3499	5.00
14	144.10	291.11	0.1522	25.26
15	154.31	311.52	0.1696	18.16
16	186.29	375.51	0.1159	37.99
17	210.77	424.47	0.2998	5.90
18	236.15	475.25	0.1215	35.97
19	242.14	487.21	0.0930	61.78
20	254.04	510.52	0.3123	5.38
21	256.35	515.64	0.1542	23.49
22	259.15	521.41	0.2673	8.30
23	269.61	541.97	0.1412	31.79
24	271.38	545.88	0.1759	24.23

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
25	274.76	552.84	0.3124	6.35
26	283.78	570.53	0.2646	7.51
27	295.38	593.71	0.0726	97.05
28	300.15	603.23	0.1601	20.76
29	302.85	608.52	0.2466	8.58
30	324.01	651.01	0.1707	17.36
31	330.05	663.09	0.1734	16.78
32	334.35	671.37	0.3014	4.55
33	338.44	679.85	0.1859	15.07
34	352.06	707.12	0.0585	137.40
35	387.10	776.90	0.3831	4.81
36	389.09	781.47	0.3304	4.87
37	402.05	807.08	0.1438	22.91
38	405.23	813.60	0.1778	14.84
39	427.35	857.74	0.2324	9.19
40	445.10	893.27	0.3022	4.71
41	455.08	913.23	0.2765	5.60
42	462.20	927.48	0.3071	5.19
43	469.88	942.84	0.3375	4.56
44	480.64	964.37	0.2473	7.77
45	487.41	977.92	0.2245	9.12
46	510.94	1024.99	0.2208	6.68
47	534.06	1071.25	0.3296	4.46
48	580.42	1164.02	0.2213	9.27
49	609.62	1222.45	0.0571	122.43
50	665.80	1334.87	0.1491	19.39
51	703.38	1410.07	0.2254	8.03
52	720.06	1443.46	0.2322	7.76
53	768.79	1540.97	0.1080	36.02
54	786.29	1576.00	0.1750	13.83
55	806.60	1616.64	0.1589	14.99
56	821.42	1646.30	0.3060	4.68
57	832.48	1668.44	0.1691	13.17
58	839.45	1682.39	0.2233	7.22
59	934.52	1872.67	0.1217	24.50
60	964.67	1933.02	0.2353	6.24
61	1052.71	2109.25	0.2592	5.51
62	1070.51	2144.89	0.2727	4.99
63	1120.87	2245.70	0.0787	57.48
64	1155.83	2315.69	0.1434	17.47
65	1208.24	2420.62	0.2080	7.89
66	1238.74	2481.68	0.1010	33.90
67	1253.82	2511.87	0.2580	4.47
68	1281.62	2567.54	0.1533	13.95
69	1378.33	2761.23	0.1130	25.40
70	1385.97	2776.48	0.1817	9.68
71	1402.27	2809.22	0.1564	14.10
72	1408.64	2821.89	0.1284	20.44
73	1509.95	3024.73	0.1351	17.38
74	1539.31	3083.43	0.2093	6.44
75	1543.96	3092.77	0.2515	5.62
76	1583.92	3172.87	0.1918	9.36
77	1595.52	3195.94	0.2455	5.09
78	1599.95	3205.05	0.2692	4.75
79	1661.81	3328.85	0.1619	11.09

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
80	1730.35	3466.15	0.1214	20.73
81	1765.22	3535.99	0.0795	47.00
82	1839.16	3684.08	0.2388	6.13
83	1848.18	3702.16	0.1326	16.93

? = Adjacent peak noted
Errors quoted at 1.000 sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 3/30/2016 2:04:39PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	32.17	62 -	72	67.23	7.63E+03	140.35	7.79E+03	1.33
	2	36.38	72 -	82	75.64	1.56E+03	150.68	1.36E+04	1.14
	3	46.61	89 -	100	96.12	1.28E+03	153.17	1.39E+04	0.92
	4	50.27	100 -	106	103.43	-2.32E+02	108.75	8.93E+03	0.80
	5	67.76	131 -	142	138.42	1.02E+04	214.02	2.22E+04	1.10
M	6	74.91	145 -	186	152.71	3.60E+03	109.63	1.64E+04	0.85
m	7	77.17	145 -	186	157.23	7.18E+03	213.30	1.59E+04	0.85
m	8	81.13	145 -	186	165.16	1.83E+03	60.86	1.49E+04	0.86
m	9	83.89	145 -	186	170.68	4.71E+03	141.40	1.41E+04	0.87
m	10	87.37	145 -	186	177.64	2.19E+03	70.30	1.32E+04	0.87
m	11	89.90	145 -	186	182.71	3.79E+02	29.50	1.25E+04	0.88
M	12	94.76	187 -	206	192.43	-2.61E+03	263.82	1.07E+04	0.74
m	13	97.83	187 -	206	198.56	-1.30E+02	34.86	9.46E+03	0.74
	14	144.10	282 -	297	291.11	6.69E+03	239.92	2.83E+04	1.24
	15	154.31	306 -	316	311.52	4.18E+03	185.43	1.95E+04	1.28
	16	186.29	370 -	381	375.51	1.08E+04	194.71	1.69E+04	1.27
	17	210.77	421 -	433	424.47	1.25E+02	156.52	1.48E+04	1.00
	18	236.15	465 -	481	475.25	-6.09E+03	221.35	2.98E+04	0.90
	19	242.14	483 -	496	487.21	1.12E+04	202.26	1.75E+04	1.14
M	20	254.04	507 -	530	511.02	9.79E+02	65.80	6.38E+03	1.25
m	21	256.35	507 -	530	515.65	3.77E+03	90.10	7.03E+03	1.25
m	22	259.15	507 -	530	521.26	1.09E+03	65.72	6.82E+03	1.26
M	23	269.61	535 -	557	542.17	7.20E+03	106.96	5.43E+03	1.24
m	24	271.38	535 -	557	545.71	5.91E+03	99.29	6.01E+03	1.24
m	25	274.76	535 -	557	552.47	8.11E+02	58.91	5.81E+03	1.24
	26	283.78	563 -	583	570.53	-1.47E+04	212.70	2.92E+04	0.50
M	27	295.38	584 -	618	593.72	3.45E+04	209.95	5.01E+03	1.21
m	28	300.15	584 -	618	603.27	2.29E+03	71.96	4.59E+03	1.22
m	29	302.85	584 -	618	608.66	1.14E+03	58.60	4.32E+03	1.22
	30	324.01	648 -	656	651.01	8.85E+02	90.36	5.02E+03	1.16
M	31	330.05	657 -	685	663.09	4.48E+02	99.62	4.17E+03	0.97
m	32	334.35	657 -	685	671.69	6.01E+01	14.97	3.85E+03	0.98
m	33	338.44	657 -	685	679.87	3.93E+02	87.54	3.54E+03	0.98
	34	352.06	696 -	717	707.12	6.91E+04	296.71	9.04E+03	1.38

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	35	387.10	767 -	787	777.23	4.53E+02	47.07	3.28E+03	1.33
m	36	389.09	767 -	787	781.20	5.63E+02	49.92	3.30E+03	1.33
M	37	402.05	800 -	824	807.12	2.69E+03	70.60	3.74E+03	1.39
m	38	405.23	800 -	824	813.50	1.90E+03	62.88	3.38E+03	1.39
	39	427.35	852 -	867	857.74	8.53E+02	101.75	5.28E+03	1.42
	40	445.10	889 -	899	893.27	2.65E+02	68.94	2.90E+03	1.36
	41	455.08	906 -	918	913.23	2.09E+02	75.15	3.30E+03	1.50
	42	462.20	925 -	937	927.48	1.68E+02	71.97	3.04E+03	1.26
	43	469.88	938 -	948	942.84	1.23E+01	62.41	2.50E+03	0.89
	44	480.64	960 -	971	964.37	-5.38E+01	67.36	2.87E+03	1.15
	45	487.41	971 -	989	977.92	2.31E+02	89.65	4.00E+03	1.30
	46	510.94	1013 -	1035	1024.99	1.39E+03	99.15	3.93E+03	2.61
	47	534.06	1068 -	1076	1071.25	1.41E+02	47.84	1.48E+03	1.27
	48	580.42	1161 -	1167	1164.02	3.88E+02	42.71	1.06E+03	1.34
	49	609.62	1210 -	1229	1222.45	5.09E+04	237.12	2.65E+03	1.51
	50	665.80	1329 -	1343	1334.87	1.63E+03	65.23	1.50E+03	1.63
	51	703.38	1404 -	1416	1410.07	6.01E+02	53.12	1.35E+03	2.36
	52	720.06	1433 -	1448	1443.46	3.08E+02	57.27	1.65E+03	1.29
	53	768.79	1529 -	1546	1540.97	4.87E+03	89.46	1.65E+03	1.61
	54	786.29	1567 -	1586	1576.00	1.08E+03	67.75	1.76E+03	1.79
	55	806.60	1607 -	1623	1616.64	1.15E+03	62.41	1.48E+03	1.67
	56	821.42	1641 -	1651	1646.30	7.04E+01	41.44	1.06E+03	1.15
	57	832.48	1664 -	1673	1668.44	4.85E+02	47.80	1.20E+03	1.36
	58	839.45	1676 -	1690	1682.39	-7.75E+01	58.72	2.01E+03	1.69
	59	934.52	1866 -	1882	1872.67	2.49E+03	72.78	1.52E+03	1.83
	60	964.67	1926 -	1938	1933.02	2.71E+02	44.87	1.06E+03	1.90
	61	1052.71	2101 -	2115	2109.25	1.91E+02	42.36	9.17E+02	1.66
	62	1070.51	2137 -	2159	2144.89	2.16E+02	56.99	1.41E+03	2.08
	63	1120.87	2237 -	2255	2245.70	1.05E+04	112.32	1.09E+03	1.80
	64	1155.83	2309 -	2320	2315.69	1.13E+03	46.86	6.65E+02	1.79
	65	1208.24	2415 -	2429	2420.62	2.90E+02	38.54	6.83E+02	1.74
	66	1238.74	2467 -	2488	2481.68	3.82E+03	76.85	9.92E+02	1.94
	67	1253.82	2506 -	2521	2511.87	2.40E+02	37.65	6.54E+02	2.50
	68	1281.62	2560 -	2574	2567.54	8.65E+02	44.91	6.59E+02	1.96
M	69	1378.33	2751 -	2788	2761.17	2.44E+03	53.84	5.12E+02	2.02
m	70	1385.97	2751 -	2788	2776.46	4.73E+02	28.01	5.04E+02	2.03
M	71	1402.27	2797 -	2831	2809.11	7.61E+02	33.01	5.00E+02	1.97
m	72	1408.64	2797 -	2831	2821.87	1.44E+03	42.63	5.05E+02	1.97
	73	1509.95	3016 -	3030	3024.73	1.20E+03	49.29	7.01E+02	2.08
M	74	1539.31	3078 -	3100	3083.52	2.88E+02	25.83	5.09E+02	1.97
m	75	1543.96	3078 -	3100	3092.84	1.71E+02	21.27	4.98E+02	1.97
	76	1583.92	3167 -	3179	3172.87	3.81E+02	31.88	3.85E+02	1.82
M	77	1595.52	3190 -	3211	3196.11	1.54E+02	19.47	3.60E+02	1.97
m	78	1599.95	3190 -	3211	3204.97	1.46E+02	19.13	3.32E+02	1.98
	79	1661.81	3324 -	3337	3328.85	4.78E+02	29.02	2.14E+02	2.29
	80	1730.35	3457 -	3476	3466.15	1.45E+03	43.78	2.36E+02	1.91
	81	1765.22	3522 -	3546	3535.99	7.60E+03	90.68	2.76E+02	2.22
	82	1839.16	3675 -	3693	3684.08	-5.67E+02	34.46	9.00E+02	3.33
	83	1848.18	3696 -	3707	3702.16	8.97E+02	33.53	1.42E+02	2.01

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 3/30/2016 2:04:39PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	32.17	62 -	72	7.63E+03	140.35	7.79E+03	1.81E+02
	2	36.38	72 -	82	1.56E+03	150.68	1.36E+04	2.39E+02
	3	46.61	89 -	100	1.28E+03	153.17	1.39E+04	2.45E+02
	4	50.27	100 -	106	-2.32E+02	108.75	8.93E+03	1.81E+02
	5	67.76	131 -	142	1.02E+04	214.02	2.22E+04	3.10E+02
M	6	74.91	145 -	186	3.60E+03	109.63	1.64E+04	2.98E+02
m	7	77.17	145 -	186	7.18E+03	213.30	1.59E+04	2.93E+02
m	8	81.13	145 -	186	1.83E+03	60.86	1.49E+04	2.84E+02
m	9	83.89	145 -	186	4.71E+03	141.40	1.41E+04	2.76E+02
m	10	87.37	145 -	186	2.19E+03	70.30	1.32E+04	2.67E+02
m	11	89.90	145 -	186	3.79E+02	29.50	1.25E+04	2.60E+02
M	12	94.76	187 -	206	-2.61E+03	263.82	1.07E+04	2.41E+02
m	13	97.83	187 -	206	-1.30E+02	34.86	9.46E+03	2.26E+02
	14	144.10	282 -	297	6.69E+03	239.92	2.83E+04	3.71E+02
	15	154.31	306 -	316	4.18E+03	185.43	1.95E+04	2.86E+02
	16	186.29	370 -	381	1.08E+04	194.71	1.69E+04	2.71E+02
	17	210.77	421 -	433	1.25E+02	156.52	1.48E+04	2.57E+02
	18	236.15	465 -	481	-6.09E+03	221.35	2.98E+04	3.86E+02
	19	242.14	483 -	496	1.12E+04	202.26	1.75E+04	2.84E+02
M	20	254.04	507 -	530	9.79E+02	65.80	6.38E+03	1.86E+02
m	21	256.35	507 -	530	3.77E+03	90.10	7.03E+03	1.95E+02
m	22	259.15	507 -	530	1.09E+03	65.72	6.82E+03	1.92E+02
M	23	269.61	535 -	557	7.20E+03	106.96	5.43E+03	1.71E+02
m	24	271.38	535 -	557	5.91E+03	99.29	6.01E+03	1.80E+02
m	25	274.76	535 -	557	8.11E+02	58.91	5.81E+03	1.77E+02
	26	283.78	563 -	583	-1.47E+04	212.70	2.92E+04	4.03E+02
M	27	295.38	584 -	618	3.45E+04	209.95	5.01E+03	1.65E+02
m	28	300.15	584 -	618	2.29E+03	71.96	4.59E+03	1.58E+02
m	29	302.85	584 -	618	1.14E+03	58.60	4.32E+03	1.53E+02
	30	324.01	648 -	656	8.85E+02	90.36	5.02E+03	1.40E+02
M	31	330.05	657 -	685	4.48E+02	99.62	4.17E+03	1.50E+02
m	32	334.35	657 -	685	6.01E+01	14.97	3.85E+03	1.44E+02
m	33	338.44	657 -	685	3.93E+02	87.54	3.54E+03	1.38E+02
	34	352.06	696 -	717	6.91E+04	296.71	9.04E+03	2.27E+02
M	35	387.10	767 -	787	4.53E+02	47.07	3.28E+03	1.33E+02

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
m	36	389.09	767 -	787	5.63E+02	49.92	3.30E+03	1.34E+02
M	37	402.05	800 -	824	2.69E+03	70.60	3.74E+03	1.42E+02
m	38	405.23	800 -	824	1.90E+03	62.88	3.38E+03	1.35E+02
	39	427.35	852 -	867	8.53E+02	101.75	5.28E+03	1.60E+02
	40	445.10	889 -	899	2.65E+02	68.94	2.90E+03	1.10E+02
	41	455.08	906 -	918	2.09E+02	75.15	3.30E+03	1.21E+02
	42	462.20	925 -	937	1.68E+02	71.97	3.04E+03	1.16E+02
	43	469.88	938 -	948	1.23E+01	62.41	2.50E+03	1.02E+02
	44	480.64	960 -	971	-5.38E+01	67.36	2.87E+03	1.11E+02
	45	487.41	971 -	989	2.31E+02	89.65	4.00E+03	1.45E+02
	46	510.94	1013 -	1035	1.39E+03	99.15	3.93E+03	1.51E+02
	47	534.06	1068 -	1076	1.41E+02	47.84	1.48E+03	7.62E+01
	48	580.42	1161 -	1167	3.88E+02	42.71	1.06E+03	6.23E+01
	49	609.62	1210 -	1229	5.09E+04	237.12	2.65E+03	1.20E+02
	50	665.80	1329 -	1343	1.63E+03	65.23	1.50E+03	8.44E+01
	51	703.38	1404 -	1416	6.01E+02	53.12	1.35E+03	7.75E+01
	52	720.06	1433 -	1448	3.08E+02	57.27	1.65E+03	8.97E+01
	53	768.79	1529 -	1546	4.87E+03	89.46	1.65E+03	9.21E+01
	54	786.29	1567 -	1586	1.08E+03	67.75	1.76E+03	9.75E+01
	55	806.60	1607 -	1623	1.15E+03	62.41	1.48E+03	8.62E+01
	56	821.42	1641 -	1651	7.04E+01	41.44	1.06E+03	6.68E+01
	57	832.48	1664 -	1673	4.85E+02	47.80	1.20E+03	6.98E+01
	58	839.45	1676 -	1690	-7.75E+01	58.72	2.01E+03	9.77E+01
	59	934.52	1866 -	1882	2.49E+03	72.78	1.52E+03	8.72E+01
	60	964.67	1926 -	1938	2.71E+02	44.87	1.06E+03	6.87E+01
	61	1052.71	2101 -	2115	1.91E+02	42.36	9.17E+02	6.59E+01
	62	1070.51	2137 -	2159	2.16E+02	56.99	1.41E+03	9.06E+01
	63	1120.87	2237 -	2255	1.05E+04	112.32	1.09E+03	7.58E+01
	64	1155.83	2309 -	2320	1.13E+03	46.86	6.65E+02	5.37E+01
	65	1208.24	2415 -	2429	2.90E+02	38.54	6.83E+02	5.69E+01
	66	1238.74	2467 -	2488	3.82E+03	76.85	9.92E+02	7.51E+01
	67	1253.82	2506 -	2521	2.40E+02	37.65	6.54E+02	5.65E+01
	68	1281.62	2560 -	2574	8.65E+02	44.91	6.59E+02	5.58E+01
M	69	1378.33	2751 -	2788	2.44E+03	53.84	5.12E+02	5.26E+01
m	70	1385.97	2751 -	2788	4.73E+02	28.01	5.04E+02	5.22E+01
M	71	1402.27	2797 -	2831	7.61E+02	33.01	5.00E+02	5.20E+01
m	72	1408.64	2797 -	2831	1.44E+03	42.63	5.05E+02	5.23E+01
	73	1509.95	3016 -	3030	1.20E+03	49.29	7.01E+02	5.76E+01
M	74	1539.31	3078 -	3100	2.88E+02	25.83	5.09E+02	5.25E+01
m	75	1543.96	3078 -	3100	1.71E+02	21.27	4.98E+02	5.19E+01
	76	1583.92	3167 -	3179	3.81E+02	31.88	3.85E+02	4.15E+01
M	77	1595.52	3190 -	3211	1.54E+02	19.47	3.60E+02	4.41E+01
m	78	1599.95	3190 -	3211	1.46E+02	19.13	3.32E+02	4.24E+01
	79	1661.81	3324 -	3337	4.78E+02	29.02	2.14E+02	3.14E+01
	80	1730.35	3457 -	3476	1.45E+03	43.78	2.36E+02	3.57E+01
	81	1765.22	3522 -	3546	7.60E+03	90.68	2.76E+02	4.10E+01
	82	1839.16	3675 -	3693	-5.67E+02	34.46	9.00E+02	6.89E+01
	83	1848.18	3696 -	3707	8.97E+02	33.53	1.42E+02	2.48E+01

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 3/30/2016 2:04:39PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB
Peak Match Tolerance : 1.000 keV

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	32.17	62 -	72	67.23	7.63E+03	140.35	7.79E+03	.....
	2	36.38	72 -	82	75.64	1.56E+03	150.68	1.36E+04	I-125
	3	46.61	89 -	100	96.12	1.28E+03	153.17	1.39E+04	PB-210
	4	50.27	100 -	106	103.43	-2.32E+02	108.75	8.93E+03	TH-227
	5	67.76	131 -	142	138.42	1.02E+04	214.02	2.22E+04	CS-136
M	6	74.91	145 -	186	152.71	3.60E+03	109.63	1.64E+04	TH-229 AM-243 PA-233
m	7	77.17	145 -	186	157.23	7.18E+03	213.30	1.59E+04	.....
m	8	81.13	145 -	186	165.16	1.83E+03	60.86	1.49E+04	TH-231 BA-133
m	9	83.89	145 -	186	170.68	4.71E+03	141.40	1.41E+04	TH-231 TH-228 TH-234
m	10	87.37	145 -	186	177.64	2.19E+03	70.30	1.32E+04	PA-233 CD-109 EU-155 NP-237
m	11	89.90	145 -	186	182.71	3.79E+02	29.50	1.25E+04	TH-231
M	12	94.76	187 -	206	192.43	-2.61E+03	263.82	1.07E+04	NP-237 TH-227
m	13	97.83	187 -	206	198.56	-1.30E+02	34.86	9.46E+03	GD-153 U-233
	14	144.10	282 -	297	291.11	6.69E+03	239.92	2.83E+04	RA-223 U-235 NP-237
	15	154.31	306 -	316	311.52	4.18E+03	185.43	1.95E+04	TH-229 RA-223 AC-228
	16	186.29	370 -	381	375.51	1.08E+04	194.71	1.69E+04	PA-234 RA-226 U-235
	17	210.77	421 -	433	424.47	1.25E+02	156.52	1.48E+04	TH-229 TH-227
	18	236.15	465 -	481	475.25	-6.09E+03	221.35	2.98E+04	TH-227

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
									NB-95m
	19	242.14	483 -	496	487.21	1.12E+04	202.26	1.75E+04	PB-214
M	20	254.04	507 -	530	511.02	9.79E+02	65.80	6.38E+03	.....
m	21	256.35	507 -	530	515.65	3.77E+03	90.10	7.03E+03	TH-227
m	22	259.15	507 -	530	521.26	1.09E+03	65.72	6.82E+03	PB-214
M	23	269.61	535 -	557	542.17	7.20E+03	106.96	5.43E+03	RA-223
									AC-228
m	24	271.38	535 -	557	545.71	5.91E+03	99.29	6.01E+03	PA-233
									RN-219
									PA-234
m	25	274.76	535 -	557	552.47	8.11E+02	58.91	5.81E+03	.....
	26	283.78	563 -	583	570.53	-1.47E+04	212.70	2.92E+04	PA-231
									I-131
M	27	295.38	584 -	618	593.72	3.45E+04	209.95	5.01E+03	PB-214
									EU-152
									IR-192
m	28	300.15	584 -	618	603.27	2.29E+03	71.96	4.59E+03	PB-212
									PA-231
									TH-227
									PA-233
m	29	302.85	584 -	618	608.66	1.14E+03	58.60	4.32E+03	BA-133
									PA-231
	30	324.01	648 -	656	651.01	8.85E+02	90.36	5.02E+03	RA-223
M	31	330.05	657 -	685	663.09	4.48E+02	99.62	4.17E+03	PA-231
									TH-227
									PA-234
m	32	334.35	657 -	685	671.69	6.01E+01	14.97	3.85E+03	TH-227
									NP-239
m	33	338.44	657 -	685	679.87	3.93E+02	87.54	3.54E+03	AC-228
									RA-223
	34	352.06	696 -	717	707.12	6.91E+04	296.71	9.04E+03	PB-214
M	35	387.10	767 -	787	777.23	4.53E+02	47.07	3.28E+03	.....
m	36	389.09	767 -	787	781.20	5.63E+02	49.92	3.30E+03	I-126
M	37	402.05	800 -	824	807.12	2.69E+03	70.60	3.74E+03	RN-219
									KR-87
m	38	405.23	800 -	824	813.50	1.90E+03	62.88	3.38E+03	I-134
									PB-211
	39	427.35	852 -	867	857.74	8.53E+02	101.75	5.28E+03	PB-211
									SB-125
	40	445.10	889 -	899	893.27	2.65E+02	68.94	2.90E+03	EU-154
	41	455.08	906 -	918	913.23	2.09E+02	75.15	3.30E+03	.....
	42	462.20	925 -	937	927.48	1.68E+02	71.97	3.04E+03	CS-138
									AC-228
	43	469.88	938 -	948	942.84	1.23E+01	62.41	2.50E+03	.....
	44	480.64	960 -	971	964.37	-5.38E+01	67.36	2.87E+03	.....
	45	487.41	971 -	989	977.92	2.31E+02	89.65	4.00E+03	LA-140
	46	510.94	1013 -	1035	1024.99	1.39E+03	99.15	3.93E+03	TL-208
	47	534.06	1068 -	1076	1071.25	1.41E+02	47.84	1.48E+03	.....
	48	580.42	1161 -	1167	1164.02	3.88E+02	42.71	1.06E+03	.....
	49	609.62	1210 -	1229	1222.45	5.09E+04	237.12	2.65E+03	BI-214
									RU-103
	50	665.80	1329 -	1343	1334.87	1.63E+03	65.23	1.50E+03	BI-214
									SB-126
									PA-234

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	51	703.38	1404 -	1416	1410.07	6.01E+02	53.12	1.35E+03	NB-94x
	52	720.06	1433 -	1448	1443.46	3.08E+02	57.27	1.65E+03	SB-126
	53	768.79	1529 -	1546	1540.97	4.87E+03	89.46	1.65E+03	BI-214
	54	786.29	1567 -	1586	1576.00	1.08E+03	67.75	1.76E+03	PA-234
									PB-214
									CS-135
									BI-212
	55	806.60	1607 -	1623	1616.64	1.15E+03	62.41	1.48E+03	BI-214
	56	821.42	1641 -	1651	1646.30	7.04E+01	41.44	1.06E+03	.....
	57	832.48	1664 -	1673	1668.44	4.85E+02	47.80	1.20E+03	PB-211
									PA-234
	58	839.45	1676 -	1690	1682.39	-7.75E+01	58.72	2.01E+03	PB-214
									AC-228
	59	934.52	1866 -	1882	1872.67	2.49E+03	72.78	1.52E+03	BI-214
	60	964.67	1926 -	1938	1933.02	2.71E+02	44.87	1.06E+03	AC-228
									EU-152
	61	1052.71	2101 -	2115	2109.25	1.91E+02	42.36	9.17E+02	.....
	62	1070.51	2137 -	2159	2144.89	2.16E+02	56.99	1.41E+03	.....
	63	1120.87	2237 -	2255	2245.70	1.05E+04	112.32	1.09E+03	BI-214
	64	1155.83	2309 -	2320	2315.69	1.13E+03	46.86	6.65E+02	BI-214
	65	1208.24	2415 -	2429	2420.62	2.90E+02	38.54	6.83E+02	BI-214
	66	1238.74	2467 -	2488	2481.68	3.82E+03	76.85	9.92E+02	CO-56
									BI-214
	67	1253.82	2506 -	2521	2511.87	2.40E+02	37.65	6.54E+02	.....
	68	1281.62	2560 -	2574	2567.54	8.65E+02	44.91	6.59E+02	BI-214
M	69	1378.33	2751 -	2788	2761.17	2.44E+03	53.84	5.12E+02	BI-214
m	70	1385.97	2751 -	2788	2776.46	4.73E+02	28.01	5.04E+02	BI-214
M	71	1402.27	2797 -	2831	2809.11	7.61E+02	33.01	5.00E+02	BI-214
m	72	1408.64	2797 -	2831	2821.87	1.44E+03	42.63	5.05E+02	EU-152
									BI-214
	73	1509.95	3016 -	3030	3024.73	1.20E+03	49.29	7.01E+02	I-124
									BI-214
M	74	1539.31	3078 -	3100	3083.52	2.88E+02	25.83	5.09E+02	.....
m	75	1543.96	3078 -	3100	3092.84	1.71E+02	21.27	4.98E+02	.....
	76	1583.92	3167 -	3179	3172.87	3.81E+02	31.88	3.85E+02	BI-214
M	77	1595.52	3190 -	3211	3196.11	1.54E+02	19.47	3.60E+02	LA-140
									EU-154
m	78	1599.95	3190 -	3211	3204.97	1.46E+02	19.13	3.32E+02	.....
	79	1661.81	3324 -	3337	3328.85	4.78E+02	29.02	2.14E+02	BI-214
	80	1730.35	3457 -	3476	3466.15	1.45E+03	43.78	2.36E+02	BI-214
	81	1765.22	3522 -	3546	3535.99	7.60E+03	90.68	2.76E+02	BI-214
	82	1839.16	3675 -	3693	3684.08	-5.67E+02	34.46	9.00E+02	.....
	83	1848.18	3696 -	3707	3702.16	8.97E+02	33.53	1.42E+02	BI-214

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 3/30/2016 2:04:39PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	32.17	7.63E+03	140.35	3.72E-03	2.28E-04
	2	36.38	1.56E+03	150.68	4.40E-03	2.28E-04
	3	46.61	1.28E+03	153.17	5.69E-03	2.28E-04
	4	50.27	-2.32E+02	108.75	6.03E-03	2.28E-04
	5	67.76	1.02E+04	214.02	7.01E-03	2.87E-04
M	6	74.91	3.60E+03	109.63	7.19E-03	3.39E-04
m	7	77.17	7.18E+03	213.30	7.23E-03	3.56E-04
m	8	81.13	1.83E+03	60.86	7.27E-03	3.84E-04
m	9	83.89	4.71E+03	141.40	7.29E-03	4.04E-04
m	10	87.37	2.19E+03	70.30	7.31E-03	4.29E-04
m	11	89.90	3.79E+02	29.50	7.31E-03	4.32E-04
M	12	94.76	-2.61E+03	263.82	7.29E-03	4.25E-04
m	13	97.83	-1.30E+02	34.86	7.28E-03	4.22E-04
	14	144.10	6.69E+03	239.92	6.61E-03	3.59E-04
	15	154.31	4.18E+03	185.43	6.42E-03	3.44E-04
	16	186.29	1.08E+04	194.71	5.86E-03	3.19E-04
	17	210.77	1.25E+02	156.52	5.46E-03	3.09E-04
	18	236.15	-6.09E+03	221.35	5.09E-03	2.99E-04
	19	242.14	1.12E+04	202.26	5.00E-03	2.97E-04
M	20	254.04	9.79E+02	65.80	4.85E-03	2.92E-04
m	21	256.35	3.77E+03	90.10	4.82E-03	2.91E-04
m	22	259.15	1.09E+03	65.72	4.78E-03	2.90E-04
M	23	269.61	7.20E+03	106.96	4.66E-03	2.86E-04
m	24	271.38	5.91E+03	99.29	4.63E-03	2.85E-04
m	25	274.76	8.11E+02	58.91	4.59E-03	2.84E-04
	26	283.78	-1.47E+04	212.70	4.49E-03	2.80E-04
M	27	295.38	3.45E+04	209.95	4.37E-03	2.75E-04
m	28	300.15	2.29E+03	71.96	4.32E-03	2.74E-04
m	29	302.85	1.14E+03	58.60	4.29E-03	2.72E-04
	30	324.01	8.85E+02	90.36	4.08E-03	2.64E-04
M	31	330.05	4.48E+02	99.62	4.03E-03	2.62E-04
m	32	334.35	6.01E+01	14.97	3.99E-03	2.60E-04
m	33	338.44	3.93E+02	87.54	3.95E-03	2.58E-04
	34	352.06	6.91E+04	296.71	3.84E-03	2.53E-04
M	35	387.10	4.53E+02	47.07	3.57E-03	2.39E-04
m	36	389.09	5.63E+02	49.92	3.56E-03	2.38E-04
M	37	402.05	2.69E+03	70.60	3.47E-03	2.31E-04
m	38	405.23	1.90E+03	62.88	3.45E-03	2.29E-04
	39	427.35	8.53E+02	101.75	3.31E-03	2.15E-04
	40	445.10	2.65E+02	68.94	3.20E-03	2.05E-04
	41	455.08	2.09E+02	75.15	3.15E-03	1.99E-04
	42	462.20	1.68E+02	71.97	3.11E-03	1.94E-04
	43	469.88	1.23E+01	62.41	3.07E-03	1.90E-04
	44	480.64	-5.38E+01	67.36	3.01E-03	1.83E-04
	45	487.41	2.31E+02	89.65	2.98E-03	1.79E-04
	46	510.94	1.39E+03	99.15	2.87E-03	1.65E-04
	47	534.06	1.41E+02	47.84	2.77E-03	1.51E-04

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	48	580.42	3.88E+02	42.71	2.59E-03	1.23E-04
	49	609.62	5.09E+04	237.12	2.49E-03	1.05E-04
	50	665.80	1.63E+03	65.23	2.32E-03	7.49E-05
	51	703.38	6.01E+02	53.12	2.22E-03	8.30E-05
	52	720.06	3.08E+02	57.27	2.17E-03	8.66E-05
	53	768.79	4.87E+03	89.46	2.06E-03	9.70E-05
	54	786.29	1.08E+03	67.75	2.02E-03	1.01E-04
	55	806.60	1.15E+03	62.41	1.98E-03	1.05E-04
	56	821.42	7.04E+01	41.44	1.95E-03	1.08E-04
	57	832.48	4.85E+02	47.80	1.93E-03	1.11E-04
	58	839.45	-7.75E+01	58.72	1.92E-03	1.12E-04
	59	934.52	2.49E+03	72.78	1.76E-03	1.14E-04
	60	964.67	2.71E+02	44.87	1.72E-03	1.05E-04
	61	1052.71	1.91E+02	42.36	1.60E-03	7.95E-05
	62	1070.51	2.16E+02	56.99	1.58E-03	7.43E-05
	63	1120.87	1.05E+04	112.32	1.52E-03	5.96E-05
	64	1155.83	1.13E+03	46.86	1.49E-03	4.94E-05
	65	1208.24	2.90E+02	38.54	1.44E-03	4.33E-05
	66	1238.74	3.82E+03	76.85	1.41E-03	4.25E-05
	67	1253.82	2.40E+02	37.65	1.39E-03	4.21E-05
	68	1281.62	8.65E+02	44.91	1.37E-03	4.13E-05
M	69	1378.33	2.44E+03	53.84	1.29E-03	3.94E-05
m	70	1385.97	4.73E+02	28.01	1.29E-03	3.93E-05
M	71	1402.27	7.61E+02	33.01	1.28E-03	3.91E-05
m	72	1408.64	1.44E+03	42.63	1.27E-03	3.90E-05
	73	1509.95	1.20E+03	49.29	1.21E-03	3.78E-05
M	74	1539.31	2.88E+02	25.83	1.19E-03	3.74E-05
m	75	1543.96	1.71E+02	21.27	1.19E-03	3.74E-05
	76	1583.92	3.81E+02	31.88	1.16E-03	3.69E-05
M	77	1595.52	1.54E+02	19.47	1.16E-03	3.67E-05
m	78	1599.95	1.46E+02	19.13	1.15E-03	3.67E-05
	79	1661.81	4.78E+02	29.02	1.12E-03	3.59E-05
	80	1730.35	1.45E+03	43.78	1.09E-03	3.51E-05
	81	1765.22	7.60E+03	90.68	1.07E-03	3.47E-05
	82	1839.16	-5.67E+02	34.46	1.04E-03	3.38E-05
	83	1848.18	8.97E+02	33.53	1.03E-03	3.38E-05

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 3/30/2016 2:04:39PM

Env. Background File : \\NHHJ-6\ApexRoot\Default\Data\0000006791.CNF

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	32.17	7.63E+03	140.35			7.63E+03	1.40E+02
	2	36.38	1.56E+03	150.68			1.56E+03	1.51E+02
	3	46.61	1.28E+03	153.17	2.73E+01	2.86E+00	1.25E+03	1.53E+02
	4	50.27	-2.32E+02	108.75			-2.32E+02	1.09E+02
	5	67.76	1.02E+04	214.02			1.02E+04	2.14E+02
M	6	74.91	3.60E+03	109.63			3.60E+03	1.10E+02
m	7	77.17	7.18E+03	213.30			7.18E+03	2.13E+02
m	8	81.13	1.83E+03	60.86			1.83E+03	6.09E+01
m	9	83.89	4.71E+03	141.40			4.71E+03	1.41E+02
m	10	87.37	2.19E+03	70.30			2.19E+03	7.03E+01
m	11	89.90	3.79E+02	29.50			3.79E+02	2.95E+01
M	12	94.76	-2.61E+03	263.82			-2.61E+03	2.64E+02
m	13	97.83	-1.30E+02	34.86			-1.30E+02	3.49E+01
	14	144.10	6.69E+03	239.92			6.69E+03	2.40E+02
	15	154.31	4.18E+03	185.43			4.18E+03	1.85E+02
	16	186.29	1.08E+04	194.71	2.96E+01	3.21E+00	1.08E+04	1.95E+02
	17	210.77	1.25E+02	156.52			1.25E+02	1.57E+02
	18	236.15	-6.09E+03	221.35			-6.09E+03	2.21E+02
	19	242.14	1.12E+04	202.26			1.12E+04	2.02E+02
M	20	254.04	9.79E+02	65.80			9.79E+02	6.58E+01
m	21	256.35	3.77E+03	90.10			3.77E+03	9.01E+01
m	22	259.15	1.09E+03	65.72			1.09E+03	6.57E+01
M	23	269.61	7.20E+03	106.96			7.20E+03	1.07E+02
m	24	271.38	5.91E+03	99.29			5.91E+03	9.93E+01
m	25	274.76	8.11E+02	58.91			8.11E+02	5.89E+01
	26	283.78	-1.47E+04	212.70			-1.47E+04	2.13E+02
M	27	295.38	3.45E+04	209.95			3.45E+04	2.10E+02
m	28	300.15	2.29E+03	71.96			2.29E+03	7.20E+01
m	29	302.85	1.14E+03	58.60			1.14E+03	5.86E+01
	30	324.01	8.85E+02	90.36			8.85E+02	9.04E+01
M	31	330.05	4.48E+02	99.62			4.48E+02	9.96E+01
m	32	334.35	6.01E+01	14.97			6.01E+01	1.50E+01
m	33	338.44	3.93E+02	87.54			3.93E+02	8.75E+01
	34	352.06	6.91E+04	296.71			6.91E+04	2.97E+02
M	35	387.10	4.53E+02	47.07			4.53E+02	4.71E+01
m	36	389.09	5.63E+02	49.92			5.63E+02	4.99E+01
M	37	402.05	2.69E+03	70.60			2.69E+03	7.06E+01
m	38	405.23	1.90E+03	62.88			1.90E+03	6.29E+01
	39	427.35	8.53E+02	101.75			8.53E+02	1.02E+02
	40	445.10	2.65E+02	68.94			2.65E+02	6.89E+01
	41	455.08	2.09E+02	75.15			2.09E+02	7.51E+01
	42	462.20	1.68E+02	71.97			1.68E+02	7.20E+01
	43	469.88	1.23E+01	62.41			1.23E+01	6.24E+01
	44	480.64	-5.38E+01	67.36			-5.38E+01	6.74E+01
	45	487.41	2.31E+02	89.65			2.31E+02	8.97E+01
	46	510.94	1.39E+03	99.15	7.31E+01	3.34E+00	1.32E+03	9.92E+01
	47	534.06	1.41E+02	47.84			1.41E+02	4.78E+01
	48	580.42	3.88E+02	42.71			3.88E+02	4.27E+01
	49	609.62	5.09E+04	237.12			5.09E+04	2.37E+02
	50	665.80	1.63E+03	65.23			1.63E+03	6.52E+01
	51	703.38	6.01E+02	53.12			6.01E+02	5.31E+01
	52	720.06	3.08E+02	57.27			3.08E+02	5.73E+01
	53	768.79	4.87E+03	89.46			4.87E+03	8.95E+01
	54	786.29	1.08E+03	67.75			1.08E+03	6.77E+01

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	55	806.60	1.15E+03	62.41			1.15E+03	6.24E+01
	56	821.42	7.04E+01	41.44			7.04E+01	4.14E+01
	57	832.48	4.85E+02	47.80			4.85E+02	4.78E+01
	58	839.45	-7.75E+01	58.72			-7.75E+01	5.87E+01
	59	934.52	2.49E+03	72.78			2.49E+03	7.28E+01
	60	964.67	2.71E+02	44.87			2.71E+02	4.49E+01
	61	1052.71	1.91E+02	42.36			1.91E+02	4.24E+01
	62	1070.51	2.16E+02	56.99			2.16E+02	5.70E+01
	63	1120.87	1.05E+04	112.32			1.05E+04	1.12E+02
	64	1155.83	1.13E+03	46.86			1.13E+03	4.69E+01
	65	1208.24	2.90E+02	38.54			2.90E+02	3.85E+01
	66	1238.74	3.82E+03	76.85			3.82E+03	7.69E+01
	67	1253.82	2.40E+02	37.65			2.40E+02	3.76E+01
	68	1281.62	8.65E+02	44.91			8.65E+02	4.49E+01
M	69	1378.33	2.44E+03	53.84			2.44E+03	5.38E+01
m	70	1385.97	4.73E+02	28.01			4.73E+02	2.80E+01
M	71	1402.27	7.61E+02	33.01			7.61E+02	3.30E+01
m	72	1408.64	1.44E+03	42.63			1.44E+03	4.26E+01
	73	1509.95	1.20E+03	49.29			1.20E+03	4.93E+01
M	74	1539.31	2.88E+02	25.83			2.88E+02	2.58E+01
m	75	1543.96	1.71E+02	21.27			1.71E+02	2.13E+01
	76	1583.92	3.81E+02	31.88			3.81E+02	3.19E+01
M	77	1595.52	1.54E+02	19.47			1.54E+02	1.95E+01
m	78	1599.95	1.46E+02	19.13			1.46E+02	1.91E+01
	79	1661.81	4.78E+02	29.02			4.78E+02	2.90E+01
	80	1730.35	1.45E+03	43.78			1.45E+03	4.38E+01
	81	1765.22	7.60E+03	90.68			7.60E+03	9.07E+01
	82	1839.16	-5.67E+02	34.46			-5.67E+02	3.45E+01
	83	1848.18	8.97E+02	33.53			8.97E+02	3.35E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 3/30/2016 2:04:39PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\NHHJ-6\ApexRoot\Default\Data\0000006791.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
1	32.17	7.63E+03	140.35			7.63E+03	1.40E+02

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	2	36.38	1.56E+03	150.68			1.56E+03	1.51E+02
	3	46.61	1.28E+03	153.17	2.73E+01	2.86E+00	1.25E+03	1.53E+02
	4	50.27	-2.32E+02	108.75			-2.32E+02	1.09E+02
	5	67.76	1.02E+04	214.02			1.02E+04	2.14E+02
M	6	74.91	3.60E+03	109.63			3.60E+03	1.10E+02
m	7	77.17	7.18E+03	213.30			7.18E+03	2.13E+02
m	8	81.13	1.83E+03	60.86			1.83E+03	6.09E+01
m	9	83.89	4.71E+03	141.40			4.71E+03	1.41E+02
m	10	87.37	2.19E+03	70.30			2.19E+03	7.03E+01
m	11	89.90	3.79E+02	29.50			3.79E+02	2.95E+01
M	12	94.76	-2.61E+03	263.82			-2.61E+03	2.64E+02
m	13	97.83	-1.30E+02	34.86			-1.30E+02	3.49E+01
	14	144.10	6.69E+03	239.92			6.69E+03	2.40E+02
	15	154.31	4.18E+03	185.43			4.18E+03	1.85E+02
	16	186.29	1.08E+04	194.71	2.96E+01	3.21E+00	1.08E+04	1.95E+02
	17	210.77	1.25E+02	156.52			1.25E+02	1.57E+02
	18	236.15	-6.09E+03	221.35			-6.09E+03	2.21E+02
	19	242.14	1.12E+04	202.26			1.12E+04	2.02E+02
M	20	254.04	9.79E+02	65.80			9.79E+02	6.58E+01
m	21	256.35	3.77E+03	90.10			3.77E+03	9.01E+01
m	22	259.15	1.09E+03	65.72			1.09E+03	6.57E+01
M	23	269.61	7.20E+03	106.96			7.20E+03	1.07E+02
m	24	271.38	5.91E+03	99.29			5.91E+03	9.93E+01
m	25	274.76	8.11E+02	58.91			8.11E+02	5.89E+01
	26	283.78	-1.47E+04	212.70			-1.47E+04	2.13E+02
M	27	295.38	3.45E+04	209.95			3.45E+04	2.10E+02
m	28	300.15	2.29E+03	71.96			2.29E+03	7.20E+01
m	29	302.85	1.14E+03	58.60			1.14E+03	5.86E+01
	30	324.01	8.85E+02	90.36			8.85E+02	9.04E+01
M	31	330.05	4.48E+02	99.62			4.48E+02	9.96E+01
m	32	334.35	6.01E+01	14.97			6.01E+01	1.50E+01
m	33	338.44	3.93E+02	87.54			3.93E+02	8.75E+01
	34	352.06	6.91E+04	296.71			6.91E+04	2.97E+02
M	35	387.10	4.53E+02	47.07			4.53E+02	4.71E+01
m	36	389.09	5.63E+02	49.92			5.63E+02	4.99E+01
M	37	402.05	2.69E+03	70.60			2.69E+03	7.06E+01
m	38	405.23	1.90E+03	62.88			1.90E+03	6.29E+01
	39	427.35	8.53E+02	101.75			8.53E+02	1.02E+02
	40	445.10	2.65E+02	68.94			2.65E+02	6.89E+01
	41	455.08	2.09E+02	75.15			2.09E+02	7.51E+01
	42	462.20	1.68E+02	71.97			1.68E+02	7.20E+01
	43	469.88	1.23E+01	62.41			1.23E+01	6.24E+01
	44	480.64	-5.38E+01	67.36			-5.38E+01	6.74E+01
	45	487.41	2.31E+02	89.65			2.31E+02	8.97E+01
	46	510.94	1.39E+03	99.15	7.31E+01	3.34E+00	1.32E+03	9.92E+01
	47	534.06	1.41E+02	47.84			1.41E+02	4.78E+01
	48	580.42	3.88E+02	42.71			3.88E+02	4.27E+01
	49	609.62	5.09E+04	237.12			5.09E+04	2.37E+02
	50	665.80	1.63E+03	65.23			1.63E+03	6.52E+01
	51	703.38	6.01E+02	53.12			6.01E+02	5.31E+01
	52	720.06	3.08E+02	57.27			3.08E+02	5.73E+01
	53	768.79	4.87E+03	89.46			4.87E+03	8.95E+01
	54	786.29	1.08E+03	67.75			1.08E+03	6.77E+01
	55	806.60	1.15E+03	62.41			1.15E+03	6.24E+01

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	56	821.42	7.04E+01	41.44			7.04E+01	4.14E+01
	57	832.48	4.85E+02	47.80			4.85E+02	4.78E+01
	58	839.45	-7.75E+01	58.72			-7.75E+01	5.87E+01
	59	934.52	2.49E+03	72.78			2.49E+03	7.28E+01
	60	964.67	2.71E+02	44.87			2.71E+02	4.49E+01
	61	1052.71	1.91E+02	42.36			1.91E+02	4.24E+01
	62	1070.51	2.16E+02	56.99			2.16E+02	5.70E+01
	63	1120.87	1.05E+04	112.32			1.05E+04	1.12E+02
	64	1155.83	1.13E+03	46.86			1.13E+03	4.69E+01
	65	1208.24	2.90E+02	38.54			2.90E+02	3.85E+01
	66	1238.74	3.82E+03	76.85			3.82E+03	7.69E+01
	67	1253.82	2.40E+02	37.65			2.40E+02	3.76E+01
	68	1281.62	8.65E+02	44.91			8.65E+02	4.49E+01
M	69	1378.33	2.44E+03	53.84			2.44E+03	5.38E+01
m	70	1385.97	4.73E+02	28.01			4.73E+02	2.80E+01
M	71	1402.27	7.61E+02	33.01			7.61E+02	3.30E+01
m	72	1408.64	1.44E+03	42.63			1.44E+03	4.26E+01
	73	1509.95	1.20E+03	49.29			1.20E+03	4.93E+01
M	74	1539.31	2.88E+02	25.83			2.88E+02	2.58E+01
m	75	1543.96	1.71E+02	21.27			1.71E+02	2.13E+01
	76	1583.92	3.81E+02	31.88			3.81E+02	3.19E+01
M	77	1595.52	1.54E+02	19.47			1.54E+02	1.95E+01
m	78	1599.95	1.46E+02	19.13			1.46E+02	1.91E+01
	79	1661.81	4.78E+02	29.02			4.78E+02	2.90E+01
	80	1730.35	1.45E+03	43.78			1.45E+03	4.38E+01
	81	1765.22	7.60E+03	90.68			7.60E+03	9.07E+01
	82	1839.16	-5.67E+02	34.46			-5.67E+02	3.45E+01
	83	1848.18	8.97E+02	33.53			8.97E+02	3.35E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
SB-125	0.490	176.31		6.82		
		380.45		1.52		
		427.88	*	29.60	3.06E+01	4.26E+00
		463.36		10.49		
		600.60		17.86		

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
SB-125	0.490	606.72		5.03		
		635.95		11.31		
		671.45		1.80		
I-126	0.885	388.63	*	34.10	2.91E+02	3.31E+01
BA-133	0.350	53.16		2.20		
		79.62		2.62		
		81.00	*	34.06	2.52E+01	1.59E+00
		160.61		0.64		
		223.23		0.45		
		276.40		7.16		
		302.85	*	18.33	4.95E+01	4.05E+00
		356.02		62.05		
		383.85		8.94		
GD-153	0.986	69.67		2.54		
		97.43	*	30.20	-2.33E+00	6.42E-01
		103.18		21.44		
PB-210	0.999	46.54	*	4.25	1.75E+02	2.80E+01
PB-211	0.977	404.85	*	3.78	4.93E+02	3.71E+01
		427.09	*	1.76	4.95E+02	6.82E+01
		704.64		0.46		
		766.51		0.62		
		832.01	*	3.52	2.41E+02	2.77E+01
BI-214	0.950	609.31	*	44.80	1.54E+03	6.80E+01
		665.45	*	1.29	1.84E+03	1.04E+02
		768.36	*	4.80	1.66E+03	8.74E+01
		806.17	*	1.22	1.61E+03	1.28E+02
		934.06	*	3.03	1.58E+03	1.15E+02
		1120.29	*	14.80	1.57E+03	6.72E+01
		1155.19	*	1.64	1.57E+03	9.16E+01
		1207.68	*	0.49	1.39E+03	2.37E+02
		1238.11	*	5.86	1.57E+03	6.07E+01
		1280.96	*	1.44	1.48E+03	9.41E+01
		1377.67	*	3.92	1.63E+03	6.95E+01
		1385.31	*	0.89	1.39E+03	1.69E+02
		1401.50	*	1.55	1.30E+03	1.58E+02
		1407.98	*	2.80	1.36E+03	2.03E+02
		1415.80		0.48		
		1509.23	*	2.12	1.59E+03	8.73E+01
		1583.22	*	0.70	1.58E+03	1.44E+02
		1661.28	*	1.14	1.26E+03	9.30E+01
		1729.59	*	2.88	1.56E+03	7.64E+01
		1764.49	*	15.36	1.56E+03	5.77E+01
		1847.42	*	2.04	1.44E+03	7.69E+01
PB-214	0.962	53.23		1.11		
		241.98	*	7.50	1.01E+03	6.39E+01
		258.79	*	0.55	1.40E+03	1.75E+02
		295.21	*	18.50	1.44E+03	9.44E+01
		351.92	*	35.80	1.70E+03	1.15E+02
		785.91	*	0.85	2.11E+03	3.01E+02
		839.03	*	0.63	-2.16E+02	1.65E+02
RN-219	0.995	130.59		0.12		
		271.23	*	10.80	3.99E+02	2.81E+01
		401.81	*	6.37	4.11E+02	2.94E+01

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
RA-223	0.871	122.32		1.19		
		144.23	*	3.22	1.06E+03	7.28E+01
		154.21	*	5.62	3.91E+02	2.89E+01
		158.63		0.69		
		179.54		0.15		
		269.46	*	13.70	3.81E+02	2.52E+01
		288.18		0.16		
		323.87	*	3.93	1.86E+02	2.28E+01
		328.40		0.21		
		338.28	*	2.79	1.20E+02	2.80E+01
		342.90		0.22		
		346.80		0.18		
		371.68		0.48		
TH-227	0.993	50.13	*	8.00	-1.62E+01	7.68E+00
		79.72		1.89		
		93.93	*	1.37	-8.83E+02	1.25E+02
		210.65	*	1.10	7.02E+01	8.92E+01
		235.97	*	12.70	-3.19E+02	3.34E+01
		256.25	*	7.01	3.77E+02	3.15E+01
		286.12		1.54		
		300.00	*	2.67	6.70E+02	7.28E+01
		304.51		1.23		
		329.85	*	2.69	1.40E+02	3.53E+01
		334.38	*	1.05	4.85E+01	1.33E+01
TH-228	0.722	84.37	*	1.23	1.77E+03	1.15E+02
		215.99		0.26		
PA-231	0.998	283.69	*	1.70	-6.50E+03	5.65E+02
		300.07	*	2.46	7.27E+02	5.55E+01
		302.65	*	2.20	4.09E+02	6.02E+01
		330.06	*	1.40	2.68E+02	7.30E+01
TH-231	0.987	81.23	*	0.89	9.56E+02	8.03E+01
		84.21	*	6.60	3.30E+02	2.57E+01
		89.95	*	0.94	1.86E+02	2.18E+01
U-233	0.988	42.44		0.09		
		54.70		0.02		
		97.13	*	0.02	-3.01E+03	9.42E+02
U-235	0.731	109.16		1.54		
		143.76	*	10.96	3.12E+02	2.04E+01
		163.36		5.08		
		185.71	*	57.20	1.09E+02	6.32E+00
		194.94		0.63		
		202.11		1.08		
		205.31		5.01		
NP-237	0.889	57.10		0.39		
		86.48	*	12.40	8.17E+01	6.08E+00
		94.64	*	0.60	-2.02E+03	7.12E+02
		143.25	*	0.43	7.95E+03	6.36E+02
AM-243	0.990	74.66	*	68.20	2.48E+01	1.48E+00

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

* = Energy line found in the spectrum.
- = Manually added nuclide.
? = Manually edited nuclide.
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 3/30/2016 2:04:39PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.17	2.11907E+00	1.84		
	2	36.38	4.34194E-01	9.64	Tol.	I-125
	5	67.76	2.83539E+00	2.10		
m	7	77.17	1.99451E+00	2.97		
M	20	254.04	2.72075E-01	6.72		
m	25	274.76	2.25196E-01	7.27		
M	35	387.10	1.25945E-01	10.38	D-Esc	
	40	445.10	7.35556E-02	26.03	Sum	
	41	455.08	5.80139E-02	35.98	Sum	
	42	462.20	4.65417E-02	42.95	Tol.	AC-228
	43	469.88	3.41668E-03	507.37	Sum	
	44	480.64	-1.49445E-02	- 125.2	Sum	
	45	487.41	6.40833E-02	38.86	D-Esc	
	46	510.94	3.65507E-01	7.54	Sum	
	47	534.06	3.91806E-02	33.92	Sum	
	48	580.42	1.07875E-01	11.00	Sum	
	51	703.38	1.66903E-01	8.84	Sum	
	52	720.06	8.55000E-02	18.61	Sum	
	56	821.42	1.95556E-02	58.87		
	60	964.67	7.53889E-02	16.53	Tol.	AC-228
	61	1052.71	5.29167E-02	22.24	Sum	
	62	1070.51	6.00278E-02	26.37	Sum	
	67	1253.82	6.65556E-02	15.71	S-Esc	
M	74	1539.31	8.01183E-02	8.95	Sum	
m	75	1543.96	4.75638E-02	12.42	Sum	
M	77	1595.52	4.26421E-02	12.68	Sum	
m	78	1599.95	4.06214E-02	13.08	Sum	
	82	1839.16	-1.57403E-01	- 6.0	Sum	

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
SB-125	0.49	176.31		6.82		
		380.45		1.52		
		427.88	*	29.60	3.06E+01	4.26E+00
		463.36		10.49		
		600.60		17.86		
		606.72		5.03		
		635.95		11.31		
		671.45		1.80		
I-126	0.88	388.63	*	34.10	2.91E+02	3.31E+01
BA-133	0.35	53.16		2.20		
		79.62		2.62		
		81.00	*	34.06	2.52E+01	1.59E+00
		160.61		0.64		
		223.23		0.45		
		276.40		7.16		
		302.85	*	18.33	4.95E+01	4.05E+00
		356.02		62.05		
		383.85		8.94		
GD-153	0.98	69.67		2.54		
		97.43	*	30.20	-2.33E+00	6.42E-01
		103.18		21.44		
PB-210	0.99	46.54	*	4.25	1.75E+02	2.80E+01
PB-211	0.97	404.85	*	3.78	4.93E+02	3.71E+01
		427.09	*	1.76	4.95E+02	6.82E+01
		704.64		0.46		
		766.51		0.62		
		832.01	*	3.52	2.41E+02	2.77E+01
BI-214	0.95	609.31	*	44.80	1.54E+03	6.80E+01
		665.45	*	1.29	1.84E+03	1.04E+02
		768.36	*	4.80	1.66E+03	8.74E+01
		806.17	*	1.22	1.61E+03	1.28E+02
		934.06	*	3.03	1.58E+03	1.15E+02
		1120.29	*	14.80	1.57E+03	6.72E+01
		1155.19	*	1.64	1.57E+03	9.16E+01
		1207.68	*	0.49	1.39E+03	2.37E+02
		1238.11	*	5.86	1.57E+03	6.07E+01
		1280.96	*	1.44	1.48E+03	9.41E+01
		1377.67	*	3.92	1.63E+03	6.95E+01
		1385.31	*	0.89	1.39E+03	1.69E+02
		1401.50	*	1.55	1.30E+03	1.58E+02
		1407.98	*	2.80	1.36E+03	2.03E+02
		1415.80		0.48		
		1509.23	*	2.12	1.59E+03	8.73E+01
		1583.22	*	0.70	1.58E+03	1.44E+02
		1661.28	*	1.14	1.26E+03	9.30E+01

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.95	1729.59	*	2.88	1.56E+03	7.64E+01
		1764.49	*	15.36	1.56E+03	5.77E+01
		1847.42	*	2.04	1.44E+03	7.69E+01
PB-214	0.96	53.23		1.11		
		241.98	*	7.50	1.01E+03	6.39E+01
		258.79	*	0.55	1.40E+03	1.75E+02
		295.21	*	18.50	1.44E+03	9.44E+01
		351.92	*	35.80	1.70E+03	1.15E+02
		785.91	*	0.85	2.11E+03	3.01E+02
		839.03	*	0.63	-2.16E+02	1.65E+02
RN-219	0.99	130.59		0.12		
		271.23	*	10.80	3.99E+02	2.81E+01
		401.81	*	6.37	4.11E+02	2.94E+01
RA-223	0.87	122.32		1.19		
		144.23	*	3.22	1.06E+03	7.28E+01
		154.21	*	5.62	3.91E+02	2.89E+01
		158.63		0.69		
		179.54		0.15		
		269.46	*	13.70	3.81E+02	2.52E+01
		288.18		0.16		
		323.87	*	3.93	1.86E+02	2.28E+01
		328.40		0.21		
		338.28	*	2.79	1.20E+02	2.80E+01
		342.90		0.22		
		346.80		0.18		
		371.68		0.48		
TH-227	0.99	50.13	*	8.00	-1.62E+01	7.68E+00
		79.72		1.89		
		93.93	*	1.37	-8.83E+02	1.25E+02
		210.65	*	1.10	7.02E+01	8.92E+01
		235.97	*	12.70	-3.19E+02	3.34E+01
		256.25	*	7.01	3.77E+02	3.15E+01
		286.12		1.54		
		300.00	*	2.67	6.70E+02	7.28E+01
		304.51		1.23		
		329.85	*	2.69	1.40E+02	3.53E+01
		334.38	*	1.05	4.85E+01	1.33E+01
TH-228	0.72	84.37	*	1.23	1.77E+03	1.15E+02
		215.99		0.26		
PA-231	0.99	283.69	*	1.70	-6.50E+03	5.65E+02
		300.07	*	2.46	7.27E+02	5.55E+01
		302.65	*	2.20	4.09E+02	6.02E+01
		330.06	*	1.40	2.68E+02	7.30E+01
TH-231	0.98	81.23	*	0.89	9.56E+02	8.03E+01
		84.21	*	6.60	3.30E+02	2.57E+01
		89.95	*	0.94	1.86E+02	2.18E+01
U-233	0.98	42.44		0.09		
		54.70		0.02		
		97.13	*	0.02	-3.01E+03	9.42E+02
U-235	0.73	109.16		1.54		
		143.76	*	10.96	3.12E+02	2.04E+01
		163.36		5.08		
		185.71	*	57.20	1.09E+02	6.32E+00

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
U-235	0.73	194.94		0.63		
		202.11		1.08		
		205.31		5.01		
NP-237	0.88	57.10		0.39		
		86.48	*	12.40	8.17E+01	6.08E+00
		94.64	*	0.60	-2.02E+03	7.12E+02
		143.25	*	0.43	7.95E+03	6.36E+02
AM-243	0.99	74.66	*	68.20	2.48E+01	1.48E+00

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 1.000 sigma

INTERFERENCE CORRECTED REPORT
WITH PARENT/DAUGHTER CORRECTION

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
X	NB-95m	0.300			
X	CD-109	0.932			
	SB-125	0.490	1.01E+01	4.37E+00	
	I-126	0.885	2.91E+02	3.31E+01	
X	I-131	0.787			
	BA-133	0.350	1.93E+01	1.60E+00	
?	GD-153	0.986	-2.33E+00	6.42E-01	
X	EU-155	0.317			
	PB-210	0.999	1.75E+02	2.80E+01	
	PB-211	0.977	3.31E+02	2.19E+01	
	BI-214	0.950	1.55E+03	1.98E+01	
	PB-214	0.962	1.27E+03	4.58E+01	
	RN-219	0.995	4.05E+02	2.03E+01	
	RA-223	0.871	2.82E+02	1.24E+01	
X	RA-226	0.994			
	TH-227	0.993	1.15E+02	1.05E+01	
	TH-228	0.722	7.53E+02	1.48E+02	
	PA-231	0.998	3.02E+02	2.75E+01	
	TH-231	0.987	1.90E+02	1.82E+01	
?	U-233	0.988	-3.01E+03	9.42E+02	
	U-235	0.731	1.19E+02	5.98E+00	
	NP-237	0.889	8.20E+01	5.47E+00	
	AM-243	0.990	2.48E+01	1.48E+00	

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 3/30/2016 2:04:39PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.17	2.11907E+00	1.84		
	2	36.38	4.34194E-01	9.64	Tol.	I-125
	5	67.76	2.83539E+00	2.10		
m	7	77.17	1.99451E+00	2.97		
M	20	254.04	2.72075E-01	6.72		
m	25	274.76	2.25196E-01	7.27		
M	35	387.10	1.25945E-01	10.38	D-Esc	
	40	445.10	7.35556E-02	26.03	Sum	
	41	455.08	5.80139E-02	35.98	Sum	
	42	462.20	4.65417E-02	42.95	Tol.	AC-228
	43	469.88	3.41668E-03	507.37	Sum	
	44	480.64	-1.49445E-02	- 125.2	Sum	
	45	487.41	6.40833E-02	38.86	D-Esc	
	46	510.94	3.65507E-01	7.54	Sum	
	47	534.06	3.91806E-02	33.92	Sum	
	48	580.42	1.07875E-01	11.00	Sum	
	51	703.38	1.66903E-01	8.84	Sum	
	52	720.06	8.55000E-02	18.61	Sum	
	56	821.42	1.95556E-02	58.87		
	60	964.67	7.53889E-02	16.53	Tol.	AC-228
	61	1052.71	5.29167E-02	22.24	Sum	
	62	1070.51	6.00278E-02	26.37	Sum	
	67	1253.82	6.65556E-02	15.71	S-Esc	
M	74	1539.31	8.01183E-02	8.95	Sum	
m	75	1543.96	4.75638E-02	12.42	Sum	
M	77	1595.52	4.26421E-02	12.68	Sum	
m	78	1599.95	4.06214E-02	13.08	Sum	
	82	1839.16	-1.57403E-01	- 6.0	Sum	

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BE-7	477.60	10.42	-5.11E+01	9.62E+01	9.62E+01
	NA-22	1274.53	99.94	-1.92E+01	5.83E+00	5.83E+00
@	NA-24	1368.63	100.00	1.00E+26	1.00E+26	1.00E+26
> @		2754.03	99.94	0.00E+00		0.00E+00
	K-40	1460.83	10.67	1.06E+01	5.66E+01	5.66E+01
@	AR-41	1293.59	99.10	1.00E+26	1.00E+26	1.00E+26
	CR-51	320.08	9.86	-4.72E+02	1.90E+02	1.90E+02
	MN-54	834.85	99.98	6.82E+00	7.34E+00	7.34E+00
	CO-56	846.77	99.93	-9.61E+00	2.20E+00	8.75E+00
		977.37	1.44	-6.35E+00		6.41E+02
		1037.84	13.99	1.20E+01		6.30E+01
		1175.10	2.28	-2.68E+02		4.02E+02
		1238.28	67.56	-4.44E+01		2.71E+01
		1360.21	4.33	-2.84E+01		2.01E+02
		1771.35	15.69	-7.70E+02		1.85E+02
		2015.18	3.08	0.00E+00		5.59E+00
		2034.76	7.89	0.00E+00		2.20E+00
@	MN-56	846.75	98.87	1.00E+26	1.00E+26	1.00E+26
@		1810.72	27.19	1.00E+26		1.00E+26
> @		2113.05	14.34	0.00E+00		0.00E+00
	CO-57	122.06	85.60	2.58E+00	6.25E+00	6.25E+00
		136.47	10.68	-1.55E+02		5.34E+01
		692.41	0.16	-2.62E+03		3.07E+03
	CO-58	810.78	99.45	-2.05E+01	1.04E+01	1.04E+01
		863.96	0.68	-3.05E+02		1.40E+03
		1674.73	0.52	-5.04E+03		1.27E+03
	FE-59	142.65	1.02	7.96E+03	2.42E+01	1.34E+03
		192.35	3.08	-2.94E+03		3.97E+02
		1099.25	56.50	1.60E+01		2.42E+01
		1291.60	43.20	-1.42E+02		2.92E+01
	CO-60	1173.24	99.90	-2.95E+00	5.64E+00	5.71E+00
		1332.50	99.98	2.11E+00		5.64E+00
@	CU-64	1345.77	0.47	1.00E+26	1.00E+26	1.00E+26
	ZN-65	1115.55	50.60	-2.64E+02	3.50E+01	3.50E+01
	SE-75	66.05	1.12	3.15E+03	1.06E+01	5.84E+02
		96.73	3.42	4.42E+02		1.65E+02
		121.12	17.14	3.34E+00		3.71E+01
		136.00	58.27	-1.43E+01		1.17E+01
		198.61	1.47	7.73E+01		4.86E+02

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
SE-75	264.66		58.50	-3.03E+01	1.06E+01	1.06E+01
	279.54		24.79	-2.46E+01		2.65E+01
	303.93		1.31	-1.79E+04		5.81E+02
	400.66		11.37	-6.36E+01		7.50E+01
RB-83	520.39		44.70	-2.58E+01	1.52E+01	1.52E+01
	529.59		29.30	-8.94E+00		2.41E+01
	552.59		15.96	-2.12E+01		4.39E+01
@ BR-84	881.60		42.00	1.00E+26	1.00E+26	1.00E+26
@	1897.60		14.90	1.00E+26		1.00E+26
KR-85	514.01		0.43	-4.49E+02	1.24E+03	1.24E+03
@ KR-85M	151.20		75.00	1.00E+26	1.00E+26	1.00E+26
@	304.87		14.00	1.00E+26		1.00E+26
SR-85	514.01		95.70	-3.61E+00	9.96E+00	9.96E+00
@ SR-85m	151.19		12.90	1.00E+26	1.00E+26	1.00E+26
@	231.86		84.40	1.00E+26		1.00E+26
RB-86	1077.00		8.64	1.55E+01	4.94E+02	4.94E+02
@ KR-87	402.59		49.60	1.00E+26	1.00E+26	1.00E+26
@	673.83		1.89	1.00E+26		1.00E+26
@	845.44		7.30	1.00E+26		1.00E+26
@	1175.40		1.11	1.00E+26		1.00E+26
@	1740.52		2.04	1.00E+26		1.00E+26
@ KR-88	165.98		3.10	1.00E+26	1.00E+26	1.00E+26
@	196.30		26.00	1.00E+26		1.00E+26
@	362.23		2.25	1.00E+26		1.00E+26
@	834.83		13.00	1.00E+26		1.00E+26
@	985.78		1.52	1.00E+26		1.00E+26
@	1141.33		1.28	1.00E+26		1.00E+26
@	1179.51		1.00	1.00E+26		1.00E+26
@	1250.67		1.12	1.00E+26		1.00E+26
@	1369.50		1.48	1.00E+26		1.00E+26
@	1518.39		2.15	1.00E+26		1.00E+26
@	1529.77		10.90	1.00E+26		1.00E+26
@ RB-88	898.03		14.04	1.00E+26	1.00E+26	1.00E+26
@	1836.01		21.40	1.00E+26		1.00E+26
Y-88	898.04		93.68	7.82E-01	6.53E+00	9.41E+00
	1836.06		99.24	-2.56E+00		6.53E+00
NB-94x	702.62		97.90	1.15E+01	5.25E+00	5.25E+00
	871.09		99.90	-2.32E-01		5.69E+00
NB-95	765.81		99.81	-5.46E+00	2.67E+01	2.67E+01
NB-95m	204.12		2.33	5.16E+05	1.20E+06	8.99E+06
	235.69	*	24.80	-6.66E+06		1.20E+06
ZR-95	724.20		44.17	-1.14E+01	1.59E+01	2.04E+01
	756.73		54.46	-6.52E+00		1.59E+01
NB-96	460.04		26.62	-8.58E+17	6.32E+17	2.20E+18
	568.87		57.97	2.29E+17		1.01E+18
	778.22		96.45	-9.68E+18		6.32E+17
	849.93		20.40	-2.82E+18		3.30E+18
	1200.23		19.96	-5.28E+18		3.37E+18
MO-99	140.51		4.52	-1.24E+08	4.42E+07	1.29E+08
	181.06		6.08	-6.11E+08		9.55E+07
	366.42		1.20	-2.55E+08		4.12E+08
	739.50		12.13	1.94E+07		4.42E+07

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	MO-99	777.92		4.28	-1.97E+09	4.42E+07	1.28E+08
@	TC-99M	140.51		89.06	1.00E+26	1.00E+26	1.00E+26
	RU-103	443.80		3.27	-1.51E+02	1.29E+01	3.92E+02
		497.08		90.90	-9.58E-01		1.29E+01
		610.33		5.75	-4.76E+03		9.54E+02
	RHRU-106	621.93		9.93	-6.85E+00	4.70E+01	4.70E+01
		1050.41		1.56	-1.10E+02		3.97E+02
	AG-108M	433.94		90.50	-3.75E+00	5.34E+00	5.34E+00
		614.28		89.90	-4.21E+02		2.06E+01
		722.94		90.90	-2.83E+00		5.45E+00
	CD-109	88.03	*	3.61	3.05E+02	1.05E+02	1.05E+02
	AG-110M	116.48		1.36	-3.19E+01	5.24E+00	3.87E+02
		446.81		3.72	-2.79E+01		1.50E+02
		620.36		2.79	-5.21E+03		1.79E+02
		657.76		94.00	-2.80E+01		5.24E+00
		677.62		10.28	-1.66E+01		4.76E+01
		687.02		6.39	4.26E+01		7.96E+01
		706.68		16.32	-2.48E+01		3.70E+01
		744.28		4.70	1.49E+02		1.20E+02
		763.94		22.14	-1.88E+01		4.13E+01
		818.03		7.29	-5.15E+01		8.08E+01
		884.68		72.19	3.05E-01		9.59E+00
		937.49		34.13	-3.26E+01		2.93E+01
		1384.30		24.12	1.37E+02		4.67E+01
		1475.79		3.97	-4.79E+01		1.78E+02
		1505.04		12.95	-1.71E+02		8.44E+01
		1562.30		1.02	-1.82E+02		6.60E+02
	SN-113	255.06		1.82	2.23E+03	1.08E+01	4.32E+02
		391.69		64.00	-4.18E+00		1.08E+01
	IN-114	190.27		15.40	-3.62E+02	7.55E+01	7.55E+01
		558.43		4.40	2.22E+01		2.23E+02
		725.24		4.40	-1.60E+02		2.35E+02
	SB-122	564.24		69.30	-5.03E+06	9.46E+06	9.46E+06
	I-124	602.72		60.50	-5.70E+04	7.33E+04	7.33E+04
		722.78		9.98	-2.41E+05		4.75E+05
		1509.49		2.99	1.07E+07		2.99E+06
		1691.02		10.40	8.10E+05		4.81E+05
	SB-124	602.73		97.80	-6.97E+00	8.97E+00	8.97E+00
		645.85		7.38	2.63E+01		1.09E+02
		709.32		1.35	-7.79E+02		6.67E+02
		713.78		2.27	-3.01E+02		3.74E+02
		722.79		10.76	-4.42E+01		8.71E+01
		968.20		1.89	-3.19E+02		6.08E+02
		1045.13		1.84	-4.83E+02		5.31E+02
		1325.51		1.62	-3.23E+02		6.19E+02
		1355.18		1.04	-5.85E+01		9.65E+02
		1368.16		2.62	-1.86E+03		3.85E+02
		1436.56		1.23	-7.92E+02		8.78E+02
		1690.98		47.30	3.52E+01		2.09E+01
	I-125	30.98		20.10	-1.31E+02	6.26E+01	6.26E+01
		35.49		6.68	8.01E+02		1.71E+02
+	SB-125	176.31		6.82	-3.84E+01	1.64E+01	7.68E+01

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-125	380.45		1.52	-1.24E+02	1.64E+01	3.09E+02
		427.88	*	29.60	3.06E+01		1.64E+01
		463.36		10.49	-1.20E+01		4.60E+01
		600.60		17.86	-3.29E+01		2.67E+01
		606.72		5.03	-3.75E+01		4.25E+02
		635.95		11.31	4.63E+00		3.86E+01
		671.45		1.80	-7.36E+02		2.51E+02
	@ XE-125	188.42		54.00	1.00E+26	1.00E+26	1.00E+26
	@	243.38		30.10	1.00E+26		1.00E+26
+	I-126	388.63	*	34.10	2.91E+02	1.97E+02	1.97E+02
	SB-126	414.80		83.30	-7.78E+01	9.27E+01	1.37E+02
		666.30		99.60	5.17E+02		1.25E+02
		695.00		99.60	-1.69E+02		9.27E+01
		697.00		28.90	-5.97E+02		3.22E+02
		720.50		53.80	-4.80E+01		2.00E+02
		856.70		17.60	5.01E+01		6.91E+02
	I-129	39.58		7.45	-1.18E+02	6.04E+01	6.04E+01
	@ I-130	418.01		34.15	1.00E+26	1.00E+26	1.00E+26
	@	536.09		99.00	1.00E+26		1.00E+26
	@	668.54		96.10	1.00E+26		1.00E+26
	@	739.48		82.30	1.00E+26		1.00E+26
	@	1157.47		11.30	1.00E+26		1.00E+26
	I-131	284.30	*	6.14	-2.14E+05	6.28E+02	1.66E+04
		364.49		81.70	-4.75E+02		6.28E+02
		636.99		7.17	2.33E+02		6.96E+03
		722.91		1.77	-1.73E+04		3.32E+04
	XE-131M	163.93		1.91	-2.52E+03	6.90E+03	6.90E+03
	TE-132	111.76		1.74	2.15E+07	8.66E+05	3.39E+07
		116.30		1.96	-3.00E+06		3.64E+07
		228.16		88.00	-1.56E+06		8.66E+05
+	BA-133	53.16		2.20	-8.04E+01	1.11E+01	1.71E+02
		79.62		2.62	-2.43E+02		1.98E+02
		81.00	*	34.06	2.52E+01		1.11E+01
		160.61		0.64	-1.95E+03		8.24E+02
		223.23		0.45	9.30E+01		1.09E+03
		276.40		7.16	-6.20E+01		7.15E+01
		302.85	*	18.33	4.95E+01		1.89E+01
		356.02		62.05	-9.08E+01		1.66E+01
		383.85		8.94	-4.52E+00		5.27E+01
	I-133	529.87		87.00	-3.04E+19	8.18E+19	8.18E+19
		875.33		4.51	8.89E+19		2.03E+21
	CS-134	475.35		1.47	-1.86E+02	5.93E+00	3.18E+02
		563.23		8.38	-1.83E+01		5.67E+01
		569.32		15.43	8.62E+00		3.18E+01
		604.70		97.56	-3.38E+00		1.12E+01
		795.84		85.44	-1.38E+01		5.93E+00
		801.93		8.73	-4.69E+01		7.09E+01
		1038.57		1.00	1.10E+02		5.64E+02
		1167.94		1.80	-5.32E+02		3.27E+02
		1365.15		3.04	-1.59E+01		1.86E+02
	@ I-134	405.45		7.35	1.00E+26	1.00E+26	1.00E+26
	@	540.83		7.60	1.00E+26		1.00E+26

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
@ I-134	595.36	11.20	1.00E+26	1.00E+26	1.00E+26
@	621.79	10.60	1.00E+26		1.00E+26
@	677.34	7.80	1.00E+26		1.00E+26
@	847.03	95.40	1.00E+26		1.00E+26
@	884.09	64.90	1.00E+26		1.00E+26
@	1072.55	15.00	1.00E+26		1.00E+26
@	1136.16	9.20	1.00E+26		1.00E+26
CS-135	787.20	100.00	1.80E+01	5.62E+00	5.99E+00
	846.10	95.90	-5.02E+00		5.62E+00
@ I-135	417.63	3.55	1.00E+26	1.00E+26	1.00E+26
@	546.56	7.20	1.00E+26		1.00E+26
@	836.80	6.73	1.00E+26		1.00E+26
@	1038.76	8.00	1.00E+26		1.00E+26
@	1124.00	3.64	1.00E+26		1.00E+26
@	1131.51	22.74	1.00E+26		1.00E+26
@	1260.41	28.90	1.00E+26		1.00E+26
@	1457.56	8.73	1.00E+26		1.00E+26
@	1678.03	9.62	1.00E+26		1.00E+26
@	1706.46	4.13	1.00E+26		1.00E+26
@	1791.20	7.77	1.00E+26		1.00E+26
@ XE-135	249.79	90.20	1.00E+26	1.00E+26	1.00E+26
@	608.18	2.90	1.00E+26		1.00E+26
@ XE-135M	526.56	80.50	1.00E+26	1.00E+26	1.00E+26
CS-136	66.88	4.80	2.29E+04	9.37E+01	2.02E+03
	86.36	5.20	9.33E+03		1.78E+03
	153.25	5.77	-9.91E+02		1.82E+03
	163.92	3.40	-1.02E+03		2.80E+03
	176.60	10.00	-3.69E+02		9.27E+02
	273.65	11.10	7.44E+03		1.11E+03
	340.55	42.30	-5.44E+01		2.24E+02
	818.51	100.00	-3.34E+01		9.37E+01
	1048.07	80.00	-5.40E+01		1.28E+02
	1235.36	20.10	-7.66E+00		1.02E+03
CS-137	661.66	85.10	-1.57E+01	6.32E+00	6.32E+00
@ CS-138	138.10	1.49	1.00E+26	1.00E+26	1.00E+26
@	227.76	1.51	1.00E+26		1.00E+26
@	408.98	4.66	1.00E+26		1.00E+26
@	462.80	30.70	1.00E+26		1.00E+26
@	547.00	10.76	1.00E+26		1.00E+26
@	871.80	5.11	1.00E+26		1.00E+26
@	1009.78	29.80	1.00E+26		1.00E+26
@	1147.22	1.24	1.00E+26		1.00E+26
@	1343.59	1.14	1.00E+26		1.00E+26
@	1435.86	76.30	1.00E+26		1.00E+26
LA-138	788.74	33.60	-4.15E+00	8.60E+00	1.78E+01
	1435.80	66.40	-7.60E+00		8.60E+00
@ BA-139	165.86	23.60	1.00E+26	1.00E+26	1.00E+26
CE-139	165.85	79.90	-1.45E+00	8.53E+00	8.53E+00
BA-140	162.66	6.21	-2.92E+03	3.85E+02	1.69E+03
	304.85	4.30	-2.16E+04		2.39E+03
	423.72	3.10	-2.23E+03		3.61E+03
	437.58	1.93	-4.10E+03		5.00E+03

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BA-140	537.26		24.39	-1.12E+02	3.85E+02	3.85E+02
	LA-140	328.76		20.32	1.58E+11	5.38E+10	2.06E+11
		432.49		2.90	-7.39E+11		1.35E+12
		487.02		45.50	7.91E+10		8.72E+10
		751.64		4.33	-7.47E+11		8.74E+11
		815.77		23.30	-5.70E+11		1.68E+11
		867.85		5.50	-5.91E+11		8.08E+11
		919.55		2.66	-1.27E+12		1.72E+12
		925.19		6.90	-5.73E+12		6.61E+11
		1596.21		95.40	-3.65E+10		5.38E+10
	CE-141	145.44		48.20	-2.40E+01	3.92E+01	3.92E+01
	CE-144	80.12		1.36	-3.23E+03	5.01E+01	3.98E+02
		133.51		11.09	-1.10E+01		5.01E+01
	PM-144	476.78		41.98	-6.86E+00	4.82E+00	1.20E+01
		618.01		98.59	-7.41E+02		4.84E+00
		694.00		0.55	-1.17E+03		8.56E+02
		696.49		99.49	-8.89E+00		4.82E+00
		778.57		1.51	-4.62E+03		3.57E+02
		814.14		0.55	-3.87E+03		9.70E+02
	PM-146	146.20		0.22	-3.95E+03	7.34E+00	2.69E+03
		453.88		66.00	-2.76E+00		7.34E+00
		589.80		0.43	-1.76E+03		1.07E+03
		633.25		1.12	2.47E+01		3.84E+02
		735.93		22.80	-2.74E+01		1.97E+01
		747.24		17.71	1.04E+01		2.71E+01
	ND-147	91.11		27.90	-2.93E+03	4.67E+02	4.67E+02
		319.41		1.95	-2.05E+04		7.66E+03
		398.15		0.87	-4.07E+04		1.91E+04
		439.89		1.20	-6.41E+03		1.29E+04
		531.02		13.09	-3.12E+02		1.15E+03
	EU-152	121.78		28.42	5.13E+00	1.64E+01	1.64E+01
		244.70		7.49	-1.24E+02		9.89E+01
		295.94		0.44	6.11E+04		2.50E+03
		344.28		26.58	-1.19E+02		1.80E+01
		411.12		2.23	-6.53E+01		2.38E+02
		443.98		3.09	-4.84E+01		1.57E+02
		688.67		0.83	-3.58E+01		5.20E+02
		778.90		12.96	-3.51E+02		3.75E+01
		867.39		4.15	-8.28E+01		1.35E+02
		964.13		14.50	4.42E+01		4.20E+01
		1005.28		0.65	2.07E+02		8.74E+02
		1085.87		10.16	-1.41E+01		5.38E+01
		1089.70		1.71	-1.16E+02		3.21E+02
		1112.12		13.54	-1.30E+03		4.14E+01
		1212.95		1.40	-2.22E+02		4.30E+02
		1299.12		1.63	-5.85E+01		3.27E+02
		1408.01		20.87	2.47E+02		4.71E+01
+	GD-153	69.67		2.54	-4.96E+02	1.16E+01	2.33E+02
		97.43	*	30.20	-2.33E+00		1.16E+01
		103.18		21.44	-1.48E+01		1.95E+01
	EU-154	123.07		40.78	3.34E+00	1.16E+01	1.16E+01
		247.93		6.95	-5.74E+02		6.82E+01

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	EU-154	444.49		0.56	3.83E+02	1.16E+01	8.69E+02
		582.10		0.89	5.97E+02		5.63E+02
		591.76		4.99	-4.65E+01		9.17E+01
		692.42		1.80	-2.01E+02		2.35E+02
		723.30		20.22	-1.29E+01		2.48E+01
		756.80		4.57	-4.32E+01		1.05E+02
		815.53		0.52	-3.74E+03		9.39E+02
		845.39		0.59	-7.81E+02		9.41E+02
		873.19		12.27	3.00E+00		4.73E+01
		892.78		0.52	4.89E+01		1.18E+03
		904.08		0.90	-1.87E+01		6.98E+02
		996.26		10.59	-1.03E+01		5.35E+01
		1004.72		18.00	6.17E+00		3.17E+01
		1246.15		0.87	-9.54E+03		7.24E+02
		1274.44		35.19	-5.29E+01		1.61E+01
		1494.05		0.70	-1.74E+02		9.74E+02
		1596.49		1.80	4.82E+01		3.61E+02
	EU-155	45.30		1.32	7.48E+02	1.17E+01	3.37E+02
		60.01		1.13	-2.66E+02		3.38E+02
		86.54	*	30.70	3.37E+01		1.17E+01
		105.31		21.15	-7.11E+00		1.74E+01
	W-187	72.00		11.10	-6.54E+18	1.09E+18	2.47E+18
		134.25		8.80	-8.72E+17		3.79E+18
		479.55		21.80	-3.89E+17		1.53E+18
		618.26		6.28	-7.14E+20		4.66E+18
		625.52		1.09	-4.13E+18		2.64E+19
		685.73		27.30	7.24E+17		1.09E+18
		772.89		4.12	-8.23E+19		1.44E+19
	IR-192	295.96		28.66	1.57E+03	9.60E+00	6.39E+01
		308.46		30.00	-3.94E+01		2.58E+01
		316.51		82.81	-7.53E+00		9.60E+00
		468.07		47.83	-4.74E+00		1.59E+01
		588.58		4.51	-2.31E+02		1.69E+02
		604.41		8.23	-6.40E+01		2.12E+02
		612.47		5.31	-8.67E+03		6.56E+02
	TL-201	135.34		2.56	-1.65E+07	1.54E+07	5.76E+07
		167.43		10.00	-3.25E+06		1.54E+07
	HG-203	279.20		81.46	-1.24E+01	1.34E+01	1.34E+01
	TL-208	277.36		6.31	-6.99E+01	5.86E+00	7.90E+01
		510.77		22.60	7.73E+01		2.36E+01
		583.19		84.50	7.63E+00		5.86E+00
		763.13		1.81	-2.63E+02		3.19E+02
		860.56		12.42	5.70E+00		4.52E+01
+	PB-210	46.54	*	4.25	1.75E+02	9.77E+01	9.77E+01
	BI-211	351.06		12.91	4.71E+03	1.23E+02	1.23E+02
+	PB-211	404.85	*	3.78	4.93E+02	9.94E+01	9.99E+01
		427.09	*	1.76	4.95E+02		2.65E+02
		704.64		0.46	2.28E+03		1.12E+03
		766.51		0.62	-2.42E+02		1.43E+03
		832.01	*	3.52	2.41E+02		9.94E+01
	BI-212	727.33		6.58	-6.76E+01	6.93E+01	6.93E+01
		785.37		1.10	-1.70E+02		5.42E+02

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BI-212	1078.62		0.56	7.24E+01	6.93E+01	9.47E+02
		1620.50		1.49	-4.36E+01		3.42E+02
	PB-212	115.18		0.59	3.29E+02	1.54E+01	6.39E+02
		238.63		43.30	4.11E+01		1.54E+01
		300.09		3.28	-5.29E+03		1.79E+02
+	BI-214	609.31	*	44.80	1.54E+03	1.03E+01	1.03E+01
		665.45	*	1.29	1.84E+03		2.73E+02
		768.36	*	4.80	1.66E+03		8.99E+01
		806.17	*	1.22	1.61E+03		3.44E+02
		934.06	*	3.03	1.58E+03		1.58E+02
		1120.29	*	14.80	1.57E+03		3.25E+01
		1155.19	*	1.64	1.57E+03		2.14E+02
		1207.68	*	0.49	1.39E+03		7.87E+02
		1238.11	*	5.86	1.57E+03		8.81E+01
		1280.96	*	1.44	1.48E+03		2.75E+02
		1377.67	*	3.92	1.63E+03		1.01E+02
		1385.31	*	0.89	1.39E+03		4.44E+02
		1401.50	*	1.55	1.30E+03		2.56E+02
		1407.98	*	2.80	1.36E+03		1.43E+02
		1415.80		0.48	-4.61E+03		1.27E+03
		1509.23	*	2.12	1.59E+03		2.19E+02
		1583.22	*	0.70	1.58E+03		4.97E+02
		1661.28	*	1.14	1.26E+03		2.43E+02
		1729.59	*	2.88	1.56E+03		1.12E+02
		1764.49	*	15.36	1.56E+03		2.45E+01
		1847.42	*	2.04	1.44E+03		1.17E+02
+	PB-214	53.23		1.11	-1.58E+02	1.58E+01	3.36E+02
		241.98	*	7.50	1.01E+03		7.24E+01
		258.79	*	0.55	1.40E+03		7.01E+02
		295.21	*	18.50	1.44E+03		1.96E+01
		351.92	*	35.80	1.70E+03		1.58E+01
		785.91	*	0.85	2.11E+03		5.47E+02
		839.03	*	0.63	-2.16E+02		7.79E+02
+	RN-219	130.59		0.12	-1.08E+03	3.46E+01	4.00E+03
		271.23	*	10.80	3.99E+02		3.46E+01
		401.81	*	6.37	4.11E+02		6.20E+01
	RN-220	549.73		0.11	-7.21E+02	4.13E+03	4.13E+03
+	RA-223	122.32		1.19	1.61E+02	2.58E+01	3.91E+02
		144.23	*	3.22	1.06E+03		1.67E+02
		154.21	*	5.62	3.91E+02		7.59E+01
		158.63		0.69	-1.23E+03		7.66E+02
		179.54		0.15	-2.64E+04		3.40E+03
		269.46	*	13.70	3.81E+02		2.58E+01
		288.18		0.16	-1.29E+05		3.14E+03
		323.87	*	3.93	1.86E+02		8.42E+01
		328.40		0.21	5.06E+03		2.55E+03
		338.28	*	2.79	1.20E+02		1.21E+02
		342.90		0.22	-1.43E+04		2.20E+03
		346.80		0.18	-1.26E+04		2.70E+03
		371.68		0.48	6.24E+02		9.50E+02
	RA-224	240.99		3.97	2.05E+03	1.88E+02	1.88E+02
	RA-226	186.10	*	3.50	1.78E+03	1.27E+02	1.27E+02

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TH-227	50.13	*	8.00	-1.62E+01	3.60E+01	3.60E+01
		79.72		1.89	-3.33E+02		2.72E+02
		93.93	*	1.37	-8.83E+02		2.31E+02
		210.65	*	1.10	7.02E+01		4.10E+02
		235.97	*	12.70	-3.19E+02		5.72E+01
		256.25	*	7.01	3.77E+02		5.54E+01
		286.12		1.54	-6.38E+02		3.38E+02
		300.00	*	2.67	6.70E+02		1.32E+02
		304.51		1.23	-9.47E+03		4.30E+02
		329.85	*	2.69	1.40E+02		1.33E+02
		334.38	*	1.05	4.85E+01		3.32E+02
	AC-228	99.50		1.28	-2.39E+02	2.31E+01	2.94E+02
		129.07		2.45	-6.42E+01		1.94E+02
		153.98		0.74	-2.78E+02		7.73E+02
		209.25		3.88	-5.06E+01		1.30E+02
		270.24		3.43	2.74E+03		2.14E+02
		327.90		3.06	6.52E+02		1.81E+02
		332.37		0.40	2.03E+02		1.34E+03
		338.32		11.25	1.67E+00		4.59E+01
		409.46		1.94	-2.75E+01		3.01E+02
		463.01		4.44	-2.72E+01		1.05E+02
		508.96		0.47	3.56E+03		1.13E+03
		562.50		0.87	-1.65E+02		5.18E+02
		755.32		1.00	-5.61E+01		4.72E+02
		772.29		1.50	-2.81E+03		5.91E+02
		782.14		0.50	-1.09E+03		1.15E+03
		794.95		4.34	-1.58E+02		1.12E+02
		830.49		0.55	5.80E+02		1.12E+03
		835.71		1.68	-1.14E+02		3.92E+02
		840.38		0.94	-5.17E+02		6.26E+02
		904.20		0.78	-2.13E+01		7.95E+02
		911.21		26.60	1.36E+01		2.31E+01
		964.77		5.11	1.25E+02		1.18E+02
		968.97		16.20	-2.20E+01		3.76E+01
		1247.08		0.50	-1.64E+04		1.06E+03
		1459.14		0.80	8.10E+01		7.47E+02
		1495.91		0.89	-7.78E+01		7.62E+02
		1580.54		0.61	2.05E+03		1.13E+03
		1588.21		3.27	-2.34E+02		2.11E+02
		1630.63		1.60	-7.12E+01		2.99E+02
+	TH-228	84.37	*	1.23	1.77E+03	2.95E+02	2.95E+02
		215.99		0.26	-4.72E+02		1.86E+03
	TH-229	75.09		0.61	8.61E+03	1.18E+02	9.49E+02
		86.35		3.90	6.77E+02		1.29E+02
		124.60		1.43	1.54E+02		3.29E+02
		136.99		1.18	-1.13E+03		4.21E+02
		148.15		0.88	-2.33E+03		5.96E+02
		154.34		0.77	3.02E+03		7.44E+02
		156.41		1.19	-2.38E+02		4.85E+02
		193.51		4.41	-9.43E+02		1.18E+02
		204.69		0.60	-7.62E+01		8.52E+02
		210.85		2.77	-4.01E+01		1.82E+02

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PA-231	283.69	*	1.70	-6.50E+03	1.43E+02	5.05E+02
		300.07	*	2.46	7.27E+02		1.43E+02
		302.65	*	2.20	4.09E+02		1.56E+02
		330.06	*	1.40	2.68E+02		2.56E+02
+	TH-231	81.23	*	0.89	9.56E+02	5.50E+01	4.20E+02
		84.21	*	6.60	3.30E+02		5.50E+01
		89.95	*	0.94	1.86E+02		3.63E+02
	TH-232	63.81		0.27	-5.19E+03	1.45E+03	1.45E+03
	U-232	57.78		0.20	-1.78E+03	1.85E+03	1.85E+03
		129.08		0.07	-2.28E+03		6.91E+03
	PA-233	75.35		1.39	3.78E+03	1.21E+01	4.16E+02
		86.81		1.97	2.21E+02		2.39E+02
		103.97		0.87	-2.90E+02		4.12E+02
		271.48		0.33	3.03E+04		2.26E+03
		300.34		6.62	-2.62E+03		8.88E+01
		312.17		38.60	-2.39E+00		1.21E+01
		340.81		4.47	-2.80E+01		1.15E+02
		375.45		0.68	5.00E+02		6.78E+02
		398.62		1.39	-6.47E+02		3.90E+02
		415.76		1.75	-2.07E+01		3.04E+02
+	U-233	42.44		0.09	-1.51E+04	4.80E+03	4.80E+03
		54.70		0.02	-7.14E+03		2.08E+04
		97.13	*	0.02	-3.01E+03		1.49E+04
	PA-234	62.70		1.55	-1.28E+03	2.68E+01	2.50E+02
		99.86		3.19	-1.45E+02		1.17E+02
		125.46		0.78	2.80E+02		6.05E+02
		131.30		18.00	-4.81E-01		2.68E+01
		140.50		0.81	-6.11E+02		6.33E+02
		152.71		5.97	-9.49E+01		9.59E+01
		159.48		0.65	-1.46E+03		8.13E+02
		170.85		0.50	-2.58E+02		1.02E+03
		186.15		1.76	3.53E+03		3.69E+02
		193.73		0.49	-8.25E+03		1.06E+03
		200.97		0.90	8.62E+01		5.74E+02
		203.12		1.23	1.03E+02		4.19E+02
		227.00		9.99	-1.83E+01		4.83E+01
		245.37		0.75	-1.82E+03		9.20E+02
		249.22		2.47	-2.33E+03		1.90E+02
		272.28		1.08	9.61E+03		6.92E+02
		293.79		2.99	8.89E+03		3.63E+02
		330.40		0.77	-4.10E+02		6.77E+02
		369.50		2.47	9.71E+01		1.83E+02
		372.00		1.21	2.66E+02		3.77E+02
		458.68		1.13	-1.60E+02		4.26E+02
		506.75		1.29	8.71E+00		3.84E+02
		513.40		1.10	-1.45E+02		4.82E+02
		521.40		0.74	-1.13E+03		5.90E+02
		565.20		1.03	-9.69E+01		4.44E+02
		569.32		11.80	1.07E+01		3.95E+01
		602.60		0.54	-6.68E+02		8.60E+02
		663.90		0.54	-1.36E+03		1.07E+03
		666.50		1.16	2.02E+03		4.94E+02

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PA-234	669.70		0.99	-8.65E+02	2.68E+01	5.71E+02
		692.60		1.24	-2.88E+02		3.37E+02
		699.03		3.61	-1.38E+02		1.30E+02
		705.90		2.27	-1.54E+02		2.26E+02
		730.90		0.63	2.81E+02		7.25E+02
		733.39		6.90	-5.15E+01		6.45E+01
		738.00		1.15	-2.10E+02		3.95E+02
		742.81		2.06	2.80E+02		2.34E+02
		755.00		1.22	-3.19E+01		3.86E+02
		780.40		0.90	-8.36E+02		5.54E+02
		786.27		1.19	-9.83E+01		5.03E+02
		794.90		1.34	-5.11E+02		3.62E+02
		796.10		2.58	-4.35E+02		1.87E+02
		805.52		3.14	6.07E+02		1.96E+02
		819.20		1.88	-4.68E+01		2.73E+02
		824.65		3.12	-1.96E+02		1.73E+02
		831.50		4.12	5.42E+01		1.48E+02
		876.00		2.52	3.44E+01		2.31E+02
		880.50		10.40	1.78E+01		5.71E+01
		883.24		9.58	1.17E+01		6.20E+01
		898.67		3.24	4.18E+01		1.90E+02
		926.00		16.80	-3.11E+02		3.38E+01
		946.18		15.00	-3.74E+01		3.76E+01
		980.48		5.15	-1.99E+01		1.09E+02
		984.20		1.62	1.70E+01		3.48E+02
		1028.70		0.57	7.96E+01		9.60E+02
		1083.20		0.50	-2.24E+02		1.08E+03
		1352.90		1.15	-5.31E+01		4.61E+02
		1393.90		2.06	-3.99E+01		2.67E+02
		1668.40		0.76	-1.42E+03		7.46E+02
		1693.80		0.69	-3.19E+01		6.90E+02
	PA-234M	766.36		0.29	-5.11E+02	6.73E+02	3.02E+03
		811.00		0.51	-2.33E+03		1.19E+03
		1001.03		0.84	1.64E+02		6.73E+02
	TH-234	63.29		4.84	-3.50E+02	7.22E+01	8.03E+01
		83.30		0.08	1.25E+04		6.64E+03
		92.59		5.58	-1.70E+02		7.22E+01
		112.81		0.28	6.70E+02		1.33E+03
	U-234	53.20		0.12	-1.42E+03	3.03E+03	3.03E+03
		120.90		0.03	2.80E+03		1.36E+04
+	U-235	109.16		1.54	-1.37E+02	7.75E+00	2.35E+02
		143.76	*	10.96	3.12E+02		4.91E+01
		163.36		5.08	-8.93E+01		1.02E+02
		185.71	*	57.20	1.09E+02		7.75E+00
		194.94		0.63	-3.05E+03		8.26E+02
		202.11		1.08	3.15E+02		4.79E+02
		205.31		5.01	-8.99E+00		1.02E+02
+	NP-237	57.10		0.39	-1.40E+03	2.83E+01	9.42E+02
		86.48	*	12.40	8.17E+01		2.83E+01
		94.64	*	0.60	-2.02E+03		5.28E+02
		143.25	*	0.43	7.95E+03		1.25E+03
	NP-239	106.12		27.20	-8.32E+07	1.53E+08	1.53E+08

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	NP-239	209.75		3.42	-5.64E+08	1.53E+08	1.71E+09
		228.18		10.76	-9.36E+08		5.20E+08
		277.60		14.38	-3.56E+08		3.99E+08
		334.31		2.07	-3.61E+09		2.81E+09
	AM-241	59.54		35.90	-9.32E+00	1.03E+01	1.03E+01
	CM-241	132.41		3.90	5.17E+01	2.05E+01	4.00E+02
		165.01		3.40	-8.38E+01		4.90E+02
		205.88		2.67	-1.26E+02		6.13E+02
		430.63		4.06	-1.19E+02		4.20E+02
		463.27		1.23	-3.15E+02		1.22E+03
		471.80		71.30	-2.64E+00		2.05E+01
		636.88		1.53	1.09E+02		8.84E+02
+	AM-243	74.66	*	68.20	2.48E+01	5.83E+00	5.83E+00

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.60	10.42	9.62E+01	9.62E+01	-5.11E+01	4.78E+01
	NA-22	1274.53	99.94	5.83E+00	5.83E+00	-1.92E+01	2.88E+00
@	NA-24	1368.63	100.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
>@		2754.03	99.94	0.00E+00		0.00E+00	0.00E+00
	K-40	1460.83	10.67	5.66E+01	5.66E+01	1.06E+01	2.79E+01
@	AR-41	1293.59	99.10	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	CR-51	320.08	9.86	1.90E+02	1.90E+02	-4.72E+02	9.43E+01
	MN-54	834.85	99.98	7.34E+00	7.34E+00	6.82E+00	3.64E+00
	CO-56	846.77	99.93	8.75E+00	2.20E+00	-9.61E+00	4.33E+00
		977.37	1.44	6.41E+02		-6.35E+00	3.17E+02
		1037.84	13.99	6.30E+01		1.20E+01	3.11E+01
		1175.10	2.28	4.02E+02		-2.68E+02	1.98E+02
		1238.28	67.56	2.71E+01		-4.44E+01	1.35E+01
		1360.21	4.33	2.01E+02		-2.84E+01	9.91E+01
		1771.35	15.69	1.85E+02		-7.70E+02	9.18E+01
		2015.18	3.08	5.59E+00		0.00E+00	0.00E+00
		2034.76	7.89	2.20E+00		0.00E+00	0.00E+00
@	MN-56	846.75	98.87	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		1810.72	27.19	1.00E+26		1.00E+26	1.00E+20
>@		2113.05	14.34	0.00E+00		0.00E+00	0.00E+00
	CO-57	122.06	85.60	6.25E+00	6.25E+00	2.58E+00	3.11E+00
		136.47	10.68	5.34E+01		-1.55E+02	2.66E+01

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CO-57	692.41	0.16	3.07E+03	6.25E+00	-2.62E+03	1.52E+03
CO-58	810.78	99.45	1.04E+01	1.04E+01	-2.05E+01	5.18E+00
	863.96	0.68	1.40E+03		-3.05E+02	6.95E+02
	1674.73	0.52	1.27E+03		-5.04E+03	6.21E+02
FE-59	142.65	1.02	1.34E+03	2.42E+01	7.96E+03	6.69E+02
	192.35	3.08	3.97E+02		-2.94E+03	1.98E+02
	1099.25	56.50	2.42E+01		1.60E+01	1.20E+01
	1291.60	43.20	2.92E+01		-1.42E+02	1.44E+01
CO-60	1173.24	99.90	5.71E+00	5.64E+00	-2.95E+00	2.82E+00
	1332.50	99.98	5.64E+00		2.11E+00	2.78E+00
@ CU-64	1345.77	0.47	1.00E+26	1.00E+26	1.00E+26	1.00E+20
ZN-65	1115.55	50.60	3.50E+01	3.50E+01	-2.64E+02	1.74E+01
SE-75	66.05	1.12	5.84E+02	1.06E+01	3.15E+03	2.91E+02
	96.73	3.42	1.65E+02		4.42E+02	8.22E+01
	121.12	17.14	3.71E+01		3.34E+00	1.85E+01
	136.00	58.27	1.17E+01		-1.43E+01	5.82E+00
	198.61	1.47	4.86E+02		7.73E+01	2.42E+02
	264.66	58.50	1.06E+01		-3.03E+01	5.25E+00
	279.54	24.79	2.65E+01		-2.46E+01	1.32E+01
	303.93	1.31	5.81E+02		-1.79E+04	2.89E+02
	400.66	11.37	7.50E+01		-6.36E+01	3.73E+01
RB-83	520.39	44.70	1.52E+01	1.52E+01	-2.58E+01	7.53E+00
	529.59	29.30	2.41E+01		-8.94E+00	1.19E+01
	552.59	15.96	4.39E+01		-2.12E+01	2.18E+01
@ BR-84	881.60	42.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1897.60	14.90	1.00E+26		1.00E+26	1.00E+20
KR-85	514.01	0.43	1.24E+03	1.24E+03	-4.49E+02	6.16E+02
@ KR-85M	151.20	75.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	304.87	14.00	1.00E+26		1.00E+26	1.00E+20
SR-85	514.01	95.70	9.96E+00	9.96E+00	-3.61E+00	4.95E+00
@ SR-85m	151.19	12.90	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	231.86	84.40	1.00E+26		1.00E+26	1.00E+20
RB-86	1077.00	8.64	4.94E+02	4.94E+02	1.55E+01	2.44E+02
@ KR-87	402.59	49.60	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	673.83	1.89	1.00E+26		1.00E+26	1.00E+20
@	845.44	7.30	1.00E+26		1.00E+26	1.00E+20
@	1175.40	1.11	1.00E+26		1.00E+26	1.00E+20
@	1740.52	2.04	1.00E+26		1.00E+26	1.00E+20
@ KR-88	165.98	3.10	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	196.30	26.00	1.00E+26		1.00E+26	1.00E+20
@	362.23	2.25	1.00E+26		1.00E+26	1.00E+20
@	834.83	13.00	1.00E+26		1.00E+26	1.00E+20
@	985.78	1.52	1.00E+26		1.00E+26	1.00E+20
@	1141.33	1.28	1.00E+26		1.00E+26	1.00E+20
@	1179.51	1.00	1.00E+26		1.00E+26	1.00E+20
@	1250.67	1.12	1.00E+26		1.00E+26	1.00E+20
@	1369.50	1.48	1.00E+26		1.00E+26	1.00E+20
@	1518.39	2.15	1.00E+26		1.00E+26	1.00E+20
@	1529.77	10.90	1.00E+26		1.00E+26	1.00E+20
@ RB-88	898.03	14.04	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1836.01	21.40	1.00E+26		1.00E+26	1.00E+20
Y-88	898.04	93.68	9.41E+00	6.53E+00	7.82E-01	4.66E+00
	1836.06	99.24	6.53E+00		-2.56E+00	3.20E+00

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
NB-94x	702.62		97.90	5.25E+00	5.25E+00	1.15E+01	2.60E+00
	871.09		99.90	5.69E+00		-2.32E-01	2.82E+00
NB-95	765.81		99.81	2.67E+01	2.67E+01	-5.46E+00	1.33E+01
NB-95m	204.12		2.33	8.99E+06	1.20E+06	5.16E+05	4.48E+06
	235.69	*	24.80	1.20E+06		-6.66E+06	5.97E+05
ZR-95	724.20		44.17	2.04E+01	1.59E+01	-1.14E+01	1.01E+01
	756.73		54.46	1.59E+01		-6.52E+00	7.85E+00
NB-96	460.04		26.62	2.20E+18	6.32E+17	-8.58E+17	1.09E+18
	568.87		57.97	1.01E+18		2.29E+17	5.02E+17
	778.22		96.45	6.32E+17		-9.68E+18	3.13E+17
	849.93		20.40	3.30E+18		-2.82E+18	1.63E+18
	1200.23		19.96	3.37E+18		-5.28E+18	1.66E+18
MO-99	140.51		4.52	1.29E+08	4.42E+07	-1.24E+08	6.43E+07
	181.06		6.08	9.55E+07		-6.11E+08	4.76E+07
	366.42		1.20	4.12E+08		-2.55E+08	2.05E+08
	739.50		12.13	4.42E+07		1.94E+07	2.19E+07
	777.92		4.28	1.28E+08		-1.97E+09	6.35E+07
@ TC-99M	140.51		89.06	1.00E+26	1.00E+26	1.00E+26	1.00E+20
RU-103	443.80		3.27	3.92E+02	1.29E+01	-1.51E+02	1.95E+02
	497.08		90.90	1.29E+01		-9.58E-01	6.41E+00
	610.33		5.75	9.54E+02		-4.76E+03	4.76E+02
RHRU-106	621.93		9.93	4.70E+01	4.70E+01	-6.85E+00	2.33E+01
	1050.41		1.56	3.97E+02		-1.10E+02	1.96E+02
AG-108M	433.94		90.50	5.34E+00	5.34E+00	-3.75E+00	2.66E+00
	614.28		89.90	2.06E+01		-4.21E+02	1.03E+01
	722.94		90.90	5.45E+00		-2.83E+00	2.70E+00
CD-109	88.03	*	3.61	1.05E+02	1.05E+02	3.05E+02	5.25E+01
AG-110M	116.48		1.36	3.87E+02	5.24E+00	-3.19E+01	1.93E+02
	446.81		3.72	1.50E+02		-2.79E+01	7.47E+01
	620.36		2.79	1.79E+02		-5.21E+03	8.85E+01
	657.76		94.00	5.24E+00		-2.80E+01	2.59E+00
	677.62		10.28	4.76E+01		-1.66E+01	2.36E+01
	687.02		6.39	7.96E+01		4.26E+01	3.94E+01
	706.68		16.32	3.70E+01		-2.48E+01	1.83E+01
	744.28		4.70	1.20E+02		1.49E+02	5.95E+01
	763.94		22.14	4.13E+01		-1.88E+01	2.05E+01
	818.03		7.29	8.08E+01		-5.15E+01	4.00E+01
	884.68		72.19	9.59E+00		3.05E-01	4.75E+00
	937.49		34.13	2.93E+01		-3.26E+01	1.45E+01
	1384.30		24.12	4.67E+01		1.37E+02	2.31E+01
	1475.79		3.97	1.78E+02		-4.79E+01	8.80E+01
	1505.04		12.95	8.44E+01		-1.71E+02	4.18E+01
	1562.30		1.02	6.60E+02		-1.82E+02	3.25E+02
SN-113	255.06		1.82	4.32E+02	1.08E+01	2.23E+03	2.15E+02
	391.69		64.00	1.08E+01		-4.18E+00	5.36E+00
IN-114	190.27		15.40	7.55E+01	7.55E+01	-3.62E+02	3.76E+01
	558.43		4.40	2.23E+02		2.22E+01	1.10E+02
	725.24		4.40	2.35E+02		-1.60E+02	1.16E+02
SB-122	564.24		69.30	9.46E+06	9.46E+06	-5.03E+06	4.69E+06
I-124	602.72		60.50	7.33E+04	7.33E+04	-5.70E+04	3.63E+04
	722.78		9.98	4.75E+05		-2.41E+05	2.35E+05
	1509.49		2.99	2.99E+06		1.07E+07	1.48E+06
	1691.02		10.40	4.81E+05		8.10E+05	2.36E+05

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	SB-124	602.73		97.80	8.97E+00	8.97E+00	-6.97E+00	4.45E+00
		645.85		7.38	1.09E+02		2.63E+01	5.37E+01
		709.32		1.35	6.67E+02		-7.79E+02	3.30E+02
		713.78		2.27	3.74E+02		-3.01E+02	1.85E+02
		722.79		10.76	8.71E+01		-4.42E+01	4.31E+01
		968.20		1.89	6.08E+02		-3.19E+02	3.01E+02
		1045.13		1.84	5.31E+02		-4.83E+02	2.62E+02
		1325.51		1.62	6.19E+02		-3.23E+02	3.05E+02
		1355.18		1.04	9.65E+02		-5.85E+01	4.75E+02
		1368.16		2.62	3.85E+02		-1.86E+03	1.90E+02
		1436.56		1.23	8.78E+02		-7.92E+02	4.33E+02
		1690.98		47.30	2.09E+01		3.52E+01	1.03E+01
	I-125	30.98		20.10	6.26E+01	6.26E+01	-1.31E+02	3.12E+01
		35.49		6.68	1.71E+02		8.01E+02	8.54E+01
+	SB-125	176.31		6.82	7.68E+01	1.64E+01	-3.84E+01	3.83E+01
		380.45		1.52	3.09E+02		-1.24E+02	1.53E+02
		427.88	*	29.60	1.64E+01		3.06E+01	8.13E+00
		463.36		10.49	4.60E+01		-1.20E+01	2.29E+01
		600.60		17.86	2.67E+01		-3.29E+01	1.32E+01
		606.72		5.03	4.25E+02		-3.75E+01	2.12E+02
		635.95		11.31	3.86E+01		4.63E+00	1.91E+01
		671.45		1.80	2.51E+02		-7.36E+02	1.24E+02
	@ XE-125	188.42		54.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	243.38		30.10	1.00E+26		1.00E+26	1.00E+20
+	I-126	388.63	*	34.10	1.97E+02	1.97E+02	2.91E+02	9.78E+01
	SB-126	414.80		83.30	1.37E+02	9.27E+01	-7.78E+01	6.82E+01
		666.30		99.60	1.25E+02		5.17E+02	6.20E+01
		695.00		99.60	9.27E+01		-1.69E+02	4.58E+01
		697.00		28.90	3.22E+02		-5.97E+02	1.59E+02
		720.50		53.80	2.00E+02		-4.80E+01	9.89E+01
		856.70		17.60	6.91E+02		5.01E+01	3.42E+02
	I-129	39.58		7.45	6.04E+01	6.04E+01	-1.18E+02	3.00E+01
	@ I-130	418.01		34.15	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	536.09		99.00	1.00E+26		1.00E+26	1.00E+20
	@	668.54		96.10	1.00E+26		1.00E+26	1.00E+20
	@	739.48		82.30	1.00E+26		1.00E+26	1.00E+20
	@	1157.47		11.30	1.00E+26		1.00E+26	1.00E+20
	I-131	284.30	*	6.14	1.66E+04	6.28E+02	-2.14E+05	8.27E+03
		364.49		81.70	6.28E+02		-4.75E+02	3.12E+02
		636.99		7.17	6.96E+03		2.33E+02	3.45E+03
		722.91		1.77	3.32E+04		-1.73E+04	1.65E+04
	XE-131M	163.93		1.91	6.90E+03	6.90E+03	-2.52E+03	3.44E+03
	TE-132	111.76		1.74	3.39E+07	8.66E+05	2.15E+07	1.69E+07
		116.30		1.96	3.64E+07		-3.00E+06	1.82E+07
		228.16		88.00	8.66E+05		-1.56E+06	4.31E+05
+	BA-133	53.16		2.20	1.71E+02	1.11E+01	-8.04E+01	8.53E+01
		79.62		2.62	1.98E+02		-2.43E+02	9.89E+01
		81.00	*	34.06	1.11E+01		2.52E+01	5.52E+00
		160.61		0.64	8.24E+02		-1.95E+03	4.11E+02
		223.23		0.45	1.09E+03		9.30E+01	5.43E+02
		276.40		7.16	7.15E+01		-6.20E+01	3.56E+01
		302.85	*	18.33	1.89E+01		4.95E+01	9.38E+00
		356.02		62.05	1.66E+01		-9.08E+01	8.28E+00

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BA-133	383.85	8.94	5.27E+01	1.11E+01	-4.52E+00	2.62E+01
I-133	529.87	87.00	8.18E+19	8.18E+19	-3.04E+19	4.06E+19
	875.33	4.51	2.03E+21		8.89E+19	1.00E+21
CS-134	475.35	1.47	3.18E+02	5.93E+00	-1.86E+02	1.58E+02
	563.23	8.38	5.67E+01		-1.83E+01	2.81E+01
	569.32	15.43	3.18E+01		8.62E+00	1.58E+01
	604.70	97.56	1.12E+01		-3.38E+00	5.57E+00
	795.84	85.44	5.93E+00		-1.38E+01	2.94E+00
	801.93	8.73	7.09E+01		-4.69E+01	3.51E+01
	1038.57	1.00	5.64E+02		1.10E+02	2.79E+02
	1167.94	1.80	3.27E+02		-5.32E+02	1.62E+02
	1365.15	3.04	1.86E+02		-1.59E+01	9.16E+01
@ I-134	405.45	7.35	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	540.83	7.60	1.00E+26		1.00E+26	1.00E+20
@	595.36	11.20	1.00E+26		1.00E+26	1.00E+20
@	621.79	10.60	1.00E+26		1.00E+26	1.00E+20
@	677.34	7.80	1.00E+26		1.00E+26	1.00E+20
@	847.03	95.40	1.00E+26		1.00E+26	1.00E+20
@	884.09	64.90	1.00E+26		1.00E+26	1.00E+20
@	1072.55	15.00	1.00E+26		1.00E+26	1.00E+20
@	1136.16	9.20	1.00E+26		1.00E+26	1.00E+20
CS-135	787.20	100.00	5.99E+00	5.62E+00	1.80E+01	2.97E+00
	846.10	95.90	5.62E+00		-5.02E+00	2.78E+00
@ I-135	417.63	3.55	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	546.56	7.20	1.00E+26		1.00E+26	1.00E+20
@	836.80	6.73	1.00E+26		1.00E+26	1.00E+20
@	1038.76	8.00	1.00E+26		1.00E+26	1.00E+20
@	1124.00	3.64	1.00E+26		1.00E+26	1.00E+20
@	1131.51	22.74	1.00E+26		1.00E+26	1.00E+20
@	1260.41	28.90	1.00E+26		1.00E+26	1.00E+20
@	1457.56	8.73	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.62	1.00E+26		1.00E+26	1.00E+20
@	1706.46	4.13	1.00E+26		1.00E+26	1.00E+20
@	1791.20	7.77	1.00E+26		1.00E+26	1.00E+20
@ XE-135	249.79	90.20	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	608.18	2.90	1.00E+26		1.00E+26	1.00E+20
@ XE-135M	526.56	80.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
CS-136	66.88	4.80	2.02E+03	9.37E+01	2.29E+04	1.01E+03
	86.36	5.20	1.78E+03		9.33E+03	8.86E+02
	153.25	5.77	1.82E+03		-9.91E+02	9.09E+02
	163.92	3.40	2.80E+03		-1.02E+03	1.40E+03
	176.60	10.00	9.27E+02		-3.69E+02	4.62E+02
	273.65	11.10	1.11E+03		7.44E+03	5.55E+02
	340.55	42.30	2.24E+02		-5.44E+01	1.11E+02
	818.51	100.00	9.37E+01		-3.34E+01	4.64E+01
	1048.07	80.00	1.28E+02		-5.40E+01	6.34E+01
	1235.36	20.10	1.02E+03		-7.66E+00	5.08E+02
CS-137	661.66	85.10	6.32E+00	6.32E+00	-1.57E+01	3.14E+00
@ CS-138	138.10	1.49	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	227.76	1.51	1.00E+26		1.00E+26	1.00E+20
@	408.98	4.66	1.00E+26		1.00E+26	1.00E+20
@	462.80	30.70	1.00E+26		1.00E+26	1.00E+20
@	547.00	10.76	1.00E+26		1.00E+26	1.00E+20

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
@ CS-138	871.80	5.11	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1009.78	29.80	1.00E+26		1.00E+26	1.00E+20
@	1147.22	1.24	1.00E+26		1.00E+26	1.00E+20
@	1343.59	1.14	1.00E+26		1.00E+26	1.00E+20
@	1435.86	76.30	1.00E+26		1.00E+26	1.00E+20
LA-138	788.74	33.60	1.78E+01	8.60E+00	-4.15E+00	8.85E+00
	1435.80	66.40	8.60E+00		-7.60E+00	4.24E+00
@ BA-139	165.86	23.60	1.00E+26	1.00E+26	1.00E+26	1.00E+20
CE-139	165.85	79.90	8.53E+00	8.53E+00	-1.45E+00	4.25E+00
BA-140	162.66	6.21	1.69E+03	3.85E+02	-2.92E+03	8.41E+02
	304.85	4.30	2.39E+03		-2.16E+04	1.19E+03
	423.72	3.10	3.61E+03		-2.23E+03	1.79E+03
	437.58	1.93	5.00E+03		-4.10E+03	2.48E+03
	537.26	24.39	3.85E+02		-1.12E+02	1.91E+02
LA-140	328.76	20.32	2.06E+11	5.38E+10	1.58E+11	1.02E+11
	432.49	2.90	1.35E+12		-7.39E+11	6.71E+11
	487.02	45.50	8.72E+10		7.91E+10	4.33E+10
	751.64	4.33	8.74E+11		-7.47E+11	4.33E+11
	815.77	23.30	1.68E+11		-5.70E+11	8.30E+10
	867.85	5.50	8.08E+11		-5.91E+11	4.00E+11
	919.55	2.66	1.72E+12		-1.27E+12	8.52E+11
	925.19	6.90	6.61E+11		-5.73E+12	3.27E+11
	1596.21	95.40	5.38E+10		-3.65E+10	2.65E+10
CE-141	145.44	48.20	3.92E+01	3.92E+01	-2.40E+01	1.95E+01
CE-144	80.12	1.36	3.98E+02	5.01E+01	-3.23E+03	1.98E+02
	133.51	11.09	5.01E+01		-1.10E+01	2.50E+01
PM-144	476.78	41.98	1.20E+01	4.82E+00	-6.86E+00	5.96E+00
	618.01	98.59	4.84E+00		-7.41E+02	2.39E+00
	694.00	0.55	8.56E+02		-1.17E+03	4.23E+02
	696.49	99.49	4.82E+00		-8.89E+00	2.38E+00
	778.57	1.51	3.57E+02		-4.62E+03	1.77E+02
	814.14	0.55	9.70E+02		-3.87E+03	4.80E+02
PM-146	146.20	0.22	2.69E+03	7.34E+00	-3.95E+03	1.34E+03
	453.88	66.00	7.34E+00		-2.76E+00	3.64E+00
	589.80	0.43	1.07E+03		-1.76E+03	5.29E+02
	633.25	1.12	3.84E+02		2.47E+01	1.90E+02
	735.93	22.80	1.97E+01		-2.74E+01	9.76E+00
	747.24	17.71	2.71E+01		1.04E+01	1.34E+01
ND-147	91.11	27.90	4.67E+02	4.67E+02	-2.93E+03	2.33E+02
	319.41	1.95	7.66E+03		-2.05E+04	3.81E+03
	398.15	0.87	1.91E+04		-4.07E+04	9.48E+03
	439.89	1.20	1.29E+04		-6.41E+03	6.41E+03
	531.02	13.09	1.15E+03		-3.12E+02	5.71E+02
EU-152	121.78	28.42	1.64E+01	1.64E+01	5.13E+00	8.19E+00
	244.70	7.49	9.89E+01		-1.24E+02	4.93E+01
	295.94	0.44	2.50E+03		6.11E+04	1.25E+03
	344.28	26.58	1.80E+01		-1.19E+02	8.96E+00
	411.12	2.23	2.38E+02		-6.53E+01	1.18E+02
	443.98	3.09	1.57E+02		-4.84E+01	7.79E+01
	688.67	0.83	5.20E+02		-3.58E+01	2.57E+02
	778.90	12.96	3.75E+01		-3.51E+02	1.86E+01
	867.39	4.15	1.35E+02		-8.28E+01	6.68E+01
	964.13	14.50	4.20E+01		4.42E+01	2.08E+01

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	EU-152	1005.28		0.65	8.74E+02	1.64E+01	2.07E+02	4.32E+02
		1085.87		10.16	5.38E+01		-1.41E+01	2.66E+01
		1089.70		1.71	3.21E+02		-1.16E+02	1.58E+02
		1112.12		13.54	4.14E+01		-1.30E+03	2.04E+01
		1212.95		1.40	4.30E+02		-2.22E+02	2.12E+02
		1299.12		1.63	3.27E+02		-5.85E+01	1.61E+02
		1408.01		20.87	4.71E+01		2.47E+02	2.34E+01
+	GD-153	69.67		2.54	2.33E+02	1.16E+01	-4.96E+02	1.16E+02
		97.43	*	30.20	1.16E+01		-2.33E+00	5.76E+00
		103.18		21.44	1.95E+01		-1.48E+01	9.70E+00
	EU-154	123.07		40.78	1.16E+01	1.16E+01	3.34E+00	5.77E+00
		247.93		6.95	6.82E+01		-5.74E+02	3.40E+01
		444.49		0.56	8.69E+02		3.83E+02	4.32E+02
		582.10		0.89	5.63E+02		5.97E+02	2.79E+02
		591.76		4.99	9.17E+01		-4.65E+01	4.54E+01
		692.42		1.80	2.35E+02		-2.01E+02	1.16E+02
		723.30		20.22	2.48E+01		-1.29E+01	1.23E+01
		756.80		4.57	1.05E+02		-4.32E+01	5.20E+01
		815.53		0.52	9.39E+02		-3.74E+03	4.64E+02
		845.39		0.59	9.41E+02		-7.81E+02	4.66E+02
		873.19		12.27	4.73E+01		3.00E+00	2.34E+01
		892.78		0.52	1.18E+03		4.89E+01	5.85E+02
		904.08		0.90	6.98E+02		-1.87E+01	3.46E+02
		996.26		10.59	5.35E+01		-1.03E+01	2.64E+01
		1004.72		18.00	3.17E+01		6.17E+00	1.57E+01
		1246.15		0.87	7.24E+02		-9.54E+03	3.58E+02
		1274.44		35.19	1.61E+01		-5.29E+01	7.95E+00
		1494.05		0.70	9.74E+02		-1.74E+02	4.81E+02
		1596.49		1.80	3.61E+02		4.82E+01	1.78E+02
	EU-155	45.30		1.32	3.37E+02	1.17E+01	7.48E+02	1.68E+02
		60.01		1.13	3.38E+02		-2.66E+02	1.68E+02
		86.54	*	30.70	1.17E+01		3.37E+01	5.81E+00
		105.31		21.15	1.74E+01		-7.11E+00	8.68E+00
	W-187	72.00		11.10	2.47E+18	1.09E+18	-6.54E+18	1.23E+18
		134.25		8.80	3.79E+18		-8.72E+17	1.89E+18
		479.55		21.80	1.53E+18		-3.89E+17	7.58E+17
		618.26		6.28	4.66E+18		-7.14E+20	2.31E+18
		625.52		1.09	2.64E+19		-4.13E+18	1.31E+19
		685.73		27.30	1.09E+18		7.24E+17	5.41E+17
		772.89		4.12	1.44E+19		-8.23E+19	7.14E+18
	IR-192	295.96		28.66	6.39E+01	9.60E+00	1.57E+03	3.19E+01
		308.46		30.00	2.58E+01		-3.94E+01	1.28E+01
		316.51		82.81	9.60E+00		-7.53E+00	4.78E+00
		468.07		47.83	1.59E+01		-4.74E+00	7.92E+00
		588.58		4.51	1.69E+02		-2.31E+02	8.38E+01
		604.41		8.23	2.12E+02		-6.40E+01	1.05E+02
		612.47		5.31	6.56E+02		-8.67E+03	3.27E+02
	TL-201	135.34		2.56	5.76E+07	1.54E+07	-1.65E+07	2.87E+07
		167.43		10.00	1.54E+07		-3.25E+06	7.66E+06
	HG-203	279.20		81.46	1.34E+01	1.34E+01	-1.24E+01	6.65E+00
	TL-208	277.36		6.31	7.90E+01	5.86E+00	-6.99E+01	3.93E+01
		510.77		22.60	2.36E+01		7.73E+01	1.17E+01
		583.19		84.50	5.86E+00		7.63E+00	2.91E+00

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TL-208	763.13		1.81	3.19E+02	5.86E+00	-2.63E+02	1.58E+02
		860.56		12.42	4.52E+01		5.70E+00	2.24E+01
+	PB-210	46.54	*	4.25	9.77E+01	9.77E+01	1.75E+02	4.86E+01
	BI-211	351.06		12.91	1.23E+02	1.23E+02	4.71E+03	6.14E+01
+	PB-211	404.85	*	3.78	9.99E+01	9.94E+01	4.93E+02	4.95E+01
		427.09	*	1.76	2.65E+02		4.95E+02	1.32E+02
		704.64		0.46	1.12E+03		2.28E+03	5.56E+02
		766.51		0.62	1.43E+03		-2.42E+02	7.13E+02
		832.01	*	3.52	9.94E+01		2.41E+02	4.90E+01
	BI-212	727.33		6.58	6.93E+01	6.93E+01	-6.76E+01	3.43E+01
		785.37		1.10	5.42E+02		-1.70E+02	2.69E+02
		1078.62		0.56	9.47E+02		7.24E+01	4.68E+02
		1620.50		1.49	3.42E+02		-4.36E+01	1.68E+02
	PB-212	115.18		0.59	6.39E+02	1.54E+01	3.29E+02	3.18E+02
		238.63		43.30	1.54E+01		4.11E+01	7.70E+00
		300.09		3.28	1.79E+02		-5.29E+03	8.92E+01
+	BI-214	609.31	*	44.80	1.03E+01	1.03E+01	1.54E+03	5.13E+00
		665.45	*	1.29	2.73E+02		1.84E+03	1.35E+02
		768.36	*	4.80	8.99E+01		1.66E+03	4.44E+01
		806.17	*	1.22	3.44E+02		1.61E+03	1.70E+02
		934.06	*	3.03	1.58E+02		1.58E+03	7.80E+01
		1120.29	*	14.80	3.25E+01		1.57E+03	1.60E+01
		1155.19	*	1.64	2.14E+02		1.57E+03	1.05E+02
		1207.68	*	0.49	7.87E+02		1.39E+03	3.86E+02
		1238.11	*	5.86	8.81E+01		1.57E+03	4.35E+01
		1280.96	*	1.44	2.75E+02		1.48E+03	1.35E+02
		1377.67	*	3.92	1.01E+02		1.63E+03	4.95E+01
		1385.31	*	0.89	4.44E+02		1.39E+03	2.17E+02
		1401.50	*	1.55	2.56E+02		1.30E+03	1.25E+02
		1407.98	*	2.80	1.43E+02		1.36E+03	7.00E+01
		1415.80		0.48	1.27E+03		-4.61E+03	6.29E+02
		1509.23	*	2.12	2.19E+02		1.59E+03	1.08E+02
		1583.22	*	0.70	4.97E+02		1.58E+03	2.42E+02
		1661.28	*	1.14	2.43E+02		1.26E+03	1.17E+02
		1729.59	*	2.88	1.12E+02		1.56E+03	5.46E+01
		1764.49	*	15.36	2.45E+01		1.56E+03	1.19E+01
		1847.42	*	2.04	1.17E+02		1.44E+03	5.61E+01
+	PB-214	53.23		1.11	3.36E+02	1.58E+01	-1.58E+02	1.67E+02
		241.98	*	7.50	7.24E+01		1.01E+03	3.61E+01
		258.79	*	0.55	7.01E+02		1.40E+03	3.49E+02
		295.21	*	18.50	1.96E+01		1.44E+03	9.73E+00
		351.92	*	35.80	1.58E+01		1.70E+03	7.87E+00
		785.91	*	0.85	5.47E+02		2.11E+03	2.71E+02
		839.03	*	0.63	7.79E+02		-2.16E+02	3.85E+02
+	RN-219	130.59		0.12	4.00E+03	3.46E+01	-1.08E+03	1.99E+03
		271.23	*	10.80	3.46E+01		3.99E+02	1.72E+01
		401.81	*	6.37	6.20E+01		4.11E+02	3.08E+01
	RN-220	549.73		0.11	4.13E+03	4.13E+03	-7.21E+02	2.05E+03
+	RA-223	122.32		1.19	3.91E+02	2.58E+01	1.61E+02	1.95E+02
		144.23	*	3.22	1.67E+02		1.06E+03	8.33E+01
		154.21	*	5.62	7.59E+01		3.91E+02	3.78E+01
		158.63		0.69	7.66E+02		-1.23E+03	3.82E+02
		179.54		0.15	3.40E+03		-2.64E+04	1.70E+03

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	RA-223	269.46	*	13.70	2.58E+01	2.58E+01	3.81E+02	1.28E+01
		288.18		0.16	3.14E+03		-1.29E+05	1.56E+03
		323.87	*	3.93	8.42E+01		1.86E+02	4.18E+01
		328.40		0.21	2.55E+03		5.06E+03	1.27E+03
		338.28	*	2.79	1.21E+02		1.20E+02	5.99E+01
		342.90		0.22	2.20E+03		-1.43E+04	1.10E+03
		346.80		0.18	2.70E+03		-1.26E+04	1.34E+03
		371.68		0.48	9.50E+02		6.24E+02	4.72E+02
	RA-224	240.99		3.97	1.88E+02	1.88E+02	2.05E+03	9.40E+01
	RA-226	186.10	*	3.50	1.27E+02	1.27E+02	1.78E+03	6.31E+01
+	TH-227	50.13	*	8.00	3.60E+01	3.60E+01	-1.62E+01	1.79E+01
		79.72		1.89	2.72E+02		-3.33E+02	1.36E+02
		93.93	*	1.37	2.31E+02		-8.83E+02	1.15E+02
		210.65	*	1.10	4.10E+02		7.02E+01	2.04E+02
		235.97	*	12.70	5.72E+01		-3.19E+02	2.85E+01
		256.25	*	7.01	5.54E+01		3.77E+02	2.76E+01
		286.12		1.54	3.38E+02		-6.38E+02	1.68E+02
		300.00	*	2.67	1.32E+02		6.70E+02	6.53E+01
		304.51		1.23	4.30E+02		-9.47E+03	2.14E+02
		329.85	*	2.69	1.33E+02		1.40E+02	6.62E+01
		334.38	*	1.05	3.32E+02		4.85E+01	1.65E+02
	AC-228	99.50		1.28	2.94E+02	2.31E+01	-2.39E+02	1.47E+02
		129.07		2.45	1.94E+02		-6.42E+01	9.68E+01
		153.98		0.74	7.73E+02		-2.78E+02	3.85E+02
		209.25		3.88	1.30E+02		-5.06E+01	6.48E+01
		270.24		3.43	2.14E+02		2.74E+03	1.07E+02
		327.90		3.06	1.81E+02		6.52E+02	9.00E+01
		332.37		0.40	1.34E+03		2.03E+02	6.65E+02
		338.32		11.25	4.59E+01		1.67E+00	2.28E+01
		409.46		1.94	3.01E+02		-2.75E+01	1.50E+02
		463.01		4.44	1.05E+02		-2.72E+01	5.20E+01
		508.96		0.47	1.13E+03		3.56E+03	5.62E+02
		562.50		0.87	5.18E+02		-1.65E+02	2.57E+02
		755.32		1.00	4.72E+02		-5.61E+01	2.34E+02
		772.29		1.50	5.91E+02		-2.81E+03	2.94E+02
		782.14		0.50	1.15E+03		-1.09E+03	5.72E+02
		794.95		4.34	1.12E+02		-1.58E+02	5.53E+01
		830.49		0.55	1.12E+03		5.80E+02	5.54E+02
		835.71		1.68	3.92E+02		-1.14E+02	1.95E+02
		840.38		0.94	6.26E+02		-5.17E+02	3.10E+02
		904.20		0.78	7.95E+02		-2.13E+01	3.94E+02
		911.21		26.60	2.31E+01		1.36E+01	1.14E+01
		964.77		5.11	1.18E+02		1.25E+02	5.86E+01
		968.97		16.20	3.76E+01		-2.20E+01	1.86E+01
		1247.08		0.50	1.06E+03		-1.64E+04	5.22E+02
		1459.14		0.80	7.47E+02		8.10E+01	3.68E+02
		1495.91		0.89	7.62E+02		-7.78E+01	3.76E+02
		1580.54		0.61	1.13E+03		2.05E+03	5.56E+02
		1588.21		3.27	2.11E+02		-2.34E+02	1.04E+02
		1630.63		1.60	2.99E+02		-7.12E+01	1.46E+02
+	TH-228	84.37	*	1.23	2.95E+02	2.95E+02	1.77E+03	1.47E+02
		215.99		0.26	1.86E+03		-4.72E+02	9.29E+02
	TH-229	75.09		0.61	9.49E+02	1.18E+02	8.61E+03	4.73E+02

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TH-229	86.35		3.90	1.29E+02	1.18E+02	6.77E+02	6.43E+01
		124.60		1.43	3.29E+02		1.54E+02	1.64E+02
		136.99		1.18	4.21E+02		-1.13E+03	2.10E+02
		148.15		0.88	5.96E+02		-2.33E+03	2.97E+02
		154.34		0.77	7.44E+02		3.02E+03	3.71E+02
		156.41		1.19	4.85E+02		-2.38E+02	2.42E+02
		193.51		4.41	1.18E+02		-9.43E+02	5.87E+01
		204.69		0.60	8.52E+02		-7.62E+01	4.25E+02
		210.85		2.77	1.82E+02		-4.01E+01	9.05E+01
+	PA-231	283.69	*	1.70	5.05E+02	1.43E+02	-6.50E+03	2.52E+02
		300.07	*	2.46	1.43E+02		7.27E+02	7.09E+01
		302.65	*	2.20	1.56E+02		4.09E+02	7.74E+01
		330.06	*	1.40	2.56E+02		2.68E+02	1.27E+02
+	TH-231	81.23	*	0.89	4.20E+02	5.50E+01	9.56E+02	2.09E+02
		84.21	*	6.60	5.50E+01		3.30E+02	2.74E+01
		89.95	*	0.94	3.63E+02		1.86E+02	1.81E+02
	TH-232	63.81		0.27	1.45E+03	1.45E+03	-5.19E+03	7.21E+02
	U-232	57.78		0.20	1.85E+03	1.85E+03	-1.78E+03	9.22E+02
		129.08		0.07	6.91E+03		-2.28E+03	3.44E+03
	PA-233	75.35		1.39	4.16E+02	1.21E+01	3.78E+03	2.08E+02
		86.81		1.97	2.39E+02		2.21E+02	1.19E+02
		103.97		0.87	4.12E+02		-2.90E+02	2.05E+02
		271.48		0.33	2.26E+03		3.03E+04	1.13E+03
		300.34		6.62	8.88E+01		-2.62E+03	4.42E+01
		312.17		38.60	1.21E+01		-2.39E+00	6.03E+00
		340.81		4.47	1.15E+02		-2.80E+01	5.73E+01
		375.45		0.68	6.78E+02		5.00E+02	3.37E+02
		398.62		1.39	3.90E+02		-6.47E+02	1.94E+02
		415.76		1.75	3.04E+02		-2.07E+01	1.51E+02
+	U-233	42.44		0.09	4.80E+03	4.80E+03	-1.51E+04	2.39E+03
		54.70		0.02	2.08E+04		-7.14E+03	1.04E+04
		97.13	*	0.02	1.49E+04		-3.01E+03	7.42E+03
	PA-234	62.70		1.55	2.50E+02	2.68E+01	-1.28E+03	1.25E+02
		99.86		3.19	1.17E+02		-1.45E+02	5.83E+01
		125.46		0.78	6.05E+02		2.80E+02	3.01E+02
		131.30		18.00	2.68E+01		-4.81E-01	1.33E+01
		140.50		0.81	6.33E+02		-6.11E+02	3.16E+02
		152.71		5.97	9.59E+01		-9.49E+01	4.78E+01
		159.48		0.65	8.13E+02		-1.46E+03	4.06E+02
		170.85		0.50	1.02E+03		-2.58E+02	5.07E+02
		186.15		1.76	3.69E+02		3.53E+03	1.84E+02
		193.73		0.49	1.06E+03		-8.25E+03	5.28E+02
		200.97		0.90	5.74E+02		8.62E+01	2.86E+02
		203.12		1.23	4.19E+02		1.03E+02	2.09E+02
		227.00		9.99	4.83E+01		-1.83E+01	2.40E+01
		245.37		0.75	9.20E+02		-1.82E+03	4.58E+02
		249.22		2.47	1.90E+02		-2.33E+03	9.44E+01
		272.28		1.08	6.92E+02		9.61E+03	3.45E+02
		293.79		2.99	3.63E+02		8.89E+03	1.81E+02
		330.40		0.77	6.77E+02		-4.10E+02	3.37E+02
		369.50		2.47	1.83E+02		9.71E+01	9.09E+01
		372.00		1.21	3.77E+02		2.66E+02	1.88E+02
		458.68		1.13	4.26E+02		-1.60E+02	2.12E+02

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	PA-234	506.75		1.29	3.84E+02	2.68E+01	8.71E+00	1.91E+02
		513.40		1.10	4.82E+02		-1.45E+02	2.40E+02
		521.40		0.74	5.90E+02		-1.13E+03	2.93E+02
		565.20		1.03	4.44E+02		-9.69E+01	2.20E+02
		569.32		11.80	3.95E+01		1.07E+01	1.96E+01
		602.60		0.54	8.60E+02		-6.68E+02	4.26E+02
		663.90		0.54	1.07E+03		-1.36E+03	5.32E+02
		666.50		1.16	4.94E+02		2.02E+03	2.45E+02
		669.70		0.99	5.71E+02		-8.65E+02	2.83E+02
		692.60		1.24	3.37E+02		-2.88E+02	1.67E+02
		699.03		3.61	1.30E+02		-1.38E+02	6.45E+01
		705.90		2.27	2.26E+02		-1.54E+02	1.12E+02
		730.90		0.63	7.25E+02		2.81E+02	3.59E+02
		733.39		6.90	6.45E+01		-5.15E+01	3.19E+01
		738.00		1.15	3.95E+02		-2.10E+02	1.95E+02
		742.81		2.06	2.34E+02		2.80E+02	1.16E+02
		755.00		1.22	3.86E+02		-3.19E+01	1.91E+02
		780.40		0.90	5.54E+02		-8.36E+02	2.74E+02
		786.27		1.19	5.03E+02		-9.83E+01	2.49E+02
		794.90		1.34	3.62E+02		-5.11E+02	1.79E+02
		796.10		2.58	1.87E+02		-4.35E+02	9.24E+01
		805.52		3.14	1.96E+02		6.07E+02	9.71E+01
		819.20		1.88	2.73E+02		-4.68E+01	1.35E+02
		824.65		3.12	1.73E+02		-1.96E+02	8.56E+01
		831.50		4.12	1.48E+02		5.42E+01	7.36E+01
		876.00		2.52	2.31E+02		3.44E+01	1.14E+02
		880.50		10.40	5.71E+01		1.78E+01	2.83E+01
		883.24		9.58	6.20E+01		1.17E+01	3.07E+01
		898.67		3.24	1.90E+02		4.18E+01	9.44E+01
		926.00		16.80	3.38E+01		-3.11E+02	1.67E+01
		946.18		15.00	3.76E+01		-3.74E+01	1.86E+01
		980.48		5.15	1.09E+02		-1.99E+01	5.39E+01
		984.20		1.62	3.48E+02		1.70E+01	1.72E+02
		1028.70		0.57	9.60E+02		7.96E+01	4.75E+02
		1083.20		0.50	1.08E+03		-2.24E+02	5.34E+02
		1352.90		1.15	4.61E+02		-5.31E+01	2.27E+02
		1393.90		2.06	2.67E+02		-3.99E+01	1.31E+02
		1668.40		0.76	7.46E+02		-1.42E+03	3.67E+02
		1693.80		0.69	6.90E+02		-3.19E+01	3.38E+02
	PA-234M	766.36		0.29	3.02E+03	6.73E+02	-5.11E+02	1.50E+03
		811.00		0.51	1.19E+03		-2.33E+03	5.88E+02
		1001.03		0.84	6.73E+02		1.64E+02	3.33E+02
	TH-234	63.29		4.84	8.03E+01	7.22E+01	-3.50E+02	4.00E+01
		83.30		0.08	6.64E+03		1.25E+04	3.31E+03
		92.59		5.58	7.22E+01		-1.70E+02	3.60E+01
		112.81		0.28	1.33E+03		6.70E+02	6.64E+02
	U-234	53.20		0.12	3.03E+03	3.03E+03	-1.42E+03	1.51E+03
		120.90		0.03	1.36E+04		2.80E+03	6.77E+03
+	U-235	109.16		1.54	2.35E+02	7.75E+00	-1.37E+02	1.17E+02
		143.76	*	10.96	4.91E+01		3.12E+02	2.45E+01
		163.36		5.08	1.02E+02		-8.93E+01	5.08E+01
		185.71	*	57.20	7.75E+00		1.09E+02	3.86E+00
		194.94		0.63	8.26E+02		-3.05E+03	4.12E+02

Analysis Report for 590213R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	U-235	202.11		1.08	4.79E+02	7.75E+00	3.15E+02	2.39E+02
		205.31		5.01	1.02E+02		-8.99E+00	5.08E+01
+	NP-237	57.10		0.39	9.42E+02	2.83E+01	-1.40E+03	4.69E+02
		86.48	*	12.40	2.83E+01		8.17E+01	1.41E+01
		94.64	*	0.60	5.28E+02		-2.02E+03	2.63E+02
		143.25	*	0.43	1.25E+03		7.95E+03	6.23E+02
	NP-239	106.12		27.20	1.53E+08	1.53E+08	-8.32E+07	7.63E+07
		209.75		3.42	1.71E+09		-5.64E+08	8.52E+08
		228.18		10.76	5.20E+08		-9.36E+08	2.59E+08
		277.60		14.38	3.99E+08		-3.56E+08	1.99E+08
		334.31		2.07	2.81E+09		-3.61E+09	1.40E+09
	AM-241	59.54		35.90	1.03E+01	1.03E+01	-9.32E+00	5.15E+00
	CM-241	132.41		3.90	4.00E+02	2.05E+01	5.17E+01	1.99E+02
		165.01		3.40	4.90E+02		-8.38E+01	2.44E+02
		205.88		2.67	6.13E+02		-1.26E+02	3.05E+02
		430.63		4.06	4.20E+02		-1.19E+02	2.09E+02
		463.27		1.23	1.22E+03		-3.15E+02	6.03E+02
		471.80		71.30	2.05E+01		-2.64E+00	1.02E+01
		636.88		1.53	8.84E+02		1.09E+02	4.38E+02
+	AM-243	74.66	*	68.20	5.83E+00	5.83E+00	2.48E+01	2.90E+00

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

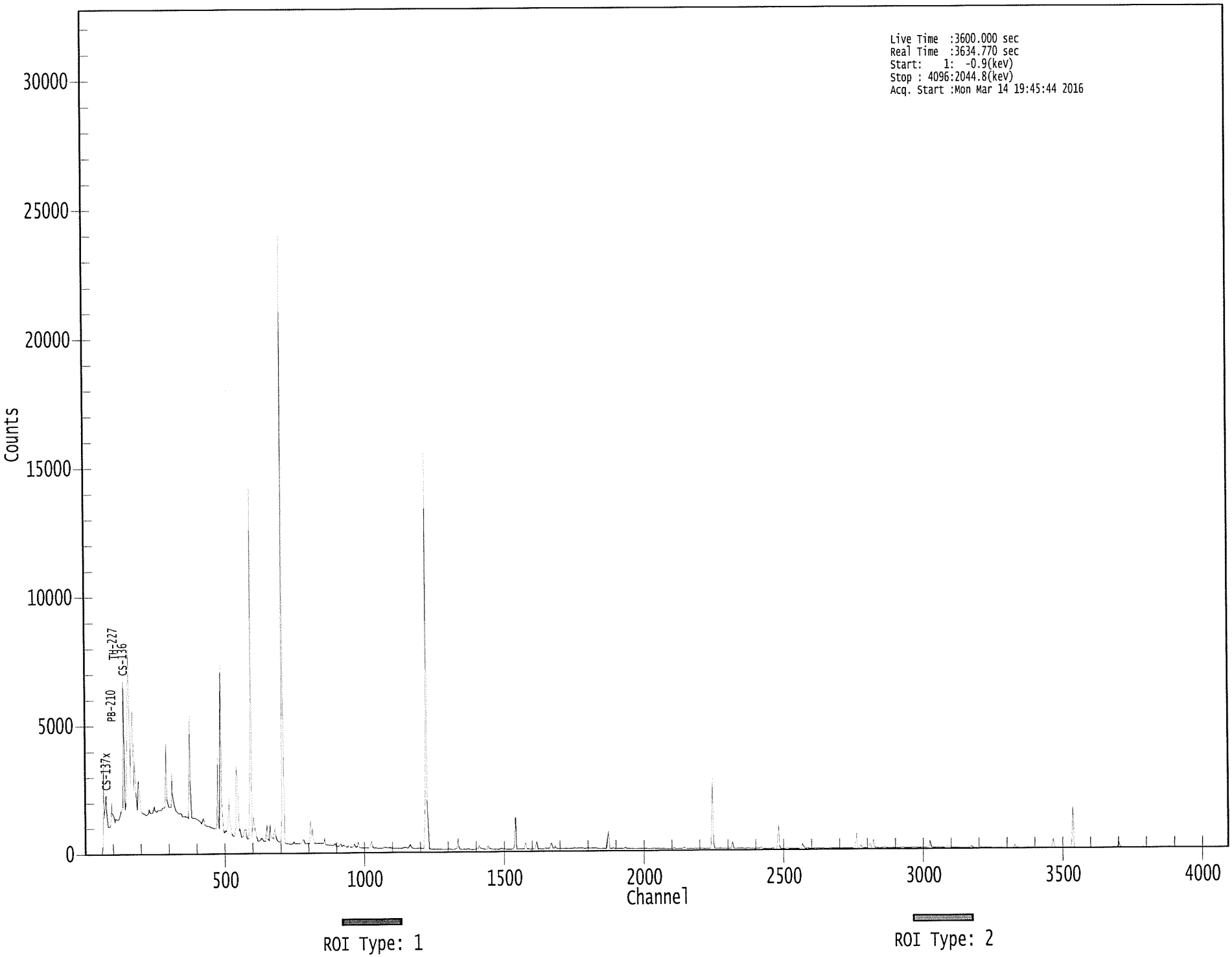
No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

0000007055.CNF



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Apex™

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 590214R2
Sample Description	: Tetra Tech TO# 160115-1
Sample Type	: Soil
Sample Size	: 2.196E+02 grams
Facility	: Default
Sample Taken On	: 1/19/2016 2:00:00PM
Acquisition Started	: 3/14/2016 8:48:43PM
Procedure	: Raised 300g can soil
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3606.3 seconds
Dead Time	: 0.18 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7059

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

ENERGY CALIBRATION REPORT

Detector Name : DET01

ENERGY CALIBRATION COEFFICIENTS

Energy Calibrate Performed on : 11/30/2015 7:51:04PM
by : Administrator
Energy Calibrate Type : POLY

Energy (keV) = -1.445 + 0.500*ch + -1.06E-07*ch^2 + 0.00E+00*ch^3

SHAPE CALIBRATION COEFFICIENTS

Shape Calibrate Performed on : 11/30/2015 7:51:04PM
by : Administrator

FWHM = 0.610 + 3.62E-02 *E^1/2

LOW TAIL = 0.00E+00 + 0.00E+00*E

ENERGY CALIBRATION RESULTS TABLE

Centroid Channel	Centroid error	Energy (keV)
121.97	0.13	59.54
1326.58	0.01	661.66
2669.40	0.03	1332.50

SHAPE CALIBRATION RESULTS TABLE

Energy (keV)	FWHM channels	FWHM error	TAIL channels	TAIL error
59.54	2.12	0.24	0.00	0.00
661.66	3.08	0.02	0.00	0.00
1332.50	3.90	0.06	0.00	0.00

EFFICIENCY CALIBRATION REPORT

Detector Name : DET01
Geometry Description : Raised 300gm Can Soil
Efficiency Calibration Performed on : 12/20/2005 11:10:05AM
by : Administrator
Efficiency Type Used : EMPIRICAL

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

Efficiency Triplets

Energy	*% Efficiency*	*Error*	*Computed*	*Error*	*% Difference*
59.50	6.77E-01	2.04E-02			
88.00	6.93E-01	2.10E-02			
122.10	7.30E-01	2.28E-02			
165.90	6.33E-01	3.05E-02			
391.70	3.38E-01	1.74E-02			
661.70	2.30E-01	6.91E-03			
898.00	1.91E-01	8.56E-03			
1173.20	1.46E-01	4.40E-03			
1332.50	1.33E-01	3.99E-03			
1836.00	1.03E-01	3.36E-03			

DUAL Efficiency Calibration Equation

Single Equation Terms

Offset :	-3.20E+01
Slope :	1.70E+01
Quadratic :	-3.77E+00
Cubic :	3.53E-01
4th Order :	-1.23E-02
5th Order :	0.00E+00
6th Order :	0.00E+00
7th Order :	0.00E+00
8th Order :	0.00E+00
9th Order :	0.00E+00

EMPIRICAL Efficiency Calibration Equation

Empirical Equation Terms

Scaling :	9.48E+02
Offset :	-6.35E+00
Slope :	8.02E-01
Quadratic :	2.35E-02
Cubic :	-1.58E-02
4th Order :	-1.23E-02
5th Order :	0.00E+00

LINEAR Efficiency Calibration Equation

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

Linear Equation Terms

Offset :	-1.79E-04
Slope :	-2.75E+00
Quadratic :	1.74E+02
Cubic :	-1.42E+04
4th Order :	2.49E+05
5th Order :	6.29E+06
6th Order :	0.00E+00
7th Order :	0.00E+00
8th Order :	0.00E+00
9th Order :	0.00E+00

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

PEAK LOCATE REPORT

Peak Locate Performed on : 3/30/2016 2:07:05PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 4.30

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	46.51	95.91	0.3556	6.44
2	50.23	103.36	0.2528	10.05
3	63.33	129.55	0.1773	17.62
4	67.77	138.44	0.1712	19.23
5	74.85	152.66	0.2454	10.96
6	77.26	157.29	0.1899	19.63
7	81.16	165.34	0.1986	16.68
8	83.90	170.61	0.1610	23.51
9	92.72	188.36	0.1710	20.05
10	94.64	192.53	0.2706	7.20
11	122.42	247.74	0.3597	5.72
12	144.11	291.14	0.2005	13.82
13	154.31	311.53	0.2002	13.34
14	185.96	374.83	0.1433	26.31
15	210.85	424.64	0.3189	5.00
16	236.14	475.22	0.1610	20.44
17	242.12	487.19	0.1681	19.78
18	256.36	515.66	0.2027	13.65
19	269.60	541.96	0.1815	19.11
20	271.38	545.95	0.2379	13.22
21	283.82	570.70	0.3355	6.02
22	286.35	575.53	0.3106	5.47
23	295.37	593.68	0.1320	29.69
24	300.18	603.30	0.2105	11.27

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
25	302.78	608.48	0.2717	7.01
26	324.10	651.17	0.2187	10.92
27	330.05	663.09	0.2142	11.04
28	334.44	671.90	0.3072	5.35
29	338.49	679.94	0.2291	9.97
30	352.03	707.05	0.1053	41.39
31	402.00	807.01	0.1871	13.48
32	405.10	813.34	0.2304	8.91
33	427.18	857.42	0.3065	4.97
34	609.62	1222.44	0.1028	37.68
35	665.80	1334.86	0.2804	5.47
36	768.72	1540.84	0.2157	8.51
37	786.36	1576.14	0.2881	4.75
38	806.38	1616.20	0.2835	5.02
39	832.43	1668.35	0.2365	6.79
40	934.55	1872.74	0.2091	9.33
41	1001.70	2007.16	0.2083	8.91
42	1120.81	2245.57	0.1422	16.76
43	1155.73	2315.49	0.2388	6.17
44	1238.75	2481.70	0.1845	10.45
45	1378.31	2761.13	0.1918	8.46
46	1408.95	2822.47	0.2185	6.95
47	1510.18	3025.20	0.2544	5.25
48	1661.85	3328.93	0.2534	5.03
49	1730.45	3466.33	0.2217	6.02
50	1765.23	3536.00	0.1397	15.50

? = Adjacent peak noted
Errors quoted at 1.000 sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 3/30/2016 2:07:05PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	46.51	89 -	99	95.91	7.59E+01	76.92	3.77E+03	0.83
	2	50.23	99 -	107	103.36	3.93E+02	75.10	3.62E+03	0.98
	3	63.33	122 -	134	129.55	1.87E+03	132.39	9.49E+03	1.09
	4	67.77	134 -	142	138.44	1.58E+03	112.75	7.68E+03	1.03
M	5	74.85	145 -	160	152.59	-5.06E+02	56.53	3.24E+03	0.34
m	6	77.26	145 -	160	157.42	-1.72E+03	138.03	3.41E+03	0.35
M	7	81.16	161 -	175	165.21	1.62E+03	68.84	5.92E+03	0.86
m	8	83.90	161 -	175	170.70	4.14E+03	87.83	4.99E+03	0.87
M	9	92.72	185 -	196	188.34	5.18E+03	92.18	4.30E+03	1.12
m	10	94.64	185 -	196	192.18	1.56E+03	61.11	4.38E+03	1.13
	11	122.42	243 -	254	247.74	2.88E+02	75.66	3.40E+03	0.92
	12	144.11	285 -	296	291.14	1.96E+03	86.36	3.44E+03	1.32

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	13	154.31	303 -	317	311.53	1.13E+03	93.41	4.34E+03	1.16
	14	185.96	367 -	381	374.83	4.19E+03	96.29	2.90E+03	1.27
	15	210.85	421 -	428	424.64	3.26E+01	43.79	1.35E+03	1.10
	16	236.14	470 -	483	475.22	1.07E+03	76.58	2.82E+03	1.16
	17	242.12	484 -	492	487.19	7.15E+02	59.25	1.93E+03	0.96
	18	256.36	508 -	525	515.66	1.44E+03	69.04	1.75E+03	1.27
M	19	269.60	532 -	555	542.16	2.02E+03	51.76	6.78E+02	1.22
m	20	271.38	532 -	555	545.72	1.54E+03	46.26	6.54E+02	1.22
M	21	283.82	564 -	583	570.61	-8.56E+02	159.48	3.68E+02	0.31
m	22	286.35	564 -	583	575.66	-8.22E+01	146.15	4.72E+02	0.32
M	23	295.37	583 -	617	593.70	3.65E+03	67.31	6.85E+02	1.19
m	24	300.18	583 -	617	603.33	5.24E+02	28.12	5.98E+02	1.19
m	25	302.78	583 -	617	608.52	3.38E+02	24.33	6.12E+02	1.20
	26	324.10	645 -	655	651.17	1.37E+02	39.40	9.13E+02	1.05
M	27	330.05	656 -	683	663.09	1.51E+02	39.25	5.43E+02	0.96
m	28	334.44	656 -	683	671.87	2.58E+01	7.81	5.49E+02	0.97
m	29	338.49	656 -	683	679.98	1.16E+02	30.20	3.99E+02	0.97
	30	352.03	696 -	714	707.05	7.59E+03	97.22	9.54E+02	1.48
M	31	402.00	799 -	818	807.04	7.30E+02	31.78	4.06E+02	1.37
m	32	405.10	799 -	818	813.23	4.32E+02	25.98	3.59E+02	1.37
	33	427.18	851 -	864	857.42	2.15E+02	33.28	5.25E+02	1.38
	34	609.62	1215 -	1230	1222.44	4.82E+03	72.65	2.54E+02	1.52
	35	665.80	1331 -	1344	1334.86	1.50E+02	21.11	1.74E+02	1.66
	36	768.72	1533 -	1545	1540.84	5.55E+02	28.36	1.51E+02	2.06
	37	786.36	1571 -	1580	1576.14	9.65E+01	16.56	1.19E+02	1.76
	38	806.38	1610 -	1620	1616.20	8.43E+01	16.33	1.18E+02	1.61
	39	832.43	1664 -	1677	1668.35	1.44E+02	21.05	1.76E+02	1.60
	40	934.55	1868 -	1880	1872.74	2.30E+02	20.53	1.16E+02	1.16
	41	1001.70	1999 -	2015	2007.16	2.31E+02	21.75	1.31E+02	1.68
	42	1120.81	2238 -	2253	2245.57	9.80E+02	33.72	8.72E+01	1.92
	43	1155.73	2311 -	2322	2315.49	1.14E+02	15.18	7.26E+01	1.56
	44	1238.75	2472 -	2487	2481.70	3.56E+02	22.16	7.52E+01	1.77
	45	1378.31	2756 -	2768	2761.13	2.21E+02	18.84	8.13E+01	2.18
	46	1408.95	2815 -	2828	2822.47	9.10E+01	16.77	1.12E+02	1.65
	47	1510.18	3017 -	3031	3025.20	1.01E+02	15.14	7.35E+01	1.68
	48	1661.85	3323 -	3333	3328.93	6.40E+01	9.51	1.70E+01	2.20
	49	1730.45	3458 -	3474	3466.33	1.41E+02	13.95	2.89E+01	1.85
	50	1765.23	3528 -	3543	3536.00	7.67E+02	28.28	1.84E+01	2.15

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 3/30/2016 2:07:05PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	46.51	89 -	99	7.59E+01	76.92	3.77E+03	1.26E+02
	2	50.23	99 -	107	3.93E+02	75.10	3.62E+03	1.19E+02
	3	63.33	122 -	134	1.87E+03	132.39	9.49E+03	2.06E+02
	4	67.77	134 -	142	1.58E+03	112.75	7.68E+03	1.74E+02
M	5	74.85	145 -	160	-5.06E+02	56.53	3.24E+03	1.32E+02
m	6	77.26	145 -	160	-1.72E+03	138.03	3.41E+03	1.36E+02
M	7	81.16	161 -	175	1.62E+03	68.84	5.92E+03	1.79E+02
m	8	83.90	161 -	175	4.14E+03	87.83	4.99E+03	1.64E+02
M	9	92.72	185 -	196	5.18E+03	92.18	4.30E+03	1.53E+02
m	10	94.64	185 -	196	1.56E+03	61.11	4.38E+03	1.54E+02
	11	122.42	243 -	254	2.88E+02	75.66	3.40E+03	1.21E+02
	12	144.11	285 -	296	1.96E+03	86.36	3.44E+03	1.22E+02
	13	154.31	303 -	317	1.13E+03	93.41	4.34E+03	1.43E+02
	14	185.96	367 -	381	4.19E+03	96.29	2.90E+03	1.17E+02
	15	210.85	421 -	428	3.26E+01	43.79	1.35E+03	7.14E+01
	16	236.14	470 -	483	1.07E+03	76.58	2.82E+03	1.14E+02
	17	242.12	484 -	492	7.15E+02	59.25	1.93E+03	8.70E+01
	18	256.36	508 -	525	1.44E+03	69.04	1.75E+03	9.49E+01
M	19	269.60	532 -	555	2.02E+03	51.76	6.78E+02	6.06E+01
m	20	271.38	532 -	555	1.54E+03	46.26	6.54E+02	5.95E+01
M	21	283.82	564 -	583	-8.56E+02	159.48	3.68E+02	4.46E+01
m	22	286.35	564 -	583	-8.22E+01	146.15	4.72E+02	5.05E+01
M	23	295.37	583 -	617	3.65E+03	67.31	6.85E+02	6.09E+01
m	24	300.18	583 -	617	5.24E+02	28.12	5.98E+02	5.69E+01
m	25	302.78	583 -	617	3.38E+02	24.33	6.12E+02	5.76E+01
	26	324.10	645 -	655	1.37E+02	39.40	9.13E+02	6.19E+01
M	27	330.05	656 -	683	1.51E+02	39.25	5.43E+02	5.42E+01
m	28	334.44	656 -	683	2.58E+01	7.81	5.49E+02	5.45E+01
m	29	338.49	656 -	683	1.16E+02	30.20	3.99E+02	4.65E+01
	30	352.03	696 -	714	7.59E+03	97.22	9.54E+02	7.09E+01
M	31	402.00	799 -	818	7.30E+02	31.78	4.06E+02	4.68E+01
m	32	405.10	799 -	818	4.32E+02	25.98	3.59E+02	4.41E+01
	33	427.18	851 -	864	2.15E+02	33.28	5.25E+02	4.91E+01
	34	609.62	1215 -	1230	4.82E+03	72.65	2.54E+02	3.52E+01
	35	665.80	1331 -	1344	1.50E+02	21.11	1.74E+02	2.83E+01
	36	768.72	1533 -	1545	5.55E+02	28.36	1.51E+02	2.59E+01
	37	786.36	1571 -	1580	9.65E+01	16.56	1.19E+02	2.19E+01
	38	806.38	1610 -	1620	8.43E+01	16.33	1.18E+02	2.22E+01
	39	832.43	1664 -	1677	1.44E+02	21.05	1.76E+02	2.84E+01
	40	934.55	1868 -	1880	2.30E+02	20.53	1.16E+02	2.28E+01
	41	1001.70	1999 -	2015	2.31E+02	21.75	1.31E+02	2.56E+01
	42	1120.81	2238 -	2253	9.80E+02	33.72	8.72E+01	2.06E+01
	43	1155.73	2311 -	2322	1.14E+02	15.18	7.26E+01	1.77E+01
	44	1238.75	2472 -	2487	3.56E+02	22.16	7.52E+01	1.91E+01
	45	1378.31	2756 -	2768	2.21E+02	18.84	8.13E+01	1.90E+01
	46	1408.95	2815 -	2828	9.10E+01	16.77	1.12E+02	2.27E+01
	47	1510.18	3017 -	3031	1.01E+02	15.14	7.35E+01	1.87E+01
	48	1661.85	3323 -	3333	6.40E+01	9.51	1.70E+01	8.46E+00
	49	1730.45	3458 -	3474	1.41E+02	13.95	2.89E+01	1.20E+01
	50	1765.23	3528 -	3543	7.67E+02	28.28	1.84E+01	9.47E+00

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 3/30/2016 2:07:05PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB
Peak Match Tolerance : 1.000 keV

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	46.51	89 -	99	95.91	7.59E+01	76.92	3.77E+03	PB-210
	2	50.23	99 -	107	103.36	3.93E+02	75.10	3.62E+03	TH-227
	3	63.33	122 -	134	129.55	1.87E+03	132.39	9.49E+03	TH-234
									TH-232
									PA-234
	4	67.77	134 -	142	138.44	1.58E+03	112.75	7.68E+03	CS-136
M	5	74.85	145 -	160	152.59	-5.06E+02	56.53	3.24E+03	AM-243
									TH-229
									PA-233
m	6	77.26	145 -	160	157.42	-1.72E+03	138.03	3.41E+03	.....
M	7	81.16	161 -	175	165.21	1.62E+03	68.84	5.92E+03	TH-231
									BA-133
m	8	83.90	161 -	175	170.70	4.14E+03	87.83	4.99E+03	TH-231
									TH-228
									TH-234
M	9	92.72	185 -	196	188.34	5.18E+03	92.18	4.30E+03	TH-234
m	10	94.64	185 -	196	192.18	1.56E+03	61.11	4.38E+03	NP-237
									TH-227
	11	122.42	243 -	254	247.74	2.88E+02	75.66	3.40E+03	RA-223
									CO-57
									EU-152
									EU-154
	12	144.11	285 -	296	291.14	1.96E+03	86.36	3.44E+03	RA-223
									U-235
									NP-237
	13	154.31	303 -	317	311.53	1.13E+03	93.41	4.34E+03	TH-229
									RA-223
									AC-228
	14	185.96	367 -	381	374.83	4.19E+03	96.29	2.90E+03	RA-226
									PA-234
									U-235
	15	210.85	421 -	428	424.64	3.26E+01	43.79	1.35E+03	TH-229
									TH-227
	16	236.14	470 -	483	475.22	1.07E+03	76.58	2.82E+03	TH-227
									NB-95m

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	17	242.12	484 -	492	487.19	7.15E+02	59.25	1.93E+03	PB-214
	18	256.36	508 -	525	515.66	1.44E+03	69.04	1.75E+03	TH-227
M	19	269.60	532 -	555	542.16	2.02E+03	51.76	6.78E+02	RA-223
									AC-228
m	20	271.38	532 -	555	545.72	1.54E+03	46.26	6.54E+02	PA-233
									RN-219
									PA-234
M	21	283.82	564 -	583	570.61	-8.56E+02	159.48	3.68E+02	PA-231
									I-131
m	22	286.35	564 -	583	575.66	-8.22E+01	146.15	4.72E+02	TH-227
M	23	295.37	583 -	617	593.70	3.65E+03	67.31	6.85E+02	PB-214
									EU-152
									IR-192
m	24	300.18	583 -	617	603.33	5.24E+02	28.12	5.98E+02	PB-212
									PA-231
									PA-233
									TH-227
m	25	302.78	583 -	617	608.52	3.38E+02	24.33	6.12E+02	BA-133
									PA-231
	26	324.10	645 -	655	651.17	1.37E+02	39.40	9.13E+02	RA-223
M	27	330.05	656 -	683	663.09	1.51E+02	39.25	5.43E+02	PA-231
									TH-227
									PA-234
m	28	334.44	656 -	683	671.87	2.58E+01	7.81	5.49E+02	TH-227
									NP-239
m	29	338.49	656 -	683	679.98	1.16E+02	30.20	3.99E+02	AC-228
									RA-223
	30	352.03	696 -	714	707.05	7.59E+03	97.22	9.54E+02	PB-214
									BI-211
M	31	402.00	799 -	818	807.04	7.30E+02	31.78	4.06E+02	RN-219
									KR-87
m	32	405.10	799 -	818	813.23	4.32E+02	25.98	3.59E+02	PB-211
									I-134
	33	427.18	851 -	864	857.42	2.15E+02	33.28	5.25E+02	PB-211
									SB-125
	34	609.62	1215 -	1230	1222.44	4.82E+03	72.65	2.54E+02	BI-214
									RU-103
	35	665.80	1331 -	1344	1334.86	1.50E+02	21.11	1.74E+02	BI-214
									SB-126
									PA-234
	36	768.72	1533 -	1545	1540.84	5.55E+02	28.36	1.51E+02	BI-214
	37	786.36	1571 -	1580	1576.14	9.65E+01	16.56	1.19E+02	PA-234
									PB-214
									CS-135
									BI-212
	38	806.38	1610 -	1620	1616.20	8.43E+01	16.33	1.18E+02	BI-214
									PA-234
	39	832.43	1664 -	1677	1668.35	1.44E+02	21.05	1.76E+02	PB-211
									PA-234
	40	934.55	1868 -	1880	1872.74	2.30E+02	20.53	1.16E+02	BI-214
	41	1001.70	1999 -	2015	2007.16	2.31E+02	21.75	1.31E+02	PA-234M
	42	1120.81	2238 -	2253	2245.57	9.80E+02	33.72	8.72E+01	BI-214
	43	1155.73	2311 -	2322	2315.49	1.14E+02	15.18	7.26E+01	BI-214
	44	1238.75	2472 -	2487	2481.70	3.56E+02	22.16	7.52E+01	CO-56

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
								BI-214
45	1378.31	2756 -	2768	2761.13	2.21E+02	18.84	8.13E+01	BI-214
46	1408.95	2815 -	2828	2822.47	9.10E+01	16.77	1.12E+02	EU-152
								BI-214
47	1510.18	3017 -	3031	3025.20	1.01E+02	15.14	7.35E+01	I-124
								BI-214
48	1661.85	3323 -	3333	3328.93	6.40E+01	9.51	1.70E+01	BI-214
49	1730.45	3458 -	3474	3466.33	1.41E+02	13.95	2.89E+01	BI-214
50	1765.23	3528 -	3543	3536.00	7.67E+02	28.28	1.84E+01	BI-214

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 3/30/2016 2:07:05PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.51	7.59E+01	76.92	5.68E-03	2.28E-04
	2	50.23	3.93E+02	75.10	6.03E-03	2.28E-04
	3	63.33	1.87E+03	132.39	6.85E-03	2.55E-04
	4	67.77	1.58E+03	112.75	7.01E-03	2.88E-04
M	5	74.85	-5.06E+02	56.53	7.19E-03	3.39E-04
m	6	77.26	-1.72E+03	138.03	7.23E-03	3.56E-04
M	7	81.16	1.62E+03	68.84	7.27E-03	3.84E-04
m	8	83.90	4.14E+03	87.83	7.29E-03	4.04E-04
M	9	92.72	5.18E+03	92.18	7.30E-03	4.28E-04
m	10	94.64	1.56E+03	61.11	7.30E-03	4.26E-04
	11	122.42	2.88E+02	75.66	6.98E-03	3.90E-04
	12	144.11	1.96E+03	86.36	6.61E-03	3.59E-04
	13	154.31	1.13E+03	93.41	6.42E-03	3.44E-04
	14	185.96	4.19E+03	96.29	5.86E-03	3.19E-04
	15	210.85	3.26E+01	43.79	5.46E-03	3.09E-04
	16	236.14	1.07E+03	76.58	5.09E-03	2.99E-04
	17	242.12	7.15E+02	59.25	5.00E-03	2.97E-04
	18	256.36	1.44E+03	69.04	4.82E-03	2.91E-04
M	19	269.60	2.02E+03	51.76	4.66E-03	2.86E-04
m	20	271.38	1.54E+03	46.26	4.63E-03	2.85E-04
M	21	283.82	-8.56E+02	159.48	4.49E-03	2.80E-04
m	22	286.35	-8.22E+01	146.15	4.46E-03	2.79E-04
M	23	295.37	3.65E+03	67.31	4.37E-03	2.75E-04
m	24	300.18	5.24E+02	28.12	4.32E-03	2.74E-04
m	25	302.78	3.38E+02	24.33	4.29E-03	2.72E-04
	26	324.10	1.37E+02	39.40	4.08E-03	2.64E-04

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
M	27	330.05	1.51E+02	39.25	4.03E-03	2.62E-04
m	28	334.44	2.58E+01	7.81	3.99E-03	2.60E-04
m	29	338.49	1.16E+02	30.20	3.95E-03	2.58E-04
	30	352.03	7.59E+03	97.22	3.84E-03	2.53E-04
M	31	402.00	7.30E+02	31.78	3.47E-03	2.31E-04
m	32	405.10	4.32E+02	25.98	3.45E-03	2.29E-04
	33	427.18	2.15E+02	33.28	3.31E-03	2.15E-04
	34	609.62	4.82E+03	72.65	2.49E-03	1.05E-04
	35	665.80	1.50E+02	21.11	2.32E-03	7.49E-05
	36	768.72	5.55E+02	28.36	2.06E-03	9.70E-05
	37	786.36	9.65E+01	16.56	2.02E-03	1.01E-04
	38	806.38	8.43E+01	16.33	1.98E-03	1.05E-04
	39	832.43	1.44E+02	21.05	1.93E-03	1.11E-04
	40	934.55	2.30E+02	20.53	1.76E-03	1.14E-04
	41	1001.70	2.31E+02	21.75	1.67E-03	9.45E-05
	42	1120.81	9.80E+02	33.72	1.52E-03	5.96E-05
	43	1155.73	1.14E+02	15.18	1.49E-03	4.94E-05
	44	1238.75	3.56E+02	22.16	1.41E-03	4.25E-05
	45	1378.31	2.21E+02	18.84	1.29E-03	3.94E-05
	46	1408.95	9.10E+01	16.77	1.27E-03	3.90E-05
	47	1510.18	1.01E+02	15.14	1.21E-03	3.78E-05
	48	1661.85	6.40E+01	9.51	1.12E-03	3.59E-05
	49	1730.45	1.41E+02	13.95	1.09E-03	3.51E-05
	50	1765.23	7.67E+02	28.28	1.07E-03	3.47E-05

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 3/30/2016 2:07:05PM

Env. Background File : \\NHHJ-6\ApexRoot\Default\Data\0000006791.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	46.51	7.59E+01	76.92	2.73E+01	2.86E+00	4.87E+01	7.70E+01
	2	50.23	3.93E+02	75.10			3.93E+02	7.51E+01
	3	63.33	1.87E+03	132.39	4.82E+01	3.05E+00	1.82E+03	1.32E+02
	4	67.77	1.58E+03	112.75			1.58E+03	1.13E+02
M	5	74.85	-5.06E+02	56.53			-5.06E+02	5.65E+01
m	6	77.26	-1.72E+03	138.03			-1.72E+03	1.38E+02
M	7	81.16	1.62E+03	68.84			1.62E+03	6.88E+01
m	8	83.90	4.14E+03	87.83			4.14E+03	8.78E+01
M	9	92.72	5.18E+03	92.18	7.04E+01	3.77E+00	5.11E+03	9.23E+01
m	10	94.64	1.56E+03	61.11			1.56E+03	6.11E+01
	11	122.42	2.88E+02	75.66			2.88E+02	7.57E+01

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	12	144.11	1.96E+03	86.36			1.96E+03	8.64E+01
	13	154.31	1.13E+03	93.41			1.13E+03	9.34E+01
	14	185.96	4.19E+03	96.29	2.96E+01	3.21E+00	4.16E+03	9.63E+01
	15	210.85	3.26E+01	43.79			3.26E+01	4.38E+01
	16	236.14	1.07E+03	76.58			1.07E+03	7.66E+01
	17	242.12	7.15E+02	59.25			7.15E+02	5.92E+01
	18	256.36	1.44E+03	69.04			1.44E+03	6.90E+01
M	19	269.60	2.02E+03	51.76			2.02E+03	5.18E+01
m	20	271.38	1.54E+03	46.26			1.54E+03	4.63E+01
M	21	283.82	-8.56E+02	159.48			-8.56E+02	1.59E+02
m	22	286.35	-8.22E+01	146.15			-8.22E+01	1.46E+02
M	23	295.37	3.65E+03	67.31			3.65E+03	6.73E+01
m	24	300.18	5.24E+02	28.12			5.24E+02	2.81E+01
m	25	302.78	3.38E+02	24.33			3.38E+02	2.43E+01
	26	324.10	1.37E+02	39.40			1.37E+02	3.94E+01
M	27	330.05	1.51E+02	39.25			1.51E+02	3.92E+01
m	28	334.44	2.58E+01	7.81			2.58E+01	7.81E+00
m	29	338.49	1.16E+02	30.20			1.16E+02	3.02E+01
	30	352.03	7.59E+03	97.22			7.59E+03	9.72E+01
M	31	402.00	7.30E+02	31.78			7.30E+02	3.18E+01
m	32	405.10	4.32E+02	25.98			4.32E+02	2.60E+01
	33	427.18	2.15E+02	33.28			2.15E+02	3.33E+01
	34	609.62	4.82E+03	72.65			4.82E+03	7.27E+01
	35	665.80	1.50E+02	21.11			1.50E+02	2.11E+01
	36	768.72	5.55E+02	28.36			5.55E+02	2.84E+01
	37	786.36	9.65E+01	16.56			9.65E+01	1.66E+01
	38	806.38	8.43E+01	16.33			8.43E+01	1.63E+01
	39	832.43	1.44E+02	21.05			1.44E+02	2.10E+01
	40	934.55	2.30E+02	20.53			2.30E+02	2.05E+01
	41	1001.70	2.31E+02	21.75			2.31E+02	2.18E+01
	42	1120.81	9.80E+02	33.72			9.80E+02	3.37E+01
	43	1155.73	1.14E+02	15.18			1.14E+02	1.52E+01
	44	1238.75	3.56E+02	22.16			3.56E+02	2.22E+01
	45	1378.31	2.21E+02	18.84			2.21E+02	1.88E+01
	46	1408.95	9.10E+01	16.77			9.10E+01	1.68E+01
	47	1510.18	1.01E+02	15.14			1.01E+02	1.51E+01
	48	1661.85	6.40E+01	9.51			6.40E+01	9.51E+00
	49	1730.45	1.41E+02	13.95			1.41E+02	1.39E+01
	50	1765.23	7.67E+02	28.28			7.67E+02	2.83E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 3/30/2016 2:07:05PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\NHHJ-6\ApexRoot\Default\Data\0000006791.CNF

Corrected Area is: Original * Peak Ratio - Background

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	46.51	7.59E+01	76.92	2.73E+01	2.86E+00	4.87E+01	7.70E+01
	2	50.23	3.93E+02	75.10			3.93E+02	7.51E+01
	3	63.33	1.87E+03	132.39	4.82E+01	3.05E+00	1.82E+03	1.32E+02
	4	67.77	1.58E+03	112.75			1.58E+03	1.13E+02
M	5	74.85	-5.06E+02	56.53			-5.06E+02	5.65E+01
m	6	77.26	-1.72E+03	138.03			-1.72E+03	1.38E+02
M	7	81.16	1.62E+03	68.84			1.62E+03	6.88E+01
m	8	83.90	4.14E+03	87.83			4.14E+03	8.78E+01
M	9	92.72	5.18E+03	92.18	7.04E+01	3.77E+00	5.11E+03	9.23E+01
m	10	94.64	1.56E+03	61.11			1.56E+03	6.11E+01
	11	122.42	2.88E+02	75.66			2.88E+02	7.57E+01
	12	144.11	1.96E+03	86.36			1.96E+03	8.64E+01
	13	154.31	1.13E+03	93.41			1.13E+03	9.34E+01
	14	185.96	4.19E+03	96.29	2.96E+01	3.21E+00	4.16E+03	9.63E+01
	15	210.85	3.26E+01	43.79			3.26E+01	4.38E+01
	16	236.14	1.07E+03	76.58			1.07E+03	7.66E+01
	17	242.12	7.15E+02	59.25			7.15E+02	5.92E+01
	18	256.36	1.44E+03	69.04			1.44E+03	6.90E+01
M	19	269.60	2.02E+03	51.76			2.02E+03	5.18E+01
m	20	271.38	1.54E+03	46.26			1.54E+03	4.63E+01
M	21	283.82	-8.56E+02	159.48			-8.56E+02	1.59E+02
m	22	286.35	-8.22E+01	146.15			-8.22E+01	1.46E+02
M	23	295.37	3.65E+03	67.31			3.65E+03	6.73E+01
m	24	300.18	5.24E+02	28.12			5.24E+02	2.81E+01
m	25	302.78	3.38E+02	24.33			3.38E+02	2.43E+01
	26	324.10	1.37E+02	39.40			1.37E+02	3.94E+01
M	27	330.05	1.51E+02	39.25			1.51E+02	3.92E+01
m	28	334.44	2.58E+01	7.81			2.58E+01	7.81E+00
m	29	338.49	1.16E+02	30.20			1.16E+02	3.02E+01
	30	352.03	7.59E+03	97.22			7.59E+03	9.72E+01
M	31	402.00	7.30E+02	31.78			7.30E+02	3.18E+01
m	32	405.10	4.32E+02	25.98			4.32E+02	2.60E+01
	33	427.18	2.15E+02	33.28			2.15E+02	3.33E+01
	34	609.62	4.82E+03	72.65			4.82E+03	7.27E+01
	35	665.80	1.50E+02	21.11			1.50E+02	2.11E+01
	36	768.72	5.55E+02	28.36			5.55E+02	2.84E+01
	37	786.36	9.65E+01	16.56			9.65E+01	1.66E+01
	38	806.38	8.43E+01	16.33			8.43E+01	1.63E+01
	39	832.43	1.44E+02	21.05			1.44E+02	2.10E+01
	40	934.55	2.30E+02	20.53			2.30E+02	2.05E+01
	41	1001.70	2.31E+02	21.75			2.31E+02	2.18E+01

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
42	1120.81	9.80E+02	33.72			9.80E+02	3.37E+01
43	1155.73	1.14E+02	15.18			1.14E+02	1.52E+01
44	1238.75	3.56E+02	22.16			3.56E+02	2.22E+01
45	1378.31	2.21E+02	18.84			2.21E+02	1.88E+01
46	1408.95	9.10E+01	16.77			9.10E+01	1.68E+01
47	1510.18	1.01E+02	15.14			1.01E+02	1.51E+01
48	1661.85	6.40E+01	9.51			6.40E+01	9.51E+00
49	1730.45	1.41E+02	13.95			1.41E+02	1.39E+01
50	1765.23	7.67E+02	28.28			7.67E+02	2.83E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
CO-57	0.982	122.06	*	85.60	1.89E+00	5.10E-01
		136.47		10.68		
		692.41		0.16		
NB-95m	0.300	204.12		2.33		
		235.69	*	24.80	1.19E+06	1.66E+05
SB-125	0.668	176.31		6.82		
		380.45		1.52		
		427.88	*	29.60	7.80E+00	1.33E+00
		463.36		10.49		
		600.60		17.86		
		606.72		5.03		
		635.95		11.31		
		671.45		1.80		
PB-210	1.000	46.54	*	4.25	6.93E+00	1.10E+01
BI-211	0.861	351.06	*	12.91	5.24E+02	3.54E+01
PB-211	0.986	404.85	*	3.78	1.13E+02	1.03E+01
		427.09	*	1.76	1.26E+02	2.14E+01
		704.64		0.46		
		766.51		0.62		
		832.01	*	3.52	7.25E+01	1.14E+01
BI-214	0.901	609.31	*	44.80	1.48E+02	6.85E+00
		665.45	*	1.29	1.72E+02	2.51E+01
		768.36	*	4.80	1.92E+02	1.36E+01
		806.17	*	1.22	1.19E+02	2.41E+01

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.901	934.06	*	3.03	1.47E+02	1.64E+01
		1120.29	*	14.80	1.49E+02	8.00E+00
		1155.19	*	1.64	1.60E+02	2.23E+01
		1207.68		0.49		
		1238.11	*	5.86	1.47E+02	1.04E+01
		1280.96		1.44		
		1377.67	*	3.92	1.49E+02	1.38E+01
		1385.31		0.89		
		1401.50		1.55		
		1407.98	*	2.80	8.73E+01	2.05E+01
		1415.80		0.48		
		1509.23	*	2.12	1.34E+02	2.08E+01
		1583.22		0.70		
		1661.28	*	1.14	1.71E+02	2.64E+01
		1729.59	*	2.88	1.54E+02	1.64E+01
		1764.49	*	15.36	1.60E+02	8.11E+00
		1847.42		2.04		
PB-214	0.997	53.23		1.11		
		241.98	*	7.50	6.51E+01	6.69E+00
		258.79		0.55		
		295.21	*	18.50	1.54E+02	1.05E+01
		351.92	*	35.80	1.89E+02	1.29E+01
		785.91	*	0.85	1.92E+02	4.10E+01
		839.03		0.63		
RN-219	0.996	130.59		0.12		
		271.23	*	10.80	1.05E+02	7.86E+00
		401.81	*	6.37	1.13E+02	8.99E+00
RA-223	0.996	122.32	*	1.19	1.18E+02	3.19E+01
		144.23	*	3.22	3.15E+02	2.31E+01
		154.21	*	5.62	1.07E+02	1.09E+01
		158.63		0.69		
		179.54		0.15		
		269.46	*	13.70	1.08E+02	7.51E+00
		288.18		0.16		
		323.87	*	3.93	2.92E+01	8.62E+00
		328.40		0.21		
		338.28	*	2.79	3.58E+01	9.68E+00
		342.90		0.22		
		346.80		0.18		
		371.68		0.48		
TH-227	0.994	50.13	*	8.00	2.78E+01	5.60E+00
		79.72		1.89		
		93.93	*	1.37	5.34E+02	5.70E+01
		210.65	*	1.10	1.86E+01	2.52E+01
		235.97	*	12.70	5.67E+01	6.89E+00
		256.25	*	7.01	1.46E+02	1.36E+01
		286.12	*	1.54	-4.09E+01	7.28E+01
		300.00	*	2.67	1.55E+02	1.82E+01
		304.51		1.23		
		329.85	*	2.69	4.76E+01	1.36E+01
		334.38	*	1.05	2.10E+01	6.82E+00
PA-231	0.998	283.69	*	1.70	-3.83E+02	7.86E+01
		300.07	*	2.46	1.69E+02	1.48E+01

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PA-231	0.998	302.65	*	2.20	1.22E+02	1.91E+01
		330.06	*	1.40	9.14E+01	2.78E+01
TH-231	0.809	81.23	*	0.89	8.55E+02	7.53E+01
		84.21	*	6.60	2.94E+02	2.20E+01
		89.95		0.94		
PA-233	0.999	75.35	*	1.39	-1.73E+02	2.32E+01
		86.81		1.97		
		103.97		0.87		
		271.48	*	0.33	3.47E+03	2.69E+02
		300.34	*	6.62	6.27E+01	5.24E+00
		312.17		38.60		
		340.81		4.47		
		375.45		0.68		
		398.62		1.39		
		415.76		1.75		
PA-234M	0.447	766.36		0.29		
		811.00		0.51		
		1001.03	*	0.84	5.67E+02	6.26E+01
TH-234	0.998	63.29	*	4.84	1.88E+02	2.44E+01
		83.30	*	0.08	2.46E+04	1.92E+03
		92.59	*	5.58	4.29E+02	3.50E+01
		112.81		0.28		
U-235	0.761	109.16		1.54		
		143.76	*	10.96	9.25E+01	6.50E+00
		163.36		5.08		
		185.71	*	57.20	4.24E+01	2.54E+00
		194.94		0.63		
		202.11		1.08		
		205.31		5.01		

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 3/30/2016 2:07:05PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	4	67.77	4.37764E-01	7.15	Tol.	CS-136
m	6	77.26	-4.78221E-01	- 8.0		

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
CO-57	0.98	122.06	*	85.60	1.89E+00	5.10E-01
		136.47		10.68		
		692.41		0.16		
NB-95m	0.30	204.12		2.33		
		235.69	*	24.80	1.19E+06	1.66E+05
SB-125	0.66	176.31		6.82		
		380.45		1.52		
		427.88	*	29.60	7.80E+00	1.33E+00
		463.36		10.49		
		600.60		17.86		
		606.72		5.03		
		635.95		11.31		
		671.45		1.80		
PB-210	1.00	46.54	*	4.25	6.93E+00	1.10E+01
BI-211	0.86	351.06	*	12.91	5.24E+02	3.54E+01
PB-211	0.98	404.85	*	3.78	1.13E+02	1.03E+01
		427.09	*	1.76	1.26E+02	2.14E+01
		704.64		0.46		
		766.51		0.62		
		832.01	*	3.52	7.25E+01	1.14E+01
BI-214	0.90	609.31	*	44.80	1.48E+02	6.85E+00
		665.45	*	1.29	1.72E+02	2.51E+01
		768.36	*	4.80	1.92E+02	1.36E+01
		806.17	*	1.22	1.19E+02	2.41E+01
		934.06	*	3.03	1.47E+02	1.64E+01
		1120.29	*	14.80	1.49E+02	8.00E+00
		1155.19	*	1.64	1.60E+02	2.23E+01
		1207.68		0.49		
		1238.11	*	5.86	1.47E+02	1.04E+01
		1280.96		1.44		
		1377.67	*	3.92	1.49E+02	1.38E+01
		1385.31		0.89		
		1401.50		1.55		
		1407.98	*	2.80	8.73E+01	2.05E+01
		1415.80		0.48		
		1509.23	*	2.12	1.34E+02	2.08E+01
		1583.22		0.70		

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.90	1661.28	*	1.14	1.71E+02	2.64E+01
		1729.59	*	2.88	1.54E+02	1.64E+01
		1764.49	*	15.36	1.60E+02	8.11E+00
		1847.42		2.04		
PB-214	0.99	53.23		1.11		
		241.98	*	7.50	6.51E+01	6.69E+00
		258.79		0.55		
		295.21	*	18.50	1.54E+02	1.05E+01
		351.92	*	35.80	1.89E+02	1.29E+01
		785.91	*	0.85	1.92E+02	4.10E+01
		839.03		0.63		
RN-219	0.99	130.59		0.12		
		271.23	*	10.80	1.05E+02	7.86E+00
		401.81	*	6.37	1.13E+02	8.99E+00
RA-223	0.99	122.32	*	1.19	1.18E+02	3.19E+01
		144.23	*	3.22	3.15E+02	2.31E+01
		154.21	*	5.62	1.07E+02	1.09E+01
		158.63		0.69		
		179.54		0.15		
		269.46	*	13.70	1.08E+02	7.51E+00
		288.18		0.16		
		323.87	*	3.93	2.92E+01	8.62E+00
		328.40		0.21		
		338.28	*	2.79	3.58E+01	9.68E+00
		342.90		0.22		
		346.80		0.18		
		371.68		0.48		
TH-227	0.99	50.13	*	8.00	2.78E+01	5.60E+00
		79.72		1.89		
		93.93	*	1.37	5.34E+02	5.70E+01
		210.65	*	1.10	1.86E+01	2.52E+01
		235.97	*	12.70	5.67E+01	6.89E+00
		256.25	*	7.01	1.46E+02	1.36E+01
		286.12	*	1.54	-4.09E+01	7.28E+01
		300.00	*	2.67	1.55E+02	1.82E+01
		304.51		1.23		
		329.85	*	2.69	4.76E+01	1.36E+01
		334.38	*	1.05	2.10E+01	6.82E+00
PA-231	0.99	283.69	*	1.70	-3.83E+02	7.86E+01
		300.07	*	2.46	1.69E+02	1.48E+01
		302.65	*	2.20	1.22E+02	1.91E+01
		330.06	*	1.40	9.14E+01	2.78E+01
TH-231	0.80	81.23	*	0.89	8.55E+02	7.53E+01
		84.21	*	6.60	2.94E+02	2.20E+01
		89.95		0.94		
PA-233	0.99	75.35	*	1.39	-1.73E+02	2.32E+01
		86.81		1.97		
		103.97		0.87		
		271.48	*	0.33	3.47E+03	2.69E+02
		300.34	*	6.62	6.27E+01	5.24E+00
		312.17		38.60		
		340.81		4.47		
		375.45		0.68		

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PA-233	0.99	398.62		1.39		
		415.76		1.75		
PA-234M	0.44	766.36		0.29		
		811.00		0.51		
		1001.03	*	0.84	5.67E+02	6.26E+01
TH-234	0.99	63.29	*	4.84	1.88E+02	2.44E+01
		83.30	*	0.08	2.46E+04	1.92E+03
		92.59	*	5.58	4.29E+02	3.50E+01
		112.81		0.28		
U-235	0.76	109.16		1.54		
		143.76	*	10.96	9.25E+01	6.50E+00
		163.36		5.08		
		185.71	*	57.20	4.24E+01	2.54E+00
		194.94		0.63		
		202.11		1.08		
		205.31		5.01		

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 1.000 sigma

INTERFERENCE CORRECTED REPORT WITH PARENT/DAUGHTER CORRECTION

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	CO-57	0.982	6.76E-01	5.14E-01	
	NB-95m	0.300	3.49E+05	1.40E+05	
	SB-125	0.668	1.92E+00	1.39E+00	
X	I-131	0.787			
X	EU-152	0.644			
X	EU-154	0.983			
	PB-210	1.000	6.93E+00	1.10E+01	
	BI-211	0.861	2.62E+02	3.83E+01	
	PB-211	0.986	9.52E+01	7.57E+00	
	BI-214	0.901	1.51E+02	3.32E+00	
	PB-214	0.997	9.45E+01	5.48E+00	
	RN-219	0.996	1.08E+02	5.63E+00	
	RA-223	0.996	7.61E+01	4.29E+00	
X	RA-226	0.997			
	TH-227	0.994	4.02E+01	3.71E+00	
X	TH-228	0.723			

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
X	TH-229	1.000			
	PA-231	0.998	1.02E+02	1.07E+01	
	TH-231	0.809	3.38E+02	1.67E+01	
X	TH-232	0.964			
	PA-233	0.999	8.45E+00	6.60E+00	
	PA-234M	0.447	5.67E+02	6.26E+01	
	TH-234	0.998	2.49E+02	1.33E+01	
	U-235	0.761	4.60E+01	2.35E+00	
X	AM-243	0.994			

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 3/30/2016 2:07:05PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	4	67.77	4.37764E-01	7.15	Tol.	CS-136
m	6	77.26	-4.78221E-01	- 8.0		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
BE-7	477.60	10.42	1.82E+01	3.39E+01	3.39E+01
NA-22	1274.53	99.94	-2.20E+00	1.82E+00	1.82E+00
@ NA-24	1368.63	100.00	1.00E+26	1.00E+26	1.00E+26

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
> @	NA-24	2754.03		99.94	0.00E+00	1.00E+26	0.00E+00
	K-40	1460.83		10.67	1.25E+01	2.28E+01	2.28E+01
@	AR-41	1293.59		99.10	1.00E+26	1.00E+26	1.00E+26
	CR-51	320.08		9.86	-9.75E+01	6.73E+01	6.73E+01
	MN-54	834.85		99.98	3.29E+00	2.74E+00	2.74E+00
	CO-56	846.77		99.93	-7.82E-01	2.23E+00	3.07E+00
		977.37		1.44	-1.68E+01		2.09E+02
		1037.84		13.99	3.79E+00		2.08E+01
		1175.10		2.28	1.30E+01		1.35E+02
		1238.28		67.56	2.01E+01		8.60E+00
		1360.21		4.33	-2.50E+01		6.69E+01
		1771.35		15.69	-2.21E+02		6.00E+01
		2015.18		3.08	0.00E+00		5.66E+00
		2034.76		7.89	0.00E+00		2.23E+00
@	MN-56	846.75		98.87	1.00E+26	1.00E+26	1.00E+26
@		1810.72		27.19	1.00E+26		1.00E+26
> @		2113.05		14.34	0.00E+00		0.00E+00
+	CO-57	122.06	*	85.60	1.89E+00	2.28E+00	2.28E+00
		136.47		10.68	-4.58E+01		2.22E+01
		692.41		0.16	-3.43E+02		1.13E+03
	CO-58	810.78		99.45	-2.59E+00	3.43E+00	3.43E+00
		863.96		0.68	-2.31E+01		4.74E+02
		1674.73		0.52	-5.75E+02		4.80E+02
	FE-59	142.65		1.02	-3.48E+02	8.05E+00	5.97E+02
		192.35		3.08	-1.13E+03		1.47E+02
		1099.25		56.50	5.09E-01		8.05E+00
		1291.60		43.20	-1.12E+01		1.04E+01
	CO-60	1173.24		99.90	1.19E-01	1.89E+00	1.89E+00
		1332.50		99.98	-8.53E-02		1.91E+00
@	CU-64	1345.77		0.47	1.00E+26	1.00E+26	1.00E+26
	ZN-65	1115.55		50.60	-3.49E+01	1.10E+01	1.10E+01
	SE-75	66.05		1.12	1.62E+03	3.77E+00	3.91E+02
		96.73		3.42	-1.61E+02		9.46E+01
		121.12		17.14	-6.29E+00		1.63E+01
		136.00		58.27	-5.17E+00		4.83E+00
		198.61		1.47	-1.62E+02		1.78E+02
		264.66		58.50	-7.19E+00		3.77E+00
		279.54		24.79	-2.21E+01		9.50E+00
		303.93		1.31	-1.24E+03		2.43E+02
		400.66		11.37	-1.31E+01		3.10E+01
	RB-83	520.39		44.70	-6.97E+00	5.43E+00	5.43E+00
		529.59		29.30	-3.07E+00		8.47E+00
		552.59		15.96	-8.60E+00		1.55E+01
@	BR-84	881.60		42.00	1.00E+26	1.00E+26	1.00E+26
@		1897.60		14.90	1.00E+26		1.00E+26
	KR-85	514.01		0.43	4.61E+02	4.48E+02	4.48E+02
@	KR-85M	151.20		75.00	1.00E+26	1.00E+26	1.00E+26
@		304.87		14.00	1.00E+26		1.00E+26
	SR-85	514.01		95.70	3.71E+00	3.60E+00	3.60E+00
@	SR-85m	151.19		12.90	1.00E+26	1.00E+26	1.00E+26
@		231.86		84.40	1.00E+26		1.00E+26
	RB-86	1077.00		8.64	-1.83E+01	1.78E+02	1.78E+02

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
@	KR-87	402.59		49.60	1.00E+26	1.00E+26	1.00E+26
@		673.83		1.89	1.00E+26		1.00E+26
@		845.44		7.30	1.00E+26		1.00E+26
@		1175.40		1.11	1.00E+26		1.00E+26
@		1740.52		2.04	1.00E+26		1.00E+26
@	KR-88	165.98		3.10	1.00E+26	1.00E+26	1.00E+26
@		196.30		26.00	1.00E+26		1.00E+26
@		362.23		2.25	1.00E+26		1.00E+26
@		834.83		13.00	1.00E+26		1.00E+26
@		985.78		1.52	1.00E+26		1.00E+26
@		1141.33		1.28	1.00E+26		1.00E+26
@		1179.51		1.00	1.00E+26		1.00E+26
@		1250.67		1.12	1.00E+26		1.00E+26
@		1369.50		1.48	1.00E+26		1.00E+26
@		1518.39		2.15	1.00E+26		1.00E+26
@		1529.77		10.90	1.00E+26		1.00E+26
@	RB-88	898.03		14.04	1.00E+26	1.00E+26	1.00E+26
@		1836.01		21.40	1.00E+26		1.00E+26
	Y-88	898.04		93.68	2.27E-01	2.35E+00	3.23E+00
		1836.06		99.24	-1.35E+00		2.35E+00
	NB-94x	702.62		97.90	1.75E+00	1.77E+00	1.98E+00
		871.09		99.90	-8.73E-01		1.77E+00
	NB-95	765.81		99.81	-9.81E+00	9.39E+00	9.39E+00
+	NB-95m	204.12		2.33	3.95E+06	3.62E+05	3.66E+06
		235.69	*	24.80	1.19E+06		3.62E+05
	ZR-95	724.20		44.17	5.17E-01	5.57E+00	6.76E+00
		756.73		54.46	-4.93E+00		5.57E+00
	NB-96	460.04		26.62	1.70E+17	2.38E+17	8.09E+17
		568.87		57.97	-9.31E+16		3.53E+17
		778.22		96.45	-1.18E+18		2.38E+17
		849.93		20.40	-1.57E+17		1.18E+18
		1200.23		19.96	-2.99E+17		1.23E+18
	MO-99	140.51		4.52	-9.12E+07	1.76E+07	5.41E+07
		181.06		6.08	-1.64E+08		3.76E+07
		366.42		1.20	-2.50E+07		1.43E+08
		739.50		12.13	1.26E+07		1.76E+07
		777.92		4.28	-2.36E+08		4.76E+07
@	TC-99M	140.51		89.06	1.00E+26	1.00E+26	1.00E+26
	RU-103	443.80		3.27	5.53E+01	4.51E+00	1.40E+02
		497.08		90.90	-1.64E+00		4.51E+00
		610.33		5.75	3.06E+03		3.01E+02
	RHRU-106	621.93		9.93	-2.09E+00	1.65E+01	1.65E+01
		1050.41		1.56	2.94E+01		1.31E+02
	AG-108M	433.94		90.50	-1.97E+00	1.82E+00	1.86E+00
		614.28		89.90	-3.52E+01		6.49E+00
		722.94		90.90	3.39E-01		1.82E+00
	CD-109	88.03		3.61	-4.78E+02	7.38E+01	7.38E+01
	AG-110M	116.48		1.36	-6.41E+01	1.87E+00	1.75E+02
		446.81		3.72	2.06E+01		5.44E+01
		620.36		2.79	-4.87E+02		6.46E+01
		657.76		94.00	-2.47E+00		1.87E+00
		677.62		10.28	-5.60E+00		1.61E+01

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AG-110M	687.02		6.39	8.13E+00	1.87E+00	2.83E+01
		706.68		16.32	9.62E+00		1.36E+01
		744.28		4.70	3.40E+01		4.61E+01
		763.94		22.14	-2.61E+01		1.53E+01
		818.03		7.29	-1.13E+01		2.66E+01
		884.68		72.19	2.13E+00		3.42E+00
		937.49		34.13	1.31E+01		9.19E+00
		1384.30		24.12	-2.29E+01		1.47E+01
		1475.79		3.97	-1.45E+01		5.78E+01
		1505.04		12.95	-2.13E+01		2.63E+01
		1562.30		1.02	4.57E+01		2.37E+02
	SN-113	255.06		1.82	6.36E+02	3.63E+00	1.83E+02
		391.69		64.00	1.15E+00		3.63E+00
	IN-114	190.27		15.40	-1.37E+02	2.84E+01	2.84E+01
		558.43		4.40	1.03E+01		8.12E+01
		725.24		4.40	4.52E+00		8.01E+01
	SB-122	564.24		69.30	3.29E+05	3.46E+06	3.46E+06
	I-124	602.72		60.50	-7.98E+05	2.68E+04	2.68E+04
		722.78		9.98	2.52E+04		1.58E+05
		1509.49		2.99	1.34E+06		9.77E+05
		1691.02		10.40	7.15E+04		1.80E+05
	SB-124	602.73		97.80	-9.71E+01	3.27E+00	3.27E+00
		645.85		7.38	-6.09E-01		3.66E+01
		709.32		1.35	-1.86E+01		2.48E+02
		713.78		2.27	-9.06E+01		1.36E+02
		722.79		10.76	4.60E+00		2.89E+01
		968.20		1.89	8.62E+01		2.03E+02
		1045.13		1.84	-4.39E+01		1.77E+02
		1325.51		1.62	4.26E+01		2.22E+02
		1355.18		1.04	3.43E+01		3.35E+02
		1368.16		2.62	-4.21E+02		1.39E+02
		1436.56		1.23	-7.33E+01		2.95E+02
		1690.98		47.30	3.09E+00		7.78E+00
	I-125	30.98		20.10	7.34E+00	1.91E+01	1.91E+01
		35.49		6.68	8.67E+01		6.40E+01
+	SB-125	176.31		6.82	-1.64E+01	5.15E+00	2.93E+01
		380.45		1.52	2.42E+00		1.08E+02
		427.88	*	29.60	7.80E+00		5.15E+00
		463.36		10.49	6.07E+00		1.65E+01
		600.60		17.86	-2.93E+02		9.70E+00
		606.72		5.03	-5.21E+02		1.34E+02
		635.95		11.31	5.62E+00		1.40E+01
		671.45		1.80	-4.10E+01		9.19E+01
	@ XE-125	188.42		54.00	1.00E+26	1.00E+26	1.00E+26
	@ I-126	243.38		30.10	1.00E+26		1.00E+26
	SB-126	388.63		34.10	2.56E+01	9.06E+01	9.06E+01
		414.80		83.30	-3.80E+01	3.55E+01	4.54E+01
		666.30		99.60	-8.20E+00		4.32E+01
		695.00		99.60	-8.18E+00		3.55E+01
		697.00		28.90	-7.52E+01		1.23E+02
		720.50		53.80	1.93E+01		6.76E+01
		856.70		17.60	4.12E+01		2.43E+02

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	I-129	39.58		7.45	-4.38E+01	2.73E+01	2.73E+01
@	I-130	418.01		34.15	1.00E+26	1.00E+26	1.00E+26
@		536.09		99.00	1.00E+26		1.00E+26
@		668.54		96.10	1.00E+26		1.00E+26
@		739.48		82.30	1.00E+26		1.00E+26
@		1157.47		11.30	1.00E+26		1.00E+26
	I-131	284.30	*	6.14	-1.26E+04	2.14E+02	1.91E+03
		364.49		81.70	-8.83E+01		2.14E+02
		636.99		7.17	4.88E+02		2.49E+03
		722.91		1.77	2.07E+03		1.11E+04
	XE-131M	163.93		1.91	1.72E+03	2.86E+03	2.86E+03
	TE-132	111.76		1.74	2.87E+07	3.27E+05	1.68E+07
		116.30		1.96	-6.08E+06		1.66E+07
		228.16		88.00	-9.44E+05		3.27E+05
	BA-133	53.16		2.20	-2.52E+01	5.39E+00	1.02E+02
		79.62		2.62	3.01E+01		1.20E+02
		81.00		34.06	-1.82E+01		8.73E+00
		160.61		0.64	-3.35E+02		3.46E+02
		223.23		0.45	-1.45E+02		3.96E+02
		276.40		7.16	-4.75E+01		2.56E+01
		302.85		18.33	-6.51E+01		1.33E+01
		356.02		62.05	-4.25E+01		5.39E+00
		383.85		8.94	-2.31E+00		1.79E+01
	I-133	529.87		87.00	-1.07E+19	2.96E+19	2.96E+19
		875.33		4.51	-2.88E+20		6.44E+20
	CS-134	475.35		1.47	-3.32E+01	2.16E+00	1.10E+02
		563.23		8.38	6.03E+00		2.08E+01
		569.32		15.43	-1.83E+00		1.08E+01
		604.70		97.56	-4.09E+01		3.63E+00
		795.84		85.44	-2.60E+00		2.16E+00
		801.93		8.73	-9.26E+00		2.42E+01
		1038.57		1.00	3.62E+01		1.87E+02
		1167.94		1.80	-5.57E+01		1.07E+02
		1365.15		3.04	-7.26E+00		6.30E+01
@	I-134	405.45		7.35	1.00E+26	1.00E+26	1.00E+26
@		540.83		7.60	1.00E+26		1.00E+26
@		595.36		11.20	1.00E+26		1.00E+26
@		621.79		10.60	1.00E+26		1.00E+26
@		677.34		7.80	1.00E+26		1.00E+26
@		847.03		95.40	1.00E+26		1.00E+26
@		884.09		64.90	1.00E+26		1.00E+26
@		1072.55		15.00	1.00E+26		1.00E+26
@		1136.16		9.20	1.00E+26		1.00E+26
	CS-135	787.20		100.00	2.15E+00	1.93E+00	2.15E+00
		846.10		95.90	-5.51E-01		1.93E+00
@	I-135	417.63		3.55	1.00E+26	1.00E+26	1.00E+26
@		546.56		7.20	1.00E+26		1.00E+26
@		836.80		6.73	1.00E+26		1.00E+26
@		1038.76		8.00	1.00E+26		1.00E+26
@		1124.00		3.64	1.00E+26		1.00E+26
@		1131.51		22.74	1.00E+26		1.00E+26
@		1260.41		28.90	1.00E+26		1.00E+26

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
@	I-135	1457.56	8.73	1.00E+26	1.00E+26	1.00E+26
@		1678.03	9.62	1.00E+26		1.00E+26
@		1706.46	4.13	1.00E+26		1.00E+26
@		1791.20	7.77	1.00E+26		1.00E+26
@	XE-135	249.79	90.20	1.00E+26	1.00E+26	1.00E+26
@		608.18	2.90	1.00E+26		1.00E+26
@	XE-135M	526.56	80.50	1.00E+26	1.00E+26	1.00E+26
	CS-136	66.88	4.80	4.01E+03	3.11E+01	1.20E+03
		86.36	5.20	-2.56E+03		1.04E+03
		153.25	5.77	1.99E+03		7.87E+02
		163.92	3.40	6.99E+02		1.16E+03
		176.60	10.00	-1.80E+02		3.55E+02
		273.65	11.10	-1.42E+02		4.87E+02
		340.55	42.30	-1.27E+01		8.71E+01
		818.51	100.00	-8.67E+00		3.11E+01
		1048.07	80.00	1.17E+01		4.26E+01
		1235.36	20.10	-1.69E+02		3.28E+02
	CS-137	661.66	85.10	-1.37E+00	2.17E+00	2.17E+00
@	CS-138	138.10	1.49	1.00E+26	1.00E+26	1.00E+26
@		227.76	1.51	1.00E+26		1.00E+26
@		408.98	4.66	1.00E+26		1.00E+26
@		462.80	30.70	1.00E+26		1.00E+26
@		547.00	10.76	1.00E+26		1.00E+26
@		871.80	5.11	1.00E+26		1.00E+26
@		1009.78	29.80	1.00E+26		1.00E+26
@		1147.22	1.24	1.00E+26		1.00E+26
@		1343.59	1.14	1.00E+26		1.00E+26
@		1435.86	76.30	1.00E+26		1.00E+26
	LA-138	788.74	33.60	6.01E+00	2.90E+00	6.31E+00
		1435.80	66.40	-4.72E-01		2.90E+00
@	BA-139	165.86	23.60	1.00E+26	1.00E+26	1.00E+26
	CE-139	165.85	79.90	1.64E+00	3.50E+00	3.50E+00
	BA-140	162.66	6.21	-4.72E+02	1.40E+02	6.98E+02
		304.85	4.30	-1.63E+02		9.56E+02
		423.72	3.10	-6.05E+02		1.28E+03
		437.58	1.93	-1.59E+03		1.70E+03
		537.26	24.39	1.63E+01		1.40E+02
	LA-140	328.76	20.32	7.66E+10	1.86E+10	8.54E+10
		432.49	2.90	-3.73E+11		4.86E+11
		487.02	45.50	-6.78E+09		2.89E+10
		751.64	4.33	-2.49E+11		3.08E+11
		815.77	23.30	-8.15E+10		5.68E+10
		867.85	5.50	1.73E+10		2.70E+11
		919.55	2.66	-3.35E+11		5.99E+11
		925.19	6.90	-4.55E+11		2.39E+11
		1596.21	95.40	1.46E+09		1.86E+10
	CE-141	145.44	48.20	-1.16E+01	1.74E+01	1.74E+01
	CE-144	80.12	1.36	-4.33E+02	2.10E+01	2.50E+02
		133.51	11.09	-4.13E-01		2.10E+01
	PM-144	476.78	41.98	1.23E+00	1.75E+00	4.25E+00
		618.01	98.59	-6.38E+01		1.75E+00
		694.00	0.55	-1.32E+02		3.15E+02

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
PM-144	696.49		99.49	-1.20E+00	1.75E+00	1.81E+00
	778.57		1.51	-5.39E+02		1.33E+02
	814.14		0.55	-4.36E+02		3.33E+02
PM-146	146.20		0.22	-1.60E+03	2.52E+00	1.19E+03
	453.88		66.00	-1.74E+00		2.52E+00
	589.80		0.43	-4.36E+02		3.76E+02
	633.25		1.12	6.58E+01		1.41E+02
	735.93		22.80	-4.10E+00		7.22E+00
	747.24		17.71	2.77E+00		1.00E+01
ND-147	91.11		27.90	-1.05E+03	3.66E+02	3.66E+02
	319.41		1.95	-4.66E+03		2.64E+03
	398.15		0.87	-8.90E+03		7.17E+03
	439.89		1.20	-3.93E+03		4.34E+03
	531.02		13.09	9.73E+01		4.16E+02
EU-152	121.78	*	28.42	4.99E+00	6.01E+00	6.01E+00
	244.70		7.49	-4.95E+01		3.36E+01
	295.94	*	0.44	6.54E+03		3.14E+02
	344.28		26.58	-2.68E+01		6.32E+00
	411.12		2.23	-1.64E+02		7.80E+01
	443.98		3.09	2.49E+01		5.64E+01
	688.67		0.83	3.64E+01		1.87E+02
	778.90		12.96	-4.01E+01		1.40E+01
	867.39		4.15	2.22E-01		4.45E+01
	964.13		14.50	8.78E+00		1.44E+01
	1005.28		0.65	-2.94E+02		4.30E+02
	1085.87		10.16	5.43E-02		1.95E+01
	1089.70		1.71	1.65E+01		1.14E+02
	1112.12		13.54	-1.62E+02		1.40E+01
	1212.95		1.40	3.65E+01		1.50E+02
	1299.12		1.63	4.64E+01		1.20E+02
	1408.01	*	20.87	1.18E+01		8.71E+00
GD-153	69.67		2.54	-1.23E+02	8.56E+00	1.39E+02
	97.43		30.20	-2.01E+01		8.56E+00
	103.18		21.44	-1.72E+01		9.02E+00
EU-154	123.07	*	40.78	3.50E+00	4.20E+00	4.20E+00
	247.93		6.95	-1.20E+02		2.53E+01
	444.49		0.56	2.00E+02		3.16E+02
	582.10		0.89	1.57E+02		2.11E+02
	591.76		4.99	-2.03E+01		3.25E+01
	692.42		1.80	-2.63E+01		8.65E+01
	723.30		20.22	1.54E+00		8.27E+00
	756.80		4.57	-3.27E+01		3.69E+01
	815.53		0.52	-4.66E+02		3.19E+02
	845.39		0.59	-4.96E+01		3.22E+02
	873.19		12.27	-8.64E+00		1.44E+01
	892.78		0.52	-2.73E+00		4.12E+02
	904.08		0.90	8.50E+00		2.40E+02
	996.26		10.59	-3.04E+01		2.38E+01
	1004.72		18.00	-9.70E+00		1.56E+01
	1246.15		0.87	-1.12E+03		2.34E+02
	1274.44		35.19	-6.07E+00		5.03E+00
	1494.05		0.70	-5.08E+00		3.08E+02

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	EU-154	1596.49		1.80	2.34E+01	4.20E+00	1.23E+02
	EU-155	45.30		1.32	1.49E+02	7.95E+00	1.80E+02
		60.01		1.13	-3.31E+02		2.13E+02
		86.54		30.70	-2.41E+01		9.82E+00
		105.31		21.15	-1.26E+01		7.95E+00
	W-187	72.00		11.10	-1.66E+18	3.84E+17	1.54E+18
		134.25		8.80	3.41E+15		1.62E+18
		479.55		21.80	1.39E+17		5.45E+17
		618.26		6.28	-6.31E+19		1.73E+18
		625.52		1.09	-3.75E+18		9.29E+18
		685.73		27.30	-2.71E+15		3.84E+17
		772.89		4.12	-1.01E+19		4.82E+18
	IR-192	295.96		28.66	1.29E+02	3.41E+00	2.06E+01
		308.46		30.00	-1.22E+01		9.23E+00
		316.51		82.81	-3.54E+00		3.41E+00
		468.07		47.83	-3.28E+00		5.35E+00
		588.58		4.51	-5.28E+01		6.08E+01
		604.41		8.23	-7.74E+02		6.87E+01
		612.47		5.31	-6.95E+02		2.07E+02
	TL-201	135.34		2.56	-8.01E+06	6.12E+06	2.41E+07
		167.43		10.00	-1.91E+06		6.12E+06
	HG-203	279.20		81.46	-1.11E+01	4.71E+00	4.71E+00
	TL-208	277.36		6.31	-6.26E+01	2.21E+00	2.76E+01
		510.77		22.60	1.11E+01		8.56E+00
		583.19		84.50	1.85E+00		2.21E+00
		763.13		1.81	-3.23E+02		1.33E+02
		860.56		12.42	6.36E-01		1.56E+01
+	PB-210	46.54	*	4.25	6.93E+00	5.11E+01	5.11E+01
+	BI-211	351.06	*	12.91	5.24E+02	1.40E+01	1.40E+01
+	PB-211	404.85	*	3.78	1.13E+02	3.35E+01	3.35E+01
		427.09	*	1.76	1.26E+02		8.34E+01
		704.64		0.46	2.56E+02		4.10E+02
		766.51		0.62	1.53E+03		5.06E+02
		832.01	*	3.52	7.25E+01		4.19E+01
	BI-212	727.33		6.58	-5.37E+00	2.42E+01	2.42E+01
		785.37		1.10	1.90E+02		1.94E+02
		1078.62		0.56	-1.62E+02		3.38E+02
		1620.50		1.49	-1.16E+01		1.20E+02
	PB-212	115.18		0.59	6.03E+01	6.50E+00	2.93E+02
		238.63		43.30	2.35E+01		6.50E+00
		300.09		3.28	-3.63E+02		7.36E+01
+	BI-214	609.31	*	44.80	1.48E+02	3.14E+00	3.14E+00
		665.45	*	1.29	1.72E+02		9.48E+01
		768.36	*	4.80	1.92E+02		2.64E+01
		806.17	*	1.22	1.19E+02		9.30E+01
		934.06	*	3.03	1.47E+02		4.32E+01
		1120.29	*	14.80	1.49E+02		9.29E+00
		1155.19	*	1.64	1.60E+02		7.45E+01
		1207.68		0.49	2.05E+02		4.32E+02
		1238.11	*	5.86	1.47E+02		2.37E+01
		1280.96		1.44	8.96E+01		1.55E+02
		1377.67	*	3.92	1.49E+02		3.83E+01

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BI-214	1385.31		0.89	-6.04E+02	3.14E+00	2.71E+02
		1401.50		1.55	-8.63E+01		1.66E+02
		1407.98	*	2.80	8.73E+01		6.44E+01
		1415.80		0.48	-7.64E+02		4.52E+02
		1509.23	*	2.12	1.34E+02		7.45E+01
		1583.22		0.70	6.90E+01		3.11E+02
		1661.28	*	1.14	1.71E+02		7.20E+01
		1729.59	*	2.88	1.54E+02		4.05E+01
		1764.49	*	15.36	1.60E+02		6.19E+00
		1847.42		2.04	1.08E+02		1.20E+02
+	PB-214	53.23		1.11	-4.95E+01	5.06E+00	1.99E+02
		241.98	*	7.50	6.51E+01		2.27E+01
		258.79		0.55	1.37E+03		4.26E+02
		295.21	*	18.50	1.54E+02		7.41E+00
		351.92	*	35.80	1.89E+02		5.06E+00
		785.91	*	0.85	1.92E+02		1.29E+02
		839.03		0.63	-1.42E+02		3.12E+02
+	RN-219	130.59		0.12	-2.94E+02	1.17E+01	1.68E+03
		271.23	*	10.80	1.05E+02		1.17E+01
		401.81	*	6.37	1.13E+02		2.10E+01
	RN-220	549.73		0.11	1.15E+02	1.49E+03	1.49E+03
+	RA-223	122.32	*	1.19	1.18E+02	9.34E+00	1.42E+02
		144.23	*	3.22	3.15E+02		5.59E+01
		154.21	*	5.62	1.07E+02		3.87E+01
		158.63		0.69	-4.00E+02		3.11E+02
		179.54		0.15	-8.73E+03		1.31E+03
		269.46	*	13.70	1.08E+02		9.34E+00
		288.18		0.16	-1.20E+04		1.19E+03
		323.87	*	3.93	2.92E+01		3.79E+01
		328.40		0.21	1.77E+03		1.06E+03
		338.28	*	2.79	3.58E+01		4.17E+01
		342.90		0.22	-3.20E+03		8.09E+02
		346.80		0.18	-2.43E+03		9.34E+02
		371.68		0.48	5.90E+01		3.21E+02
	RA-224	240.99		3.97	7.81E+01	6.52E+01	6.52E+01
	RA-226	186.10	*	3.50	6.93E+02	5.60E+01	5.60E+01
+	TH-227	50.13	*	8.00	2.78E+01	1.72E+01	2.41E+01
		79.72		1.89	4.14E+01		1.64E+02
		93.93	*	1.37	5.34E+02		1.50E+02
		210.65	*	1.10	1.86E+01		1.17E+02
		235.97	*	12.70	5.67E+01		1.72E+01
		256.25	*	7.01	1.46E+02		2.75E+01
		286.12	*	1.54	-4.09E+01		7.25E+01
		300.00	*	2.67	1.55E+02		4.86E+01
		304.51		1.23	-7.12E+02		1.76E+02
		329.85	*	2.69	4.76E+01		4.93E+01
		334.38	*	1.05	2.10E+01		1.28E+02
	AC-228	99.50		1.28	-9.79E+02	8.05E+00	1.56E+02
		129.07		2.45	-3.64E+01		8.20E+01
		153.98		0.74	9.23E+02		3.34E+02
		209.25		3.88	-1.11E+01		5.11E+01
		270.24		3.43	7.77E+02		9.91E+01

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AC-228	327.90		3.06	2.08E+02	8.05E+00	7.67E+01
		332.37		0.40	2.30E+02		5.51E+02
		338.32		11.25	-3.68E+00		1.78E+01
		409.46		1.94	-1.40E+02		1.07E+02
		463.01		4.44	1.38E+01		3.75E+01
		508.96		0.47	6.17E+02		4.18E+02
		562.50		0.87	6.10E+01		1.91E+02
		755.32		1.00	-2.90E+01		1.68E+02
		772.29		1.50	-3.48E+02		2.00E+02
		782.14		0.50	-1.89E+02		4.15E+02
		794.95		4.34	-4.08E+01		4.06E+01
		830.49		0.55	-2.70E+02		4.36E+02
		835.71		1.68	-2.13E+01		1.46E+02
		840.38		0.94	-1.41E+02		2.04E+02
		904.20		0.78	9.69E+00		2.74E+02
		911.21		26.60	3.76E+00		8.05E+00
		964.77		5.11	2.51E+01		4.07E+01
		968.97		16.20	5.20E+00		1.25E+01
		1247.08		0.50	-1.97E+03		3.69E+02
		1459.14		0.80	1.10E+02		2.99E+02
		1495.91		0.89	-3.89E+01		2.41E+02
		1580.54		0.61	9.51E+01		3.52E+02
		1588.21		3.27	1.65E+01		6.95E+01
		1630.63		1.60	-1.06E+01		1.14E+02
	TH-228	84.37	*	1.23	1.58E+03	1.78E+02	1.78E+02
		215.99		0.26	-1.83E+02		6.88E+02
	TH-229	75.09	*	0.61	-3.94E+02	4.35E+01	2.94E+02
		86.35		3.90	-1.86E+02		7.56E+01
		124.60		1.43	-3.43E+01		1.43E+02
		136.99		1.18	-4.92E+02		1.75E+02
		148.15		0.88	-5.61E+02		2.45E+02
		154.34	*	0.77	7.79E+02		2.82E+02
		156.41		1.19	-6.13E+01		2.10E+02
		193.51		4.41	-3.55E+02		4.35E+01
		204.69		0.60	3.85E+02		3.46E+02
		210.85	*	2.77	7.37E+00		4.63E+01
+	PA-231	283.69	*	1.70	-3.83E+02	5.27E+01	5.78E+01
		300.07	*	2.46	1.69E+02		5.27E+01
		302.65	*	2.20	1.22E+02		6.00E+01
		330.06	*	1.40	9.14E+01		9.47E+01
+	TH-231	81.23	*	0.89	8.55E+02	3.32E+01	2.69E+02
		84.21	*	6.60	2.94E+02		3.32E+01
		89.95		0.94	-1.73E+03		2.56E+02
	TH-232	63.81	*	0.27	3.36E+03	1.08E+03	1.08E+03
	U-232	57.78		0.20	-4.40E+03	1.14E+03	1.14E+03
		129.08		0.07	-1.30E+03		2.92E+03
+	PA-233	75.35	*	1.39	-1.73E+02	4.34E+00	1.29E+02
		86.81		1.97	-4.92E+02		1.32E+02
		103.97		0.87	-3.70E+02		1.89E+02
		271.48	*	0.33	3.47E+03		3.85E+02
		300.34	*	6.62	6.27E+01		1.96E+01
		312.17		38.60	-2.90E-01		4.34E+00

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
PA-233	340.81	4.47	-6.53E+00	4.34E+00	4.48E+01
	375.45	0.68	7.92E+00		2.28E+02
	398.62	1.39	-1.55E+02		1.55E+02
	415.76	1.75	7.89E+00		1.00E+02
U-233	42.44	0.09	-2.62E+03	2.35E+03	2.35E+03
	54.70	0.02	-9.83E+03		1.25E+04
	97.13	0.02	-2.59E+04		1.10E+04
PA-234	62.70	1.55	7.86E+02	1.12E+01	2.04E+02
	99.86	3.19	-3.39E+02		6.16E+01
	125.46	0.78	-5.93E+01		2.62E+02
	131.30	18.00	2.08E-01		1.12E+01
	140.50	0.81	-4.44E+02		2.63E+02
	152.71	5.97	7.79E+01		4.14E+01
	159.48	0.65	-4.65E+02		3.30E+02
	170.85	0.50	-3.11E+02		3.91E+02
	186.15	1.76	1.37E+03		1.79E+02
	193.73	0.49	-2.95E+03		3.90E+02
	200.97	0.90	-7.00E+01		2.16E+02
	203.12	1.23	1.21E+02		1.67E+02
	227.00	9.99	2.25E+00		1.81E+01
	245.37	0.75	-5.73E+02		3.15E+02
	249.22	2.47	-5.06E+02		7.10E+01
	272.28	1.08	2.56E+03		3.18E+02
	293.79	2.99	7.47E+02		1.17E+02
	330.40	0.77	-1.08E+01		2.76E+02
	369.50	2.47	-1.03E+00		6.13E+01
	372.00	1.21	1.55E+01		1.27E+02
	458.68	1.13	6.33E+01		1.51E+02
	506.75	1.29	6.95E+01		1.41E+02
	513.40	1.10	2.09E+02		1.76E+02
	521.40	0.74	-1.17E+02		2.12E+02
	565.20	1.03	1.98E+01		1.59E+02
	569.32	11.80	-2.28E+00		1.35E+01
	602.60	0.54	-9.30E+03		3.13E+02
	663.90	0.54	-1.38E+02		3.69E+02
	666.50	1.16	1.89E+02		1.69E+02
	669.70	0.99	-5.25E+01		1.95E+02
	692.60	1.24	-3.77E+01		1.24E+02
	699.03	3.61	-9.08E+00		4.77E+01
	705.90	2.27	5.93E+01		8.38E+01
	730.90	0.63	5.50E+01		2.57E+02
	733.39	6.90	-9.55E+00		2.32E+01
	738.00	1.15	-2.43E+01		1.47E+02
	742.81	2.06	5.55E+01		8.82E+01
	755.00	1.22	-2.61E+01		1.35E+02
	780.40	0.90	-1.39E+02		2.02E+02
	786.27	1.19	1.72E+02		1.80E+02
	794.90	1.34	-1.32E+02		1.31E+02
	796.10	2.58	-8.19E+01		6.81E+01
	805.52	3.14	6.49E+01		6.62E+01
	819.20	1.88	-1.66E+01		9.13E+01
	824.65	3.12	-8.29E+01		5.89E+01

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PA-234	831.50		4.12	-2.74E+01	1.12E+01	5.82E+01
		876.00		2.52	-3.30E+01		7.17E+01
		880.50		10.40	-1.96E+00		1.87E+01
		883.24		9.58	1.17E+01		2.21E+01
		898.67		3.24	-3.98E+00		6.42E+01
		926.00		16.80	-2.29E+01		1.23E+01
		946.18		15.00	0.00E+00		1.28E+01
		980.48		5.15	-7.97E+00		3.51E+01
		984.20		1.62	3.71E+01		1.18E+02
		1028.70		0.57	-4.56E+01		3.01E+02
		1083.20		0.50	1.06E+02		4.02E+02
		1352.90		1.15	2.66E+01		1.61E+02
		1393.90		2.06	-1.74E+02		9.02E+01
		1668.40		0.76	-3.72E+02		2.55E+02
		1693.80		0.69	7.86E+00		2.55E+02
+	PA-234M	766.36		0.29	3.23E+03	1.85E+02	1.07E+03
		811.00		0.51	-2.94E+02		3.89E+02
		1001.03	*	0.84	5.67E+02		1.85E+02
+	TH-234	63.29	*	4.84	1.88E+02	3.66E+01	6.04E+01
		83.30	*	0.08	2.46E+04		2.77E+03
		92.59	*	5.58	4.29E+02		3.66E+01
		112.81		0.28	1.13E+03		6.56E+02
	U-234	53.20		0.12	-4.47E+02	1.80E+03	1.80E+03
		120.90		0.03	-2.99E+03		6.00E+03
+	U-235	109.16		1.54	-5.09E+01	3.42E+00	1.09E+02
		143.76	*	10.96	9.25E+01		1.64E+01
		163.36		5.08	5.22E+00		4.21E+01
		185.71	*	57.20	4.24E+01		3.42E+00
		194.94		0.63	-6.92E+02		3.04E+02
		202.11		1.08	4.65E+01		1.84E+02
		205.31		5.01	4.10E+01		4.12E+01
	NP-237	57.10		0.39	-2.92E+03	2.38E+01	5.81E+02
		86.48		12.40	-5.84E+01		2.38E+01
		94.64		0.60	3.90E+03		5.26E+02
		143.25		0.43	-2.34E+02		5.99E+02
	NP-239	106.12		27.20	-9.89E+07	7.03E+07	7.03E+07
		209.75		3.42	-2.09E+08		6.69E+08
		228.18		10.76	-5.68E+08		1.97E+08
		277.60		14.38	-3.23E+08		1.41E+08
		334.31		2.07	-1.18E+09		1.09E+09
	AM-241	59.54		35.90	-1.32E+01	6.47E+00	6.47E+00
	CM-241	132.41		3.90	1.92E+01	7.02E+00	1.68E+02
		165.01		3.40	9.66E+01		2.01E+02
		205.88		2.67	2.09E+02		2.47E+02
		430.63		4.06	-5.31E+01		1.59E+02
		463.27		1.23	1.60E+02		4.36E+02
		471.80		71.30	-1.01E+00		7.02E+00
		636.88		1.53	1.06E+02		3.21E+02
	AM-243	74.66	*	68.20	-3.53E+00	2.63E+00	2.63E+00

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.60		10.42	3.39E+01	3.39E+01	1.82E+01	1.66E+01
	NA-22	1274.53		99.94	1.82E+00	1.82E+00	-2.20E+00	8.72E-01
@	NA-24	1368.63		100.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
>@		2754.03		99.94	0.00E+00		0.00E+00	0.00E+00
	K-40	1460.83		10.67	2.28E+01	2.28E+01	1.25E+01	1.10E+01
@	AR-41	1293.59		99.10	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	CR-51	320.08		9.86	6.73E+01	6.73E+01	-9.75E+01	3.32E+01
	MN-54	834.85		99.98	2.74E+00	2.74E+00	3.29E+00	1.34E+00
	CO-56	846.77		99.93	3.07E+00	2.23E+00	-7.82E-01	1.49E+00
		977.37		1.44	2.09E+02		-1.68E+01	1.01E+02
		1037.84		13.99	2.08E+01		3.79E+00	1.00E+01
		1175.10		2.28	1.35E+02		1.30E+01	6.51E+01
		1238.28		67.56	8.60E+00		2.01E+01	4.21E+00
		1360.21		4.33	6.69E+01		-2.50E+01	3.20E+01
		1771.35		15.69	6.00E+01		-2.21E+02	2.95E+01
		2015.18		3.08	5.66E+00		0.00E+00	0.00E+00
		2034.76		7.89	2.23E+00		0.00E+00	0.00E+00
@	MN-56	846.75		98.87	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		1810.72		27.19	1.00E+26		1.00E+26	1.00E+20
>@		2113.05		14.34	0.00E+00		0.00E+00	0.00E+00
+	CO-57	122.06	*	85.60	2.28E+00	2.28E+00	1.89E+00	1.13E+00
		136.47		10.68	2.22E+01		-4.58E+01	1.10E+01
		692.41		0.16	1.13E+03		-3.43E+02	5.47E+02
	CO-58	810.78		99.45	3.43E+00	3.43E+00	-2.59E+00	1.67E+00
		863.96		0.68	4.74E+02		-2.31E+01	2.30E+02
		1674.73		0.52	4.80E+02		-5.75E+02	2.25E+02
	FE-59	142.65		1.02	5.97E+02	8.05E+00	-3.48E+02	2.97E+02
		192.35		3.08	1.47E+02		-1.13E+03	7.27E+01
		1099.25		56.50	8.05E+00		5.09E-01	3.89E+00
		1291.60		43.20	1.04E+01		-1.12E+01	4.97E+00
	CO-60	1173.24		99.90	1.89E+00	1.89E+00	1.19E-01	9.08E-01
		1332.50		99.98	1.91E+00		-8.53E-02	9.17E-01
@	CU-64	1345.77		0.47	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	ZN-65	1115.55		50.60	1.10E+01	1.10E+01	-3.49E+01	5.43E+00
	SE-75	66.05		1.12	3.91E+02	3.77E+00	1.62E+03	1.94E+02
		96.73		3.42	9.46E+01		-1.61E+02	4.70E+01
		121.12		17.14	1.63E+01		-6.29E+00	8.11E+00
		136.00		58.27	4.83E+00		-5.17E+00	2.40E+00
		198.61		1.47	1.78E+02		-1.62E+02	8.83E+01
		264.66		58.50	3.77E+00		-7.19E+00	1.86E+00
		279.54		24.79	9.50E+00		-2.21E+01	4.69E+00

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	SE-75	303.93		1.31	2.43E+02	3.77E+00	-1.24E+03	1.20E+02
		400.66		11.37	3.10E+01		-1.31E+01	1.53E+01
	RB-83	520.39		44.70	5.43E+00	5.43E+00	-6.97E+00	2.65E+00
		529.59		29.30	8.47E+00		-3.07E+00	4.14E+00
		552.59		15.96	1.55E+01		-8.60E+00	7.54E+00
@	BR-84	881.60		42.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		1897.60		14.90	1.00E+26		1.00E+26	1.00E+20
	KR-85	514.01		0.43	4.48E+02	4.48E+02	4.61E+02	2.20E+02
@	KR-85M	151.20		75.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		304.87		14.00	1.00E+26		1.00E+26	1.00E+20
	SR-85	514.01		95.70	3.60E+00	3.60E+00	3.71E+00	1.77E+00
@	SR-85m	151.19		12.90	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		231.86		84.40	1.00E+26		1.00E+26	1.00E+20
	RB-86	1077.00		8.64	1.78E+02	1.78E+02	-1.83E+01	8.62E+01
@	KR-87	402.59		49.60	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		673.83		1.89	1.00E+26		1.00E+26	1.00E+20
@		845.44		7.30	1.00E+26		1.00E+26	1.00E+20
@		1175.40		1.11	1.00E+26		1.00E+26	1.00E+20
@		1740.52		2.04	1.00E+26		1.00E+26	1.00E+20
@	KR-88	165.98		3.10	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		196.30		26.00	1.00E+26		1.00E+26	1.00E+20
@		362.23		2.25	1.00E+26		1.00E+26	1.00E+20
@		834.83		13.00	1.00E+26		1.00E+26	1.00E+20
@		985.78		1.52	1.00E+26		1.00E+26	1.00E+20
@		1141.33		1.28	1.00E+26		1.00E+26	1.00E+20
@		1179.51		1.00	1.00E+26		1.00E+26	1.00E+20
@		1250.67		1.12	1.00E+26		1.00E+26	1.00E+20
@		1369.50		1.48	1.00E+26		1.00E+26	1.00E+20
@		1518.39		2.15	1.00E+26		1.00E+26	1.00E+20
@		1529.77		10.90	1.00E+26		1.00E+26	1.00E+20
@	RB-88	898.03		14.04	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		1836.01		21.40	1.00E+26		1.00E+26	1.00E+20
	Y-88	898.04		93.68	3.23E+00	2.35E+00	2.27E-01	1.57E+00
		1836.06		99.24	2.35E+00		-1.35E+00	1.11E+00
	NB-94x	702.62		97.90	1.98E+00	1.77E+00	1.75E+00	9.64E-01
		871.09		99.90	1.77E+00		-8.73E-01	8.58E-01
	NB-95	765.81		99.81	9.39E+00	9.39E+00	-9.81E+00	4.62E+00
+	NB-95m	204.12		2.33	3.66E+06	3.62E+05	3.95E+06	1.82E+06
		235.69	*	24.80	3.62E+05		1.19E+06	1.79E+05
	ZR-95	724.20		44.17	6.76E+00	5.57E+00	5.17E-01	3.28E+00
		756.73		54.46	5.57E+00		-4.93E+00	2.70E+00
	NB-96	460.04		26.62	8.09E+17	2.38E+17	1.70E+17	3.97E+17
		568.87		57.97	3.53E+17		-9.31E+16	1.72E+17
		778.22		96.45	2.38E+17		-1.18E+18	1.16E+17
		849.93		20.40	1.18E+18		-1.57E+17	5.72E+17
		1200.23		19.96	1.23E+18		-2.99E+17	5.93E+17
	MO-99	140.51		4.52	5.41E+07	1.76E+07	-9.12E+07	2.69E+07
		181.06		6.08	3.76E+07		-1.64E+08	1.86E+07
		366.42		1.20	1.43E+08		-2.50E+07	7.01E+07
		739.50		12.13	1.76E+07		1.26E+07	8.55E+06
		777.92		4.28	4.76E+07		-2.36E+08	2.31E+07
@	TC-99M	140.51		89.06	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	RU-103	443.80		3.27	1.40E+02	4.51E+00	5.53E+01	6.88E+01

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	RU-103	497.08		90.90	4.51E+00	4.51E+00	-1.64E+00	2.20E+00
		610.33		5.75	3.01E+02		3.06E+03	1.49E+02
	RHRU-106	621.93		9.93	1.65E+01	1.65E+01	-2.09E+00	8.02E+00
		1050.41		1.56	1.31E+02		2.94E+01	6.33E+01
	AG-108M	433.94		90.50	1.86E+00	1.82E+00	-1.97E+00	9.11E-01
		614.28		89.90	6.49E+00		-3.52E+01	3.22E+00
		722.94		90.90	1.82E+00		3.39E-01	8.82E-01
	CD-109	88.03		3.61	7.38E+01	7.38E+01	-4.78E+02	3.67E+01
	AG-110M	116.48		1.36	1.75E+02	1.87E+00	-6.41E+01	8.69E+01
		446.81		3.72	5.44E+01		2.06E+01	2.67E+01
		620.36		2.79	6.46E+01		-4.87E+02	3.14E+01
		657.76		94.00	1.87E+00		-2.47E+00	9.10E-01
		677.62		10.28	1.61E+01		-5.60E+00	7.80E+00
		687.02		6.39	2.83E+01		8.13E+00	1.37E+01
		706.68		16.32	1.36E+01		9.62E+00	6.64E+00
		744.28		4.70	4.61E+01		3.40E+01	2.24E+01
		763.94		22.14	1.53E+01		-2.61E+01	7.50E+00
		818.03		7.29	2.66E+01		-1.13E+01	1.29E+01
		884.68		72.19	3.42E+00		2.13E+00	1.66E+00
		937.49		34.13	9.19E+00		1.31E+01	4.49E+00
		1384.30		24.12	1.47E+01		-2.29E+01	7.16E+00
		1475.79		3.97	5.78E+01		-1.45E+01	2.77E+01
		1505.04		12.95	2.63E+01		-2.13E+01	1.28E+01
		1562.30		1.02	2.37E+02		4.57E+01	1.14E+02
	SN-113	255.06		1.82	1.83E+02	3.63E+00	6.36E+02	9.06E+01
		391.69		64.00	3.63E+00		1.15E+00	1.78E+00
	IN-114	190.27		15.40	2.84E+01	2.84E+01	-1.37E+02	1.41E+01
		558.43		4.40	8.12E+01		1.03E+01	3.96E+01
		725.24		4.40	8.01E+01		4.52E+00	3.89E+01
	SB-122	564.24		69.30	3.46E+06	3.46E+06	3.29E+05	1.69E+06
	I-124	602.72		60.50	2.68E+04	2.68E+04	-7.98E+05	1.31E+04
		722.78		9.98	1.58E+05		2.52E+04	7.69E+04
		1509.49		2.99	9.77E+05		1.34E+06	4.75E+05
		1691.02		10.40	1.80E+05		7.15E+04	8.57E+04
	SB-124	602.73		97.80	3.27E+00	3.27E+00	-9.71E+01	1.59E+00
		645.85		7.38	3.66E+01		-6.09E-01	1.77E+01
		709.32		1.35	2.48E+02		-1.86E+01	1.21E+02
		713.78		2.27	1.36E+02		-9.06E+01	6.62E+01
		722.79		10.76	2.89E+01		4.60E+00	1.40E+01
		968.20		1.89	2.03E+02		8.62E+01	9.87E+01
		1045.13		1.84	1.77E+02		-4.39E+01	8.54E+01
		1325.51		1.62	2.22E+02		4.26E+01	1.07E+02
		1355.18		1.04	3.35E+02		3.43E+01	1.60E+02
		1368.16		2.62	1.39E+02		-4.21E+02	6.68E+01
		1436.56		1.23	2.95E+02		-7.33E+01	1.41E+02
		1690.98		47.30	7.78E+00		3.09E+00	3.70E+00
	I-125	30.98		20.10	1.91E+01	1.91E+01	7.34E+00	9.42E+00
		35.49		6.68	6.40E+01		8.67E+01	3.17E+01
+	SB-125	176.31		6.82	2.93E+01	5.15E+00	-1.64E+01	1.45E+01
		380.45		1.52	1.08E+02		2.42E+00	5.30E+01
		427.88	*	29.60	5.15E+00		7.80E+00	2.52E+00
		463.36		10.49	1.65E+01		6.07E+00	8.08E+00
		600.60		17.86	9.70E+00		-2.93E+02	4.73E+00

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
SB-125	606.72		5.03	1.34E+02	5.15E+00	-5.21E+02	6.66E+01
	635.95		11.31	1.40E+01		5.62E+00	6.82E+00
	671.45		1.80	9.19E+01		-4.10E+01	4.47E+01
@ XE-125	188.42		54.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	243.38		30.10	1.00E+26		1.00E+26	1.00E+20
I-126	388.63		34.10	9.06E+01	9.06E+01	2.56E+01	4.45E+01
SB-126	414.80		83.30	4.54E+01	3.55E+01	-3.80E+01	2.23E+01
	666.30		99.60	4.32E+01		-8.20E+00	2.11E+01
	695.00		99.60	3.55E+01		-8.18E+00	1.73E+01
	697.00		28.90	1.23E+02		-7.52E+01	5.97E+01
	720.50		53.80	6.76E+01		1.93E+01	3.28E+01
	856.70		17.60	2.43E+02		4.12E+01	1.18E+02
I-129	39.58		7.45	2.73E+01	2.73E+01	-4.38E+01	1.35E+01
@ I-130	418.01		34.15	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	536.09		99.00	1.00E+26		1.00E+26	1.00E+20
@	668.54		96.10	1.00E+26		1.00E+26	1.00E+20
@	739.48		82.30	1.00E+26		1.00E+26	1.00E+20
@	1157.47		11.30	1.00E+26		1.00E+26	1.00E+20
I-131	284.30	*	6.14	1.91E+03	2.14E+02	-1.26E+04	9.31E+02
	364.49		81.70	2.14E+02		-8.83E+01	1.05E+02
	636.99		7.17	2.49E+03		4.88E+02	1.21E+03
	722.91		1.77	1.11E+04		2.07E+03	5.40E+03
XE-131M	163.93		1.91	2.86E+03	2.86E+03	1.72E+03	1.42E+03
TE-132	111.76		1.74	1.68E+07	3.27E+05	2.87E+07	8.34E+06
	116.30		1.96	1.66E+07		-6.08E+06	8.24E+06
	228.16		88.00	3.27E+05		-9.44E+05	1.62E+05
BA-133	53.16		2.20	1.02E+02	5.39E+00	-2.52E+01	5.05E+01
	79.62		2.62	1.20E+02		3.01E+01	5.95E+01
	81.00		34.06	8.73E+00		-1.82E+01	4.34E+00
	160.61		0.64	3.46E+02		-3.35E+02	1.72E+02
	223.23		0.45	3.96E+02		-1.45E+02	1.96E+02
	276.40		7.16	2.56E+01		-4.75E+01	1.26E+01
	302.85		18.33	1.33E+01		-6.51E+01	6.58E+00
	356.02		62.05	5.39E+00		-4.25E+01	2.67E+00
	383.85		8.94	1.79E+01		-2.31E+00	8.79E+00
I-133	529.87		87.00	2.96E+19	2.96E+19	-1.07E+19	1.45E+19
	875.33		4.51	6.44E+20		-2.88E+20	3.12E+20
CS-134	475.35		1.47	1.10E+02	2.16E+00	-3.32E+01	5.39E+01
	563.23		8.38	2.08E+01		6.03E+00	1.02E+01
	569.32		15.43	1.08E+01		-1.83E+00	5.28E+00
	604.70		97.56	3.63E+00		-4.09E+01	1.79E+00
	795.84		85.44	2.16E+00		-2.60E+00	1.05E+00
	801.93		8.73	2.42E+01		-9.26E+00	1.18E+01
	1038.57		1.00	1.87E+02		3.62E+01	9.01E+01
	1167.94		1.80	1.07E+02		-5.57E+01	5.16E+01
	1365.15		3.04	6.30E+01		-7.26E+00	3.01E+01
@ I-134	405.45		7.35	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	540.83		7.60	1.00E+26		1.00E+26	1.00E+20
@	595.36		11.20	1.00E+26		1.00E+26	1.00E+20
@	621.79		10.60	1.00E+26		1.00E+26	1.00E+20
@	677.34		7.80	1.00E+26		1.00E+26	1.00E+20
@	847.03		95.40	1.00E+26		1.00E+26	1.00E+20
@	884.09		64.90	1.00E+26		1.00E+26	1.00E+20

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
@ I-134	1072.55	15.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1136.16	9.20	1.00E+26		1.00E+26	1.00E+20
CS-135	787.20	100.00	2.15E+00	1.93E+00	2.15E+00	1.05E+00
	846.10	95.90	1.93E+00		-5.51E-01	9.38E-01
@ I-135	417.63	3.55	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	546.56	7.20	1.00E+26		1.00E+26	1.00E+20
@	836.80	6.73	1.00E+26		1.00E+26	1.00E+20
@	1038.76	8.00	1.00E+26		1.00E+26	1.00E+20
@	1124.00	3.64	1.00E+26		1.00E+26	1.00E+20
@	1131.51	22.74	1.00E+26		1.00E+26	1.00E+20
@	1260.41	28.90	1.00E+26		1.00E+26	1.00E+20
@	1457.56	8.73	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.62	1.00E+26		1.00E+26	1.00E+20
@	1706.46	4.13	1.00E+26		1.00E+26	1.00E+20
@	1791.20	7.77	1.00E+26		1.00E+26	1.00E+20
@ XE-135	249.79	90.20	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	608.18	2.90	1.00E+26		1.00E+26	1.00E+20
@ XE-135M	526.56	80.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
CS-136	66.88	4.80	1.20E+03	3.11E+01	4.01E+03	5.97E+02
	86.36	5.20	1.04E+03		-2.56E+03	5.20E+02
	153.25	5.77	7.87E+02		1.99E+03	3.91E+02
	163.92	3.40	1.16E+03		6.99E+02	5.77E+02
	176.60	10.00	3.55E+02		-1.80E+02	1.76E+02
	273.65	11.10	4.87E+02		-1.42E+02	2.42E+02
	340.55	42.30	8.71E+01		-1.27E+01	4.30E+01
	818.51	100.00	3.11E+01		-8.67E+00	1.51E+01
	1048.07	80.00	4.26E+01		1.17E+01	2.06E+01
	1235.36	20.10	3.28E+02		-1.69E+02	1.61E+02
CS-137	661.66	85.10	2.17E+00	2.17E+00	-1.37E+00	1.06E+00
@ CS-138	138.10	1.49	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	227.76	1.51	1.00E+26		1.00E+26	1.00E+20
@	408.98	4.66	1.00E+26		1.00E+26	1.00E+20
@	462.80	30.70	1.00E+26		1.00E+26	1.00E+20
@	547.00	10.76	1.00E+26		1.00E+26	1.00E+20
@	871.80	5.11	1.00E+26		1.00E+26	1.00E+20
@	1009.78	29.80	1.00E+26		1.00E+26	1.00E+20
@	1147.22	1.24	1.00E+26		1.00E+26	1.00E+20
@	1343.59	1.14	1.00E+26		1.00E+26	1.00E+20
@	1435.86	76.30	1.00E+26		1.00E+26	1.00E+20
LA-138	788.74	33.60	6.31E+00	2.90E+00	6.01E+00	3.08E+00
	1435.80	66.40	2.90E+00		-4.72E-01	1.39E+00
@ BA-139	165.86	23.60	1.00E+26	1.00E+26	1.00E+26	1.00E+20
CE-139	165.85	79.90	3.50E+00	3.50E+00	1.64E+00	1.74E+00
BA-140	162.66	6.21	6.98E+02	1.40E+02	-4.72E+02	3.46E+02
	304.85	4.30	9.56E+02		-1.63E+02	4.72E+02
	423.72	3.10	1.28E+03		-6.05E+02	6.30E+02
	437.58	1.93	1.70E+03		-1.59E+03	8.32E+02
	537.26	24.39	1.40E+02		1.63E+01	6.86E+01
LA-140	328.76	20.32	8.54E+10	1.86E+10	7.66E+10	4.22E+10
	432.49	2.90	4.86E+11		-3.73E+11	2.39E+11
	487.02	45.50	2.89E+10		-6.78E+09	1.41E+10
	751.64	4.33	3.08E+11		-2.49E+11	1.49E+11
	815.77	23.30	5.68E+10		-8.15E+10	2.75E+10

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
LA-140	867.85		5.50	2.70E+11	1.86E+10	1.73E+10	1.31E+11
	919.55		2.66	5.99E+11		-3.35E+11	2.90E+11
	925.19		6.90	2.39E+11		-4.55E+11	1.16E+11
	1596.21		95.40	1.86E+10		1.46E+09	8.92E+09
CE-141	145.44		48.20	1.74E+01	1.74E+01	-1.16E+01	8.64E+00
CE-144	80.12		1.36	2.50E+02	2.10E+01	-4.33E+02	1.24E+02
	133.51		11.09	2.10E+01		-4.13E-01	1.04E+01
PM-144	476.78		41.98	4.25E+00	1.75E+00	1.23E+00	2.08E+00
	618.01		98.59	1.75E+00		-6.38E+01	8.51E-01
	694.00		0.55	3.15E+02		-1.32E+02	1.53E+02
	696.49		99.49	1.81E+00		-1.20E+00	8.80E-01
	778.57		1.51	1.33E+02		-5.39E+02	6.46E+01
	814.14		0.55	3.33E+02		-4.36E+02	1.61E+02
PM-146	146.20		0.22	1.19E+03	2.52E+00	-1.60E+03	5.93E+02
	453.88		66.00	2.52E+00		-1.74E+00	1.23E+00
	589.80		0.43	3.76E+02		-4.36E+02	1.83E+02
	633.25		1.12	1.41E+02		6.58E+01	6.85E+01
	735.93		22.80	7.22E+00		-4.10E+00	3.50E+00
	747.24		17.71	1.00E+01		2.77E+00	4.87E+00
ND-147	91.11		27.90	3.66E+02	3.66E+02	-1.05E+03	1.82E+02
	319.41		1.95	2.64E+03		-4.66E+03	1.30E+03
	398.15		0.87	7.17E+03		-8.90E+03	3.53E+03
	439.89		1.20	4.34E+03		-3.93E+03	2.13E+03
	531.02		13.09	4.16E+02		9.73E+01	2.03E+02
EU-152	121.78	*	28.42	6.01E+00	6.01E+00	4.99E+00	2.98E+00
	244.70		7.49	3.36E+01		-4.95E+01	1.66E+01
	295.94	*	0.44	3.14E+02		6.54E+03	1.54E+02
	344.28		26.58	6.32E+00		-2.68E+01	3.11E+00
	411.12		2.23	7.80E+01		-1.64E+02	3.83E+01
	443.98		3.09	5.64E+01		2.49E+01	2.77E+01
	688.67		0.83	1.87E+02		3.64E+01	9.06E+01
	778.90		12.96	1.40E+01		-4.01E+01	6.83E+00
	867.39		4.15	4.45E+01		2.22E-01	2.16E+01
	964.13		14.50	1.44E+01		8.78E+00	6.99E+00
	1005.28		0.65	4.30E+02		-2.94E+02	2.10E+02
	1085.87		10.16	1.95E+01		5.43E-02	9.41E+00
	1089.70		1.71	1.14E+02		1.65E+01	5.53E+01
	1112.12		13.54	1.40E+01		-1.62E+02	6.73E+00
	1212.95		1.40	1.50E+02		3.65E+01	7.26E+01
	1299.12		1.63	1.20E+02		4.64E+01	5.75E+01
	1408.01	*	20.87	8.71E+00		1.18E+01	4.16E+00
GD-153	69.67		2.54	1.39E+02	8.56E+00	-1.23E+02	6.91E+01
	97.43		30.20	8.56E+00		-2.01E+01	4.25E+00
	103.18		21.44	9.02E+00		-1.72E+01	4.47E+00
EU-154	123.07	*	40.78	4.20E+00	4.20E+00	3.50E+00	2.08E+00
	247.93		6.95	2.53E+01		-1.20E+02	1.25E+01
	444.49		0.56	3.16E+02		2.00E+02	1.55E+02
	582.10		0.89	2.11E+02		1.57E+02	1.03E+02
	591.76		4.99	3.25E+01		-2.03E+01	1.59E+01
	692.42		1.80	8.65E+01		-2.63E+01	4.20E+01
	723.30		20.22	8.27E+00		1.54E+00	4.02E+00
	756.80		4.57	3.69E+01		-3.27E+01	1.79E+01
	815.53		0.52	3.19E+02		-4.66E+02	1.54E+02

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	EU-154	845.39		0.59	3.22E+02	4.20E+00	-4.96E+01	1.56E+02
		873.19		12.27	1.44E+01		-8.64E+00	6.98E+00
		892.78		0.52	4.12E+02		-2.73E+00	2.01E+02
		904.08		0.90	2.40E+02		8.50E+00	1.17E+02
		996.26		10.59	2.38E+01		-3.04E+01	1.16E+01
		1004.72		18.00	1.56E+01		-9.70E+00	7.62E+00
		1246.15		0.87	2.34E+02		-1.12E+03	1.13E+02
		1274.44		35.19	5.03E+00		-6.07E+00	2.41E+00
		1494.05		0.70	3.08E+02		-5.08E+00	1.48E+02
		1596.49		1.80	1.23E+02		2.34E+01	5.92E+01
	EU-155	45.30		1.32	1.80E+02	7.95E+00	1.49E+02	8.93E+01
		60.01		1.13	2.13E+02		-3.31E+02	1.06E+02
		86.54		30.70	9.82E+00		-2.41E+01	4.89E+00
		105.31		21.15	7.95E+00		-1.26E+01	3.94E+00
	W-187	72.00		11.10	1.54E+18	3.84E+17	-1.66E+18	7.65E+17
		134.25		8.80	1.62E+18		3.41E+15	8.06E+17
		479.55		21.80	5.45E+17		1.39E+17	2.67E+17
		618.26		6.28	1.73E+18		-6.31E+19	8.41E+17
		625.52		1.09	9.29E+18		-3.75E+18	4.51E+18
		685.73		27.30	3.84E+17		-2.71E+15	1.86E+17
		772.89		4.12	4.82E+18		-1.01E+19	2.37E+18
	IR-192	295.96		28.66	2.06E+01	3.41E+00	1.29E+02	1.03E+01
		308.46		30.00	9.23E+00		-1.22E+01	4.55E+00
		316.51		82.81	3.41E+00		-3.54E+00	1.68E+00
		468.07		47.83	5.35E+00		-3.28E+00	2.62E+00
		588.58		4.51	6.08E+01		-5.28E+01	2.96E+01
		604.41		8.23	6.87E+01		-7.74E+02	3.39E+01
		612.47		5.31	2.07E+02		-6.95E+02	1.03E+02
	TL-201	135.34		2.56	2.41E+07	6.12E+06	-8.01E+06	1.20E+07
		167.43		10.00	6.12E+06		-1.91E+06	3.04E+06
	HG-203	279.20		81.46	4.71E+00	4.71E+00	-1.11E+01	2.33E+00
	TL-208	277.36		6.31	2.76E+01	2.21E+00	-6.26E+01	1.36E+01
		510.77		22.60	8.56E+00		1.11E+01	4.20E+00
		583.19		84.50	2.21E+00		1.85E+00	1.08E+00
		763.13		1.81	1.33E+02		-3.23E+02	6.53E+01
		860.56		12.42	1.56E+01		6.36E-01	7.56E+00
+	PB-210	46.54	*	4.25	5.11E+01	5.11E+01	6.93E+00	2.54E+01
+	BI-211	351.06	*	12.91	1.40E+01	1.40E+01	5.24E+02	6.92E+00
+	PB-211	404.85	*	3.78	3.35E+01	3.35E+01	1.13E+02	1.64E+01
		427.09	*	1.76	8.34E+01		1.26E+02	4.08E+01
		704.64		0.46	4.10E+02		2.56E+02	2.00E+02
		766.51		0.62	5.06E+02		1.53E+03	2.49E+02
		832.01	*	3.52	4.19E+01		7.25E+01	2.02E+01
	BI-212	727.33		6.58	2.42E+01	2.42E+01	-5.37E+00	1.17E+01
		785.37		1.10	1.94E+02		1.90E+02	9.49E+01
		1078.62		0.56	3.38E+02		-1.62E+02	1.63E+02
		1620.50		1.49	1.20E+02		-1.16E+01	5.68E+01
	PB-212	115.18		0.59	2.93E+02	6.50E+00	6.03E+01	1.45E+02
		238.63		43.30	6.50E+00		2.35E+01	3.23E+00
		300.09		3.28	7.36E+01		-3.63E+02	3.64E+01
+	BI-214	609.31	*	44.80	3.14E+00	3.14E+00	1.48E+02	1.53E+00
		665.45	*	1.29	9.48E+01		1.72E+02	4.57E+01
		768.36	*	4.80	2.64E+01		1.92E+02	1.27E+01

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BI-214	806.17	*	1.22	9.30E+01	3.14E+00	1.19E+02	4.44E+01
		934.06	*	3.03	4.32E+01		1.47E+02	2.06E+01
		1120.29	*	14.80	9.29E+00		1.49E+02	4.42E+00
		1155.19	*	1.64	7.45E+01		1.60E+02	3.51E+01
		1207.68		0.49	4.32E+02		2.05E+02	2.09E+02
		1238.11	*	5.86	2.37E+01		1.47E+02	1.12E+01
		1280.96		1.44	1.55E+02		8.96E+01	7.49E+01
		1377.67	*	3.92	3.83E+01		1.49E+02	1.81E+01
		1385.31		0.89	2.71E+02		-6.04E+02	1.31E+02
		1401.50		1.55	1.66E+02		-8.63E+01	8.07E+01
		1407.98	*	2.80	6.44E+01		8.73E+01	3.08E+01
		1415.80		0.48	4.52E+02		-7.64E+02	2.18E+02
		1509.23	*	2.12	7.45E+01		1.34E+02	3.53E+01
		1583.22		0.70	3.11E+02		6.90E+01	1.49E+02
		1661.28	*	1.14	7.20E+01		1.71E+02	3.20E+01
		1729.59	*	2.88	4.05E+01		1.54E+02	1.86E+01
		1764.49	*	15.36	6.19E+00		1.60E+02	2.79E+00
		1847.42		2.04	1.20E+02		1.08E+02	5.75E+01
+	PB-214	53.23		1.11	1.99E+02	5.06E+00	-4.95E+01	9.89E+01
		241.98	*	7.50	2.27E+01		6.51E+01	1.12E+01
		258.79		0.55	4.26E+02		1.37E+03	2.11E+02
		295.21	*	18.50	7.41E+00		1.54E+02	3.64E+00
		351.92	*	35.80	5.06E+00		1.89E+02	2.49E+00
		785.91	*	0.85	1.29E+02		1.92E+02	6.16E+01
		839.03		0.63	3.12E+02		-1.42E+02	1.52E+02
+	RN-219	130.59		0.12	1.68E+03	1.17E+01	-2.94E+02	8.35E+02
		271.23	*	10.80	1.17E+01		1.05E+02	5.74E+00
		401.81	*	6.37	2.10E+01		1.13E+02	1.02E+01
	RN-220	549.73		0.11	1.49E+03	1.49E+03	1.15E+02	7.28E+02
+	RA-223	122.32	*	1.19	1.42E+02	9.34E+00	1.18E+02	7.05E+01
		144.23	*	3.22	5.59E+01		3.15E+02	2.77E+01
		154.21	*	5.62	3.87E+01		1.07E+02	1.92E+01
		158.63		0.69	3.11E+02		-4.00E+02	1.54E+02
		179.54		0.15	1.31E+03		-8.73E+03	6.51E+02
		269.46	*	13.70	9.34E+00		1.08E+02	4.59E+00
		288.18		0.16	1.19E+03		-1.20E+04	5.90E+02
		323.87	*	3.93	3.79E+01		2.92E+01	1.86E+01
		328.40		0.21	1.06E+03		1.77E+03	5.23E+02
		338.28	*	2.79	4.17E+01		3.58E+01	2.04E+01
		342.90		0.22	8.09E+02		-3.20E+03	3.99E+02
		346.80		0.18	9.34E+02		-2.43E+03	4.60E+02
		371.68		0.48	3.21E+02		5.90E+01	1.58E+02
	RA-224	240.99		3.97	6.52E+01	6.52E+01	7.81E+01	3.24E+01
	RA-226	186.10	*	3.50	5.60E+01	5.60E+01	6.93E+02	2.77E+01
+	TH-227	50.13	*	8.00	2.41E+01	1.72E+01	2.78E+01	1.19E+01
		79.72		1.89	1.64E+02		4.14E+01	8.17E+01
		93.93	*	1.37	1.50E+02		5.34E+02	7.44E+01
		210.65	*	1.10	1.17E+02		1.86E+01	5.75E+01
		235.97	*	12.70	1.72E+01		5.67E+01	8.52E+00
		256.25	*	7.01	2.75E+01		1.46E+02	1.36E+01
		286.12	*	1.54	7.25E+01		-4.09E+01	3.55E+01
		300.00	*	2.67	4.86E+01		1.55E+02	2.38E+01
		304.51		1.23	1.76E+02		-7.12E+02	8.70E+01

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TH-227	329.85	*	2.69	4.93E+01	1.72E+01	4.76E+01	2.42E+01
		334.38	*	1.05	1.28E+02		2.10E+01	6.29E+01
	AC-228	99.50		1.28	1.56E+02	8.05E+00	-9.79E+02	7.74E+01
		129.07		2.45	8.20E+01		-3.64E+01	4.07E+01
		153.98		0.74	3.34E+02		9.23E+02	1.66E+02
		209.25		3.88	5.11E+01		-1.11E+01	2.53E+01
		270.24		3.43	9.91E+01		7.77E+02	4.92E+01
		327.90		3.06	7.67E+01		2.08E+02	3.79E+01
		332.37		0.40	5.51E+02		2.30E+02	2.72E+02
		338.32		11.25	1.78E+01		-3.68E+00	8.77E+00
		409.46		1.94	1.07E+02		-1.40E+02	5.26E+01
		463.01		4.44	3.75E+01		1.38E+01	1.84E+01
		508.96		0.47	4.18E+02		6.17E+02	2.05E+02
		562.50		0.87	1.91E+02		6.10E+01	9.33E+01
		755.32		1.00	1.68E+02		-2.90E+01	8.13E+01
		772.29		1.50	2.00E+02		-3.48E+02	9.85E+01
		782.14		0.50	4.15E+02		-1.89E+02	2.03E+02
		794.95		4.34	4.06E+01		-4.08E+01	1.97E+01
		830.49		0.55	4.36E+02		-2.70E+02	2.13E+02
		835.71		1.68	1.46E+02		-2.13E+01	7.14E+01
		840.38		0.94	2.04E+02		-1.41E+02	9.91E+01
		904.20		0.78	2.74E+02		9.69E+00	1.33E+02
		911.21		26.60	8.05E+00		3.76E+00	3.92E+00
		964.77		5.11	4.07E+01		2.51E+01	1.98E+01
		968.97		16.20	1.25E+01		5.20E+00	6.08E+00
		1247.08		0.50	3.69E+02		-1.97E+03	1.77E+02
		1459.14		0.80	2.99E+02		1.10E+02	1.44E+02
		1495.91		0.89	2.41E+02		-3.89E+01	1.16E+02
		1580.54		0.61	3.52E+02		9.51E+01	1.69E+02
		1588.21		3.27	6.95E+01		1.65E+01	3.34E+01
		1630.63		1.60	1.14E+02		-1.06E+01	5.42E+01
	TH-228	84.37	*	1.23	1.78E+02	1.78E+02	1.58E+03	8.85E+01
		215.99		0.26	6.88E+02		-1.83E+02	3.40E+02
	TH-229	75.09	*	0.61	2.94E+02	4.35E+01	-3.94E+02	1.46E+02
		86.35		3.90	7.56E+01		-1.86E+02	3.76E+01
		124.60		1.43	1.43E+02		-3.43E+01	7.09E+01
		136.99		1.18	1.75E+02		-4.92E+02	8.66E+01
		148.15		0.88	2.45E+02		-5.61E+02	1.21E+02
		154.34	*	0.77	2.82E+02		7.79E+02	1.40E+02
		156.41		1.19	2.10E+02		-6.13E+01	1.04E+02
		193.51		4.41	4.35E+01		-3.55E+02	2.16E+01
		204.69		0.60	3.46E+02		3.85E+02	1.71E+02
		210.85	*	2.77	4.63E+01		7.37E+00	2.28E+01
+	PA-231	283.69	*	1.70	5.78E+01	5.27E+01	-3.83E+02	2.82E+01
		300.07	*	2.46	5.27E+01		1.69E+02	2.59E+01
		302.65	*	2.20	6.00E+01		1.22E+02	2.95E+01
		330.06	*	1.40	9.47E+01		9.14E+01	4.64E+01
+	TH-231	81.23	*	0.89	2.69E+02	3.32E+01	8.55E+02	1.34E+02
		84.21	*	6.60	3.32E+01		2.94E+02	1.65E+01
		89.95		0.94	2.56E+02		-1.73E+03	1.27E+02
	TH-232	63.81	*	0.27	1.08E+03	1.08E+03	3.36E+03	5.39E+02
	U-232	57.78		0.20	1.14E+03	1.14E+03	-4.40E+03	5.65E+02
		129.08		0.07	2.92E+03		-1.30E+03	1.45E+03

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
+	PA-233	75.35	*	1.39	1.29E+02	4.34E+00	-1.73E+02	6.40E+01
		86.81		1.97	1.32E+02		-4.92E+02	6.57E+01
		103.97		0.87	1.89E+02		-3.70E+02	9.36E+01
		271.48	*	0.33	3.85E+02		3.47E+03	1.89E+02
		300.34	*	6.62	1.96E+01		6.27E+01	9.62E+00
		312.17		38.60	4.34E+00		-2.90E-01	2.14E+00
		340.81		4.47	4.48E+01		-6.53E+00	2.21E+01
		375.45		0.68	2.28E+02		7.92E+00	1.12E+02
		398.62		1.39	1.55E+02		-1.55E+02	7.63E+01
		415.76		1.75	1.00E+02		7.89E+00	4.91E+01
	U-233	42.44		0.09	2.35E+03	2.35E+03	-2.62E+03	1.16E+03
		54.70		0.02	1.25E+04		-9.83E+03	6.21E+03
		97.13		0.02	1.10E+04		-2.59E+04	5.48E+03
	PA-234	62.70		1.55	2.04E+02	1.12E+01	7.86E+02	1.01E+02
		99.86		3.19	6.16E+01		-3.39E+02	3.06E+01
		125.46		0.78	2.62E+02		-5.93E+01	1.30E+02
		131.30		18.00	1.12E+01		2.08E-01	5.57E+00
		140.50		0.81	2.63E+02		-4.44E+02	1.31E+02
		152.71		5.97	4.14E+01		7.79E+01	2.06E+01
		159.48		0.65	3.30E+02		-4.65E+02	1.64E+02
		170.85		0.50	3.91E+02		-3.11E+02	1.94E+02
		186.15		1.76	1.79E+02		1.37E+03	8.90E+01
		193.73		0.49	3.90E+02		-2.95E+03	1.93E+02
		200.97		0.90	2.16E+02		-7.00E+01	1.07E+02
		203.12		1.23	1.67E+02		1.21E+02	8.25E+01
		227.00		9.99	1.81E+01		2.25E+00	8.95E+00
		245.37		0.75	3.15E+02		-5.73E+02	1.56E+02
		249.22		2.47	7.10E+01		-5.06E+02	3.51E+01
		272.28		1.08	3.18E+02		2.56E+03	1.58E+02
		293.79		2.99	1.17E+02		7.47E+02	5.82E+01
		330.40		0.77	2.76E+02		-1.08E+01	1.36E+02
		369.50		2.47	6.13E+01		-1.03E+00	3.01E+01
		372.00		1.21	1.27E+02		1.55E+01	6.26E+01
		458.68		1.13	1.51E+02		6.33E+01	7.38E+01
		506.75		1.29	1.41E+02		6.95E+01	6.92E+01
		513.40		1.10	1.76E+02		2.09E+02	8.63E+01
		521.40		0.74	2.12E+02		-1.17E+02	1.04E+02
		565.20		1.03	1.59E+02		1.98E+01	7.75E+01
		569.32		11.80	1.35E+01		-2.28E+00	6.56E+00
		602.60		0.54	3.13E+02		-9.30E+03	1.53E+02
		663.90		0.54	3.69E+02		-1.38E+02	1.80E+02
		666.50		1.16	1.69E+02		1.89E+02	8.24E+01
		669.70		0.99	1.95E+02		-5.25E+01	9.52E+01
		692.60		1.24	1.24E+02		-3.77E+01	6.02E+01
		699.03		3.61	4.77E+01		-9.08E+00	2.32E+01
		705.90		2.27	8.38E+01		5.93E+01	4.09E+01
		730.90		0.63	2.57E+02		5.50E+01	1.25E+02
		733.39		6.90	2.32E+01		-9.55E+00	1.13E+01
		738.00		1.15	1.47E+02		-2.43E+01	7.12E+01
		742.81		2.06	8.82E+01		5.55E+01	4.29E+01
		755.00		1.22	1.35E+02		-2.61E+01	6.56E+01
		780.40		0.90	2.02E+02		-1.39E+02	9.81E+01
		786.27		1.19	1.80E+02		1.72E+02	8.77E+01

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	PA-234	794.90		1.34	1.31E+02	1.12E+01	-1.32E+02	6.38E+01
		796.10		2.58	6.81E+01		-8.19E+01	3.30E+01
		805.52		3.14	6.62E+01		6.49E+01	3.23E+01
		819.20		1.88	9.13E+01		-1.66E+01	4.42E+01
		824.65		3.12	5.89E+01		-8.29E+01	2.86E+01
		831.50		4.12	5.82E+01		-2.74E+01	2.84E+01
		876.00		2.52	7.17E+01		-3.30E+01	3.48E+01
		880.50		10.40	1.87E+01		-1.96E+00	9.10E+00
		883.24		9.58	2.21E+01		1.17E+01	1.08E+01
		898.67		3.24	6.42E+01		-3.98E+00	3.12E+01
		926.00		16.80	1.23E+01		-2.29E+01	5.96E+00
		946.18		15.00	1.28E+01		0.00E+00	6.18E+00
		980.48		5.15	3.51E+01		-7.97E+00	1.70E+01
		984.20		1.62	1.18E+02		3.71E+01	5.70E+01
		1028.70		0.57	3.01E+02		-4.56E+01	1.45E+02
		1083.20		0.50	4.02E+02		1.06E+02	1.94E+02
		1352.90		1.15	1.61E+02		2.66E+01	7.73E+01
		1393.90		2.06	9.02E+01		-1.74E+02	4.31E+01
		1668.40		0.76	2.55E+02		-3.72E+02	1.21E+02
		1693.80		0.69	2.55E+02		7.86E+00	1.21E+02
+	PA-234M	766.36		0.29	1.07E+03	1.85E+02	3.23E+03	5.25E+02
		811.00		0.51	3.89E+02		-2.94E+02	1.89E+02
		1001.03	*	0.84	1.85E+02		5.67E+02	8.87E+01
+	TH-234	63.29	*	4.84	6.04E+01	3.66E+01	1.88E+02	3.01E+01
		83.30	*	0.08	2.77E+03		2.46E+04	1.38E+03
		92.59	*	5.58	3.66E+01		4.29E+02	1.82E+01
		112.81		0.28	6.56E+02		1.13E+03	3.25E+02
	U-234	53.20		0.12	1.80E+03	1.80E+03	-4.47E+02	8.93E+02
		120.90		0.03	6.00E+03		-2.99E+03	2.98E+03
+	U-235	109.16		1.54	1.09E+02	3.42E+00	-5.09E+01	5.40E+01
		143.76	*	10.96	1.64E+01		9.25E+01	8.14E+00
		163.36		5.08	4.21E+01		5.22E+00	2.09E+01
		185.71	*	57.20	3.42E+00		4.24E+01	1.70E+00
		194.94		0.63	3.04E+02		-6.92E+02	1.50E+02
		202.11		1.08	1.84E+02		4.65E+01	9.13E+01
		205.31		5.01	4.12E+01		4.10E+01	2.04E+01
	NP-237	57.10		0.39	5.81E+02	2.38E+01	-2.92E+03	2.88E+02
		86.48		12.40	2.38E+01		-5.84E+01	1.18E+01
		94.64		0.60	5.26E+02		3.90E+03	2.62E+02
		143.25		0.43	5.99E+02		-2.34E+02	2.98E+02
	NP-239	106.12		27.20	7.03E+07	7.03E+07	-9.89E+07	3.48E+07
		209.75		3.42	6.69E+08		-2.09E+08	3.31E+08
		228.18		10.76	1.97E+08		-5.68E+08	9.74E+07
		277.60		14.38	1.41E+08		-3.23E+08	6.95E+07
		334.31		2.07	1.09E+09		-1.18E+09	5.36E+08
	AM-241	59.54		35.90	6.47E+00	6.47E+00	-1.32E+01	3.21E+00
	CM-241	132.41		3.90	1.68E+02	7.02E+00	1.92E+01	8.33E+01
		165.01		3.40	2.01E+02		9.66E+01	9.99E+01
		205.88		2.67	2.47E+02		2.09E+02	1.23E+02
		430.63		4.06	1.59E+02		-5.31E+01	7.84E+01
		463.27		1.23	4.36E+02		1.60E+02	2.13E+02
		471.80		71.30	7.02E+00		-1.01E+00	3.43E+00
		636.88		1.53	3.21E+02		1.06E+02	1.56E+02

Analysis Report for 590214R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
AM-243	74.66	*	68.20	2.63E+00	2.63E+00	-3.53E+00	1.31E+00

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

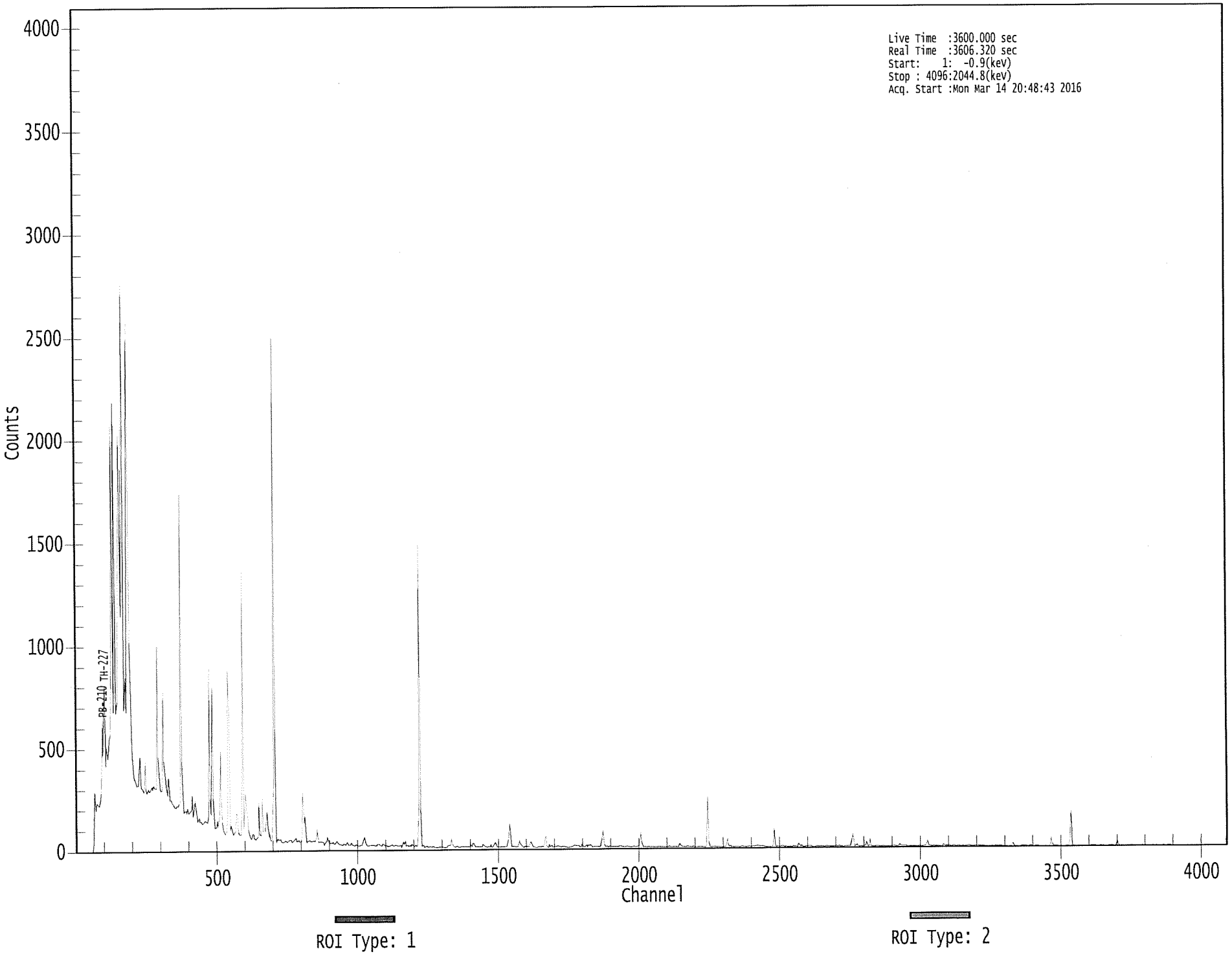
No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

0000007059.CNF



011784

Apex™

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 591000R2
Sample Description	: Tetra Tech TO# 160115-1
Sample Type	: Soil
Sample Size	: 2.522E+02 grams
Facility	: Default
Sample Taken On	: 1/19/2016 2:15:00PM
Acquisition Started	: 3/14/2016 10:01:15PM
Procedure	: Raised 300g can soil
Operator	: Administrator
Detector Name	: DET01
Geometry	: Raised 300gm Can Soil
Live Time	: 3600.0 seconds
Real Time	: 3622.8 seconds
Dead Time	: 0.63 %
Peak Locate Threshold	: 4.30
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 1 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/30/2015
Efficiency Calibration Used Done On	: 12/20/2005
Efficiency Calibration Description	:
Sample Number	: 7061

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

ENERGY CALIBRATION REPORT

Detector Name : DET01

ENERGY CALIBRATION COEFFICIENTS

Energy Calibrate Performed on : 11/30/2015 7:51:04PM
by : Administrator
Energy Calibrate Type : POLY

Energy (keV) = -1.445 + 0.500*ch + -1.06E-07*ch^2 + 0.00E+00*ch^3

SHAPE CALIBRATION COEFFICIENTS

Shape Calibrate Performed on : 11/30/2015 7:51:04PM
by : Administrator

FWHM = 0.610 + 3.62E-02 *E^1/2

LOW TAIL = 0.00E+00 + 0.00E+00*E

ENERGY CALIBRATION RESULTS TABLE

Centroid Channel	Centroid error	Energy (keV)
121.97	0.13	59.54
1326.58	0.01	661.66
2669.40	0.03	1332.50

SHAPE CALIBRATION RESULTS TABLE

Energy (keV)	FWHM channels	FWHM error	TAIL channels	TAIL error
59.54	2.12	0.24	0.00	0.00
661.66	3.08	0.02	0.00	0.00
1332.50	3.90	0.06	0.00	0.00

EFFICIENCY CALIBRATION REPORT

Detector Name : DET01
Geometry Description : Raised 300gm Can Soil
Efficiency Calibration Performed on : 12/20/2005 11:10:05AM
by : Administrator
Efficiency Type Used : EMPIRICAL

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

Efficiency Triplets

Energy	*% Efficiency*	*Error*	*Computed*	*Error*	*% Difference*
59.50	6.77E-01	2.04E-02			
88.00	6.93E-01	2.10E-02			
122.10	7.30E-01	2.28E-02			
165.90	6.33E-01	3.05E-02			
391.70	3.38E-01	1.74E-02			
661.70	2.30E-01	6.91E-03			
898.00	1.91E-01	8.56E-03			
1173.20	1.46E-01	4.40E-03			
1332.50	1.33E-01	3.99E-03			
1836.00	1.03E-01	3.36E-03			

DUAL Efficiency Calibration Equation

Single Equation Terms

Offset :	-3.20E+01
Slope :	1.70E+01
Quadratic :	-3.77E+00
Cubic :	3.53E-01
4th Order :	-1.23E-02
5th Order :	0.00E+00
6th Order :	0.00E+00
7th Order :	0.00E+00
8th Order :	0.00E+00
9th Order :	0.00E+00

EMPIRICAL Efficiency Calibration Equation

Empirical Equation Terms

Scaling :	9.48E+02
Offset :	-6.35E+00
Slope :	8.02E-01
Quadratic :	2.35E-02
Cubic :	-1.58E-02
4th Order :	-1.23E-02
5th Order :	0.00E+00

LINEAR Efficiency Calibration Equation

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

Linear Equation Terms

Offset :	-1.79E-04
Slope :	-2.75E+00
Quadratic :	1.74E+02
Cubic :	-1.42E+04
4th Order :	2.49E+05
5th Order :	6.29E+06
6th Order :	0.00E+00
7th Order :	0.00E+00
8th Order :	0.00E+00
9th Order :	0.00E+00

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

PEAK LOCATE REPORT

Peak Locate Performed on : 3/30/2016 2:09:26PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 4.30

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	36.36	75.61	0.3272	4.75
2	46.64	96.17	0.2526	12.94
3	50.07	103.04	0.4282	4.79
4	67.76	138.42	0.1366	30.93
5	74.89	152.60	0.1573	24.27
6	77.17	157.36	0.1321	36.75
7	81.14	165.32	0.2128	15.10
8	83.90	170.58	0.1647	21.40
9	87.32	177.50	0.2001	12.51
10	89.93	182.85	0.3209	7.92
11	94.73	192.36	0.2590	7.27
12	144.10	291.11	0.1783	18.37
13	154.27	311.46	0.2024	13.16
14	186.28	375.49	0.1297	30.55
15	236.12	475.18	0.1481	24.52
16	242.14	487.22	0.1038	49.01
17	256.34	515.60	0.1910	15.41
18	259.04	521.20	0.2975	6.83
19	269.61	541.95	0.1705	22.25
20	271.37	545.91	0.2038	17.33
21	283.75	570.46	0.3476	4.47
22	295.37	593.69	0.0820	76.07
23	300.19	603.39	0.2023	13.26
24	302.92	608.53	0.2846	6.59

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
25	324.02	651.03	0.2141	11.21
26	330.06	663.10	0.2255	9.92
27	338.52	680.03	0.2522	7.28
28	352.07	707.14	0.0656	109.62
29	389.22	781.46	0.3262	5.08
30	401.99	806.99	0.1692	16.86
31	405.15	813.24	0.2138	11.31
32	427.30	857.65	0.3045	4.93
33	445.09	893.23	0.3148	4.33
34	480.61	964.31	0.2647	7.17
35	487.34	977.78	0.2794	6.09
36	511.23	1025.57	0.2638	5.12
37	580.67	1164.53	0.2634	5.39
38	609.60	1222.41	0.0639	98.70
39	665.81	1334.89	0.1674	15.69
40	703.39	1410.09	0.2742	5.49
41	720.18	1443.69	0.2672	5.60
42	768.78	1540.95	0.1194	29.51
43	786.26	1575.93	0.1969	10.85
44	806.60	1616.64	0.1694	13.60
45	821.40	1646.26	0.3100	4.72
46	832.42	1668.33	0.2283	7.54
47	839.47	1682.43	0.2351	7.12
48	934.59	1872.81	0.1340	21.27
49	964.64	1932.95	0.3015	4.72
50	1120.86	2245.68	0.0876	46.11
51	1155.83	2315.70	0.1606	14.31
52	1208.29	2420.72	0.2257	7.30
53	1238.71	2481.62	0.1111	27.26
54	1281.66	2567.60	0.1705	11.08
55	1378.31	2761.15	0.1214	23.19
56	1385.93	2776.53	0.2056	7.66
57	1402.11	2808.88	0.1693	11.78
58	1408.73	2822.07	0.1422	16.03
59	1509.89	3024.61	0.1466	15.39
60	1539.33	3083.58	0.2572	5.12
61	1544.02	3093.06	0.2720	5.32
62	1583.70	3172.42	0.2180	6.98
63	1662.03	3329.30	0.1932	7.89
64	1730.29	3466.01	0.1350	16.83
65	1765.21	3535.96	0.0881	38.61
66	1848.12	3702.04	0.1466	13.81

? = Adjacent peak noted
Errors quoted at 1.000 sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 3/30/2016 2:09:26PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	36.36	72 -	80	75.61	9.34E+02	105.92	7.09E+03	1.33
	2	46.64	89 -	99	96.17	2.07E+03	124.07	8.60E+03	1.02
	3	50.07	100 -	106	103.04	-6.52E+02	91.60	6.70E+03	0.50
	4	67.76	131 -	142	138.42	8.07E+03	189.64	1.74E+04	1.10
M	5	74.89	145 -	187	152.69	2.78E+03	106.55	1.26E+04	0.84
m	6	77.17	145 -	187	157.24	5.52E+03	207.47	1.21E+04	0.85
m	7	81.14	145 -	187	165.18	8.34E+02	38.61	1.10E+04	0.85
m	8	83.90	145 -	187	170.69	2.52E+03	96.92	1.02E+04	0.86
m	9	87.32	145 -	187	177.54	1.66E+03	66.04	1.10E+04	0.87
m	10	89.93	145 -	187	182.76	3.35E+02	25.26	8.69E+03	0.87
	11	94.73	187 -	197	192.36	-1.19E+03	151.44	1.56E+04	1.08
	12	144.10	285 -	297	291.11	3.70E+03	170.50	1.54E+04	1.24
	13	154.27	306 -	316	311.46	2.29E+03	148.80	1.28E+04	1.20
	14	186.28	366 -	380	375.49	7.52E+03	178.78	1.40E+04	1.26
	15	236.12	470 -	482	475.18	-2.84E+03	146.30	1.47E+04	0.91
	16	242.14	483 -	495	487.22	7.88E+03	156.01	9.98E+03	1.18
M	17	256.34	507 -	527	515.64	1.94E+03	69.94	4.59E+03	1.28
m	18	259.04	507 -	527	521.04	7.12E+02	54.03	3.93E+03	1.29
M	19	269.61	538 -	550	542.17	3.44E+03	77.30	3.79E+03	1.18
m	20	271.37	538 -	550	545.70	2.89E+03	72.80	3.84E+03	1.18
	21	283.75	563 -	585	570.46	-2.55E+04	226.24	3.57E+04	0.50
M	22	295.37	586 -	618	593.70	2.37E+04	162.75	3.14E+03	1.22
m	23	300.19	586 -	618	603.35	1.08E+03	52.83	3.29E+03	1.23
m	24	302.92	586 -	618	608.82	6.50E+02	47.23	2.79E+03	1.23
	25	324.02	646 -	655	651.03	4.19E+02	75.72	3.54E+03	1.18
	26	330.06	658 -	668	663.10	2.32E+02	79.52	3.93E+03	1.08
	27	338.52	675 -	683	680.03	3.92E+02	67.32	2.86E+03	1.43
	28	352.07	698 -	714	707.14	4.24E+04	225.85	4.66E+03	1.36
	29	389.22	773 -	784	781.46	5.15E+02	71.34	2.86E+03	1.01
M	30	401.99	804 -	820	807.01	1.24E+03	50.89	1.73E+03	1.25
m	31	405.15	804 -	820	813.33	8.42E+02	45.60	2.27E+03	1.25
	32	427.30	854 -	865	857.65	3.53E+02	67.86	2.66E+03	1.47
	33	445.09	890 -	897	893.23	1.73E+02	45.28	1.34E+03	1.45
	34	480.61	960 -	969	964.31	7.45E+01	48.99	1.55E+03	1.26
	35	487.34	971 -	985	977.78	2.15E+02	62.62	2.12E+03	1.51
	36	511.23	1014 -	1034	1025.57	1.02E+03	76.03	2.32E+03	2.61
	37	580.67	1160 -	1173	1164.53	2.52E+02	50.86	1.37E+03	1.79
	38	609.60	1217 -	1229	1222.41	3.22E+04	184.84	1.17E+03	1.53
	39	665.81	1331 -	1344	1334.89	9.81E+02	50.53	9.25E+02	1.58
	40	703.39	1405 -	1417	1410.09	2.83E+02	42.57	9.27E+02	1.77
	41	720.18	1438 -	1448	1443.69	2.18E+02	35.99	6.95E+02	1.60
	42	768.78	1532 -	1551	1540.95	3.05E+03	74.26	1.23E+03	1.66
	43	786.26	1566 -	1586	1575.93	5.68E+02	55.71	1.24E+03	1.61
	44	806.60	1608 -	1621	1616.64	6.80E+02	46.76	8.86E+02	1.57
	45	821.40	1643 -	1649	1646.26	4.88E+01	26.04	4.66E+02	1.25
	46	832.42	1663 -	1675	1668.33	1.24E+02	43.01	1.05E+03	1.25
	47	839.47	1677 -	1689	1682.43	2.57E+01	41.46	1.03E+03	1.23
	48	934.59	1868 -	1877	1872.81	1.61E+03	49.81	5.82E+02	1.63
	49	964.64	1925 -	1937	1932.95	1.56E+02	36.03	6.92E+02	1.49
	50	1120.86	2238 -	2254	2245.68	6.76E+03	89.07	6.34E+02	1.81
	51	1155.83	2307 -	2327	2315.70	7.48E+02	48.38	7.77E+02	1.34
	52	1208.29	2413 -	2427	2420.72	1.82E+02	31.16	4.51E+02	1.45
	53	1238.71	2473 -	2489	2481.62	2.50E+03	58.57	5.02E+02	1.89

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	54	1281.66	2559 -	2576	2567.60	5.47E+02	38.94	5.10E+02	2.20
M	55	1378.31	2752 -	2785	2761.13	1.61E+03	43.43	3.05E+02	1.86
m	56	1385.93	2752 -	2785	2776.39	2.84E+02	21.41	3.17E+02	1.87
M	57	1402.11	2802 -	2831	2808.78	5.12E+02	27.25	3.17E+02	1.92
m	58	1408.73	2802 -	2831	2822.04	9.10E+02	34.47	3.31E+02	1.93
	59	1509.89	3018 -	3030	3024.61	7.86E+02	38.02	4.00E+02	1.87
M	60	1539.33	3078 -	3099	3083.57	1.56E+02	19.31	3.23E+02	1.66
m	61	1544.02	3078 -	3099	3092.96	1.00E+02	16.60	3.06E+02	1.67
	62	1583.70	3168 -	3179	3172.42	2.28E+02	24.42	2.30E+02	1.54
	63	1662.03	3315 -	3336	3329.30	3.21E+02	27.65	2.11E+02	2.03
	64	1730.29	3457 -	3473	3466.01	8.95E+02	33.81	1.34E+02	2.17
	65	1765.21	3527 -	3544	3535.96	4.90E+03	71.75	1.31E+02	2.18
	66	1848.12	3692 -	3709	3702.04	5.44E+02	30.39	2.00E+02	2.14

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 3/30/2016 2:09:26PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	36.36	72 -	80	9.34E+02	105.92	7.09E+03	1.67E+02
	2	46.64	89 -	99	2.07E+03	124.07	8.60E+03	1.90E+02
	3	50.07	100 -	106	-6.52E+02	91.60	6.70E+03	1.56E+02
	4	67.76	131 -	142	8.07E+03	189.64	1.74E+04	2.75E+02
M	5	74.89	145 -	187	2.78E+03	106.55	1.26E+04	2.61E+02
m	6	77.17	145 -	187	5.52E+03	207.47	1.21E+04	2.55E+02
m	7	81.14	145 -	187	8.34E+02	38.61	1.10E+04	2.44E+02
m	8	83.90	145 -	187	2.52E+03	96.92	1.02E+04	2.35E+02
m	9	87.32	145 -	187	1.66E+03	66.04	1.10E+04	2.44E+02
m	10	89.93	145 -	187	3.35E+02	25.26	8.69E+03	2.17E+02
	11	94.73	187 -	197	-1.19E+03	151.44	1.56E+04	2.56E+02
	12	144.10	285 -	297	3.70E+03	170.50	1.54E+04	2.62E+02
	13	154.27	306 -	316	2.29E+03	148.80	1.28E+04	2.32E+02
	14	186.28	366 -	380	7.52E+03	178.78	1.40E+04	2.57E+02
	15	236.12	470 -	482	-2.84E+03	146.30	1.47E+04	2.56E+02
	16	242.14	483 -	495	7.88E+03	156.01	9.98E+03	2.11E+02
M	17	256.34	507 -	527	1.94E+03	69.94	4.59E+03	1.58E+02
m	18	259.04	507 -	527	7.12E+02	54.03	3.93E+03	1.46E+02
M	19	269.61	538 -	550	3.44E+03	77.30	3.79E+03	1.43E+02

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
m	20	271.37	538 -	550	2.89E+03	72.80	3.84E+03	1.44E+02
	21	283.75	563 -	585	-2.55E+04	226.24	3.57E+04	4.56E+02
M	22	295.37	586 -	618	2.37E+04	162.75	3.14E+03	1.30E+02
m	23	300.19	586 -	618	1.08E+03	52.83	3.29E+03	1.33E+02
m	24	302.92	586 -	618	6.50E+02	47.23	2.79E+03	1.23E+02
	25	324.02	646 -	655	4.19E+02	75.72	3.54E+03	1.20E+02
	26	330.06	658 -	668	2.32E+02	79.52	3.93E+03	1.28E+02
	27	338.52	675 -	683	3.92E+02	67.32	2.86E+03	1.06E+02
	28	352.07	698 -	714	4.24E+04	225.85	4.66E+03	1.53E+02
	29	389.22	773 -	784	5.15E+02	71.34	2.86E+03	1.11E+02
M	30	401.99	804 -	820	1.24E+03	50.89	1.73E+03	9.67E+01
m	31	405.15	804 -	820	8.42E+02	45.60	2.27E+03	1.11E+02
	32	427.30	854 -	865	3.53E+02	67.86	2.66E+03	1.07E+02
	33	445.09	890 -	897	1.73E+02	45.28	1.34E+03	7.13E+01
	34	480.61	960 -	969	7.45E+01	48.99	1.55E+03	7.93E+01
	35	487.34	971 -	985	2.15E+02	62.62	2.12E+03	1.00E+02
	36	511.23	1014 -	1034	1.02E+03	76.03	2.32E+03	1.13E+02
	37	580.67	1160 -	1173	2.52E+02	50.86	1.37E+03	7.95E+01
	38	609.60	1217 -	1229	3.22E+04	184.84	1.17E+03	7.23E+01
	39	665.81	1331 -	1344	9.81E+02	50.53	9.25E+02	6.52E+01
	40	703.39	1405 -	1417	2.83E+02	42.57	9.27E+02	6.43E+01
	41	720.18	1438 -	1448	2.18E+02	35.99	6.95E+02	5.40E+01
	42	768.78	1532 -	1551	3.05E+03	74.26	1.23E+03	8.16E+01
	43	786.26	1566 -	1586	5.68E+02	55.71	1.24E+03	8.28E+01
	44	806.60	1608 -	1621	6.80E+02	46.76	8.86E+02	6.38E+01
	45	821.40	1643 -	1649	4.88E+01	26.04	4.66E+02	4.13E+01
	46	832.42	1663 -	1675	1.24E+02	43.01	1.05E+03	6.83E+01
	47	839.47	1677 -	1689	2.57E+01	41.46	1.03E+03	6.77E+01
	48	934.59	1868 -	1877	1.61E+03	49.81	5.82E+02	4.86E+01
	49	964.64	1925 -	1937	1.56E+02	36.03	6.92E+02	5.56E+01
	50	1120.86	2238 -	2254	6.76E+03	89.07	6.34E+02	5.63E+01
	51	1155.83	2307 -	2327	7.48E+02	48.38	7.77E+02	6.57E+01
	52	1208.29	2413 -	2427	1.82E+02	31.16	4.51E+02	4.62E+01
	53	1238.71	2473 -	2489	2.50E+03	58.57	5.02E+02	5.01E+01
	54	1281.66	2559 -	2576	5.47E+02	38.94	5.10E+02	5.12E+01
M	55	1378.31	2752 -	2785	1.61E+03	43.43	3.05E+02	4.06E+01
m	56	1385.93	2752 -	2785	2.84E+02	21.41	3.17E+02	4.14E+01
M	57	1402.11	2802 -	2831	5.12E+02	27.25	3.17E+02	4.14E+01
m	58	1408.73	2802 -	2831	9.10E+02	34.47	3.31E+02	4.23E+01
	59	1509.89	3018 -	3030	7.86E+02	38.02	4.00E+02	4.22E+01
M	60	1539.33	3078 -	3099	1.56E+02	19.31	3.23E+02	4.18E+01
m	61	1544.02	3078 -	3099	1.00E+02	16.60	3.06E+02	4.07E+01
	62	1583.70	3168 -	3179	2.28E+02	24.42	2.30E+02	3.16E+01
	63	1662.03	3315 -	3336	3.21E+02	27.65	2.11E+02	3.46E+01
	64	1730.29	3457 -	3473	8.95E+02	33.81	1.34E+02	2.59E+01
	65	1765.21	3527 -	3544	4.90E+03	71.75	1.31E+02	2.59E+01
	66	1848.12	3692 -	3709	5.44E+02	30.39	2.00E+02	3.21E+01

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 3/30/2016 2:09:26PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB
Peak Match Tolerance : 1.000 keV

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	36.36	72 -	80	75.61	9.34E+02	105.92	7.09E+03	I-125
	2	46.64	89 -	99	96.17	2.07E+03	124.07	8.60E+03	PB-210
	3	50.07	100 -	106	103.04	-6.52E+02	91.60	6.70E+03	TH-227
	4	67.76	131 -	142	138.42	8.07E+03	189.64	1.74E+04	CS-136
M	5	74.89	145 -	187	152.69	2.78E+03	106.55	1.26E+04	TH-229 AM-243 PA-233
m	6	77.17	145 -	187	157.24	5.52E+03	207.47	1.21E+04	.....
m	7	81.14	145 -	187	165.18	8.34E+02	38.61	1.10E+04	TH-231 BA-133
m	8	83.90	145 -	187	170.69	2.52E+03	96.92	1.02E+04	TH-231 TH-228 TH-234
m	9	87.32	145 -	187	177.54	1.66E+03	66.04	1.10E+04	PA-233 CD-109 EU-155 NP-237 CS-136 TH-229
m	10	89.93	145 -	187	182.76	3.35E+02	25.26	8.69E+03	TH-231
	11	94.73	187 -	197	192.36	-1.19E+03	151.44	1.56E+04	NP-237 TH-227
	12	144.10	285 -	297	291.11	3.70E+03	170.50	1.54E+04	RA-223 U-235 NP-237
	13	154.27	306 -	316	311.46	2.29E+03	148.80	1.28E+04	TH-229 RA-223 AC-228
	14	186.28	366 -	380	375.49	7.52E+03	178.78	1.40E+04	PA-234 RA-226 U-235
	15	236.12	470 -	482	475.18	-2.84E+03	146.30	1.47E+04	TH-227 NB-95m
	16	242.14	483 -	495	487.22	7.88E+03	156.01	9.98E+03	PB-214
M	17	256.34	507 -	527	515.64	1.94E+03	69.94	4.59E+03	TH-227

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
m	18	259.04	507 -	527	521.04	7.12E+02	54.03	3.93E+03	PB-214
M	19	269.61	538 -	550	542.17	3.44E+03	77.30	3.79E+03	RA-223
									AC-228
m	20	271.37	538 -	550	545.70	2.89E+03	72.80	3.84E+03	PA-233
									RN-219
									PA-234
	21	283.75	563 -	585	570.46	-2.55E+04	226.24	3.57E+04	PA-231
									I-131
M	22	295.37	586 -	618	593.70	2.37E+04	162.75	3.14E+03	PB-214
									EU-152
									IR-192
m	23	300.19	586 -	618	603.35	1.08E+03	52.83	3.29E+03	PB-212
									PA-231
									PA-233
									TH-227
m	24	302.92	586 -	618	608.82	6.50E+02	47.23	2.79E+03	BA-133
									PA-231
	25	324.02	646 -	655	651.03	4.19E+02	75.72	3.54E+03	RA-223
	26	330.06	658 -	668	663.10	2.32E+02	79.52	3.93E+03	PA-231
									TH-227
									PA-234
	27	338.52	675 -	683	680.03	3.92E+02	67.32	2.86E+03	AC-228
									RA-223
	28	352.07	698 -	714	707.14	4.24E+04	225.85	4.66E+03	PB-214
	29	389.22	773 -	784	781.46	5.15E+02	71.34	2.86E+03	I-126
M	30	401.99	804 -	820	807.01	1.24E+03	50.89	1.73E+03	RN-219
									KR-87
m	31	405.15	804 -	820	813.33	8.42E+02	45.60	2.27E+03	PB-211
									I-134
	32	427.30	854 -	865	857.65	3.53E+02	67.86	2.66E+03	PB-211
									SB-125
	33	445.09	890 -	897	893.23	1.73E+02	45.28	1.34E+03	EU-154
	34	480.61	960 -	969	964.31	7.45E+01	48.99	1.55E+03	.....
	35	487.34	971 -	985	977.78	2.15E+02	62.62	2.12E+03	LA-140
	36	511.23	1014 -	1034	1025.57	1.02E+03	76.03	2.32E+03	TL-208
	37	580.67	1160 -	1173	1164.53	2.52E+02	50.86	1.37E+03	.....
	38	609.60	1217 -	1229	1222.41	3.22E+04	184.84	1.17E+03	BI-214
									RU-103
	39	665.81	1331 -	1344	1334.89	9.81E+02	50.53	9.25E+02	BI-214
									SB-126
									PA-234
	40	703.39	1405 -	1417	1410.09	2.83E+02	42.57	9.27E+02	NB-94x
	41	720.18	1438 -	1448	1443.69	2.18E+02	35.99	6.95E+02	SB-126
	42	768.78	1532 -	1551	1540.95	3.05E+03	74.26	1.23E+03	BI-214
	43	786.26	1566 -	1586	1575.93	5.68E+02	55.71	1.24E+03	PA-234
									PB-214
									BI-212
									CS-135
	44	806.60	1608 -	1621	1616.64	6.80E+02	46.76	8.86E+02	BI-214
	45	821.40	1643 -	1649	1646.26	4.88E+01	26.04	4.66E+02	.....
	46	832.42	1663 -	1675	1668.33	1.24E+02	43.01	1.05E+03	PB-211
									PA-234
	47	839.47	1677 -	1689	1682.43	2.57E+01	41.46	1.03E+03	PB-214
									AC-228

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	48	934.59	1868 -	1877	1872.81	1.61E+03	49.81	5.82E+02	BI-214
	49	964.64	1925 -	1937	1932.95	1.56E+02	36.03	6.92E+02	AC-228
									EU-152
	50	1120.86	2238 -	2254	2245.68	6.76E+03	89.07	6.34E+02	BI-214
	51	1155.83	2307 -	2327	2315.70	7.48E+02	48.38	7.77E+02	BI-214
	52	1208.29	2413 -	2427	2420.72	1.82E+02	31.16	4.51E+02	BI-214
	53	1238.71	2473 -	2489	2481.62	2.50E+03	58.57	5.02E+02	CO-56
									BI-214
	54	1281.66	2559 -	2576	2567.60	5.47E+02	38.94	5.10E+02	BI-214
M	55	1378.31	2752 -	2785	2761.13	1.61E+03	43.43	3.05E+02	BI-214
m	56	1385.93	2752 -	2785	2776.39	2.84E+02	21.41	3.17E+02	BI-214
M	57	1402.11	2802 -	2831	2808.78	5.12E+02	27.25	3.17E+02	BI-214
m	58	1408.73	2802 -	2831	2822.04	9.10E+02	34.47	3.31E+02	EU-152
									BI-214
	59	1509.89	3018 -	3030	3024.61	7.86E+02	38.02	4.00E+02	I-124
									BI-214
M	60	1539.33	3078 -	3099	3083.57	1.56E+02	19.31	3.23E+02	.....
m	61	1544.02	3078 -	3099	3092.96	1.00E+02	16.60	3.06E+02	.....
	62	1583.70	3168 -	3179	3172.42	2.28E+02	24.42	2.30E+02	BI-214
	63	1662.03	3315 -	3336	3329.30	3.21E+02	27.65	2.11E+02	BI-214
	64	1730.29	3457 -	3473	3466.01	8.95E+02	33.81	1.34E+02	BI-214
	65	1765.21	3527 -	3544	3535.96	4.90E+03	71.75	1.31E+02	BI-214
	66	1848.12	3692 -	3709	3702.04	5.44E+02	30.39	2.00E+02	BI-214

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 3/30/2016 2:09:26PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	36.36	9.34E+02	105.92	4.40E-03	2.28E-04
	2	46.64	2.07E+03	124.07	5.69E-03	2.28E-04
	3	50.07	-6.52E+02	91.60	6.01E-03	2.28E-04
	4	67.76	8.07E+03	189.64	7.01E-03	2.88E-04
M	5	74.89	2.78E+03	106.55	7.19E-03	3.39E-04
m	6	77.17	5.52E+03	207.47	7.23E-03	3.56E-04
m	7	81.14	8.34E+02	38.61	7.27E-03	3.84E-04
m	8	83.90	2.52E+03	96.92	7.29E-03	4.04E-04
m	9	87.32	1.66E+03	66.04	7.31E-03	4.29E-04
m	10	89.93	3.35E+02	25.26	7.31E-03	4.32E-04
	11	94.73	-1.19E+03	151.44	7.29E-03	4.25E-04
	12	144.10	3.70E+03	170.50	6.61E-03	3.59E-04

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	13	154.27	2.29E+03	148.80	6.42E-03	3.44E-04
	14	186.28	7.52E+03	178.78	5.86E-03	3.19E-04
	15	236.12	-2.84E+03	146.30	5.09E-03	2.99E-04
	16	242.14	7.88E+03	156.01	5.00E-03	2.97E-04
M	17	256.34	1.94E+03	69.94	4.82E-03	2.91E-04
m	18	259.04	7.12E+02	54.03	4.78E-03	2.90E-04
M	19	269.61	3.44E+03	77.30	4.66E-03	2.86E-04
m	20	271.37	2.89E+03	72.80	4.63E-03	2.85E-04
	21	283.75	-2.55E+04	226.24	4.49E-03	2.80E-04
M	22	295.37	2.37E+04	162.75	4.37E-03	2.75E-04
m	23	300.19	1.08E+03	52.83	4.32E-03	2.74E-04
m	24	302.92	6.50E+02	47.23	4.29E-03	2.72E-04
	25	324.02	4.19E+02	75.72	4.08E-03	2.64E-04
	26	330.06	2.32E+02	79.52	4.03E-03	2.62E-04
	27	338.52	3.92E+02	67.32	3.95E-03	2.58E-04
	28	352.07	4.24E+04	225.85	3.84E-03	2.53E-04
	29	389.22	5.15E+02	71.34	3.55E-03	2.38E-04
M	30	401.99	1.24E+03	50.89	3.47E-03	2.31E-04
m	31	405.15	8.42E+02	45.60	3.45E-03	2.29E-04
	32	427.30	3.53E+02	67.86	3.31E-03	2.15E-04
	33	445.09	1.73E+02	45.28	3.20E-03	2.05E-04
	34	480.61	7.45E+01	48.99	3.01E-03	1.83E-04
	35	487.34	2.15E+02	62.62	2.98E-03	1.79E-04
	36	511.23	1.02E+03	76.03	2.87E-03	1.65E-04
	37	580.67	2.52E+02	50.86	2.59E-03	1.23E-04
	38	609.60	3.22E+04	184.84	2.49E-03	1.05E-04
	39	665.81	9.81E+02	50.53	2.32E-03	7.49E-05
	40	703.39	2.83E+02	42.57	2.22E-03	8.30E-05
	41	720.18	2.18E+02	35.99	2.17E-03	8.66E-05
	42	768.78	3.05E+03	74.26	2.06E-03	9.70E-05
	43	786.26	5.68E+02	55.71	2.02E-03	1.01E-04
	44	806.60	6.80E+02	46.76	1.98E-03	1.05E-04
	45	821.40	4.88E+01	26.04	1.95E-03	1.08E-04
	46	832.42	1.24E+02	43.01	1.93E-03	1.11E-04
	47	839.47	2.57E+01	41.46	1.92E-03	1.12E-04
	48	934.59	1.61E+03	49.81	1.76E-03	1.14E-04
	49	964.64	1.56E+02	36.03	1.72E-03	1.05E-04
	50	1120.86	6.76E+03	89.07	1.52E-03	5.96E-05
	51	1155.83	7.48E+02	48.38	1.49E-03	4.94E-05
	52	1208.29	1.82E+02	31.16	1.44E-03	4.33E-05
	53	1238.71	2.50E+03	58.57	1.41E-03	4.25E-05
	54	1281.66	5.47E+02	38.94	1.37E-03	4.13E-05
M	55	1378.31	1.61E+03	43.43	1.29E-03	3.94E-05
m	56	1385.93	2.84E+02	21.41	1.29E-03	3.93E-05
M	57	1402.11	5.12E+02	27.25	1.28E-03	3.91E-05
m	58	1408.73	9.10E+02	34.47	1.27E-03	3.90E-05
	59	1509.89	7.86E+02	38.02	1.21E-03	3.78E-05
M	60	1539.33	1.56E+02	19.31	1.19E-03	3.74E-05
m	61	1544.02	1.00E+02	16.60	1.19E-03	3.74E-05
	62	1583.70	2.28E+02	24.42	1.16E-03	3.69E-05
	63	1662.03	3.21E+02	27.65	1.12E-03	3.59E-05
	64	1730.29	8.95E+02	33.81	1.09E-03	3.51E-05
	65	1765.21	4.90E+03	71.75	1.07E-03	3.47E-05

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
66	1848.12	5.44E+02	30.39	1.03E-03	3.38E-05

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 3/30/2016 2:09:26PM

Env. Background File : \\NHHJ-6\ApexRoot\Default\Data\0000006791.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	36.36	9.34E+02	105.92			9.34E+02	1.06E+02
	2	46.64	2.07E+03	124.07	2.73E+01	2.86E+00	2.04E+03	1.24E+02
	3	50.07	-6.52E+02	91.60			-6.52E+02	9.16E+01
	4	67.76	8.07E+03	189.64			8.07E+03	1.90E+02
M	5	74.89	2.78E+03	106.55			2.78E+03	1.07E+02
m	6	77.17	5.52E+03	207.47			5.52E+03	2.07E+02
m	7	81.14	8.34E+02	38.61			8.34E+02	3.86E+01
m	8	83.90	2.52E+03	96.92			2.52E+03	9.69E+01
m	9	87.32	1.66E+03	66.04			1.66E+03	6.60E+01
m	10	89.93	3.35E+02	25.26			3.35E+02	2.53E+01
	11	94.73	-1.19E+03	151.44			-1.19E+03	1.51E+02
	12	144.10	3.70E+03	170.50			3.70E+03	1.71E+02
	13	154.27	2.29E+03	148.80			2.29E+03	1.49E+02
	14	186.28	7.52E+03	178.78	2.96E+01	3.21E+00	7.49E+03	1.79E+02
	15	236.12	-2.84E+03	146.30			-2.84E+03	1.46E+02
	16	242.14	7.88E+03	156.01			7.88E+03	1.56E+02
M	17	256.34	1.94E+03	69.94			1.94E+03	6.99E+01
m	18	259.04	7.12E+02	54.03			7.12E+02	5.40E+01
M	19	269.61	3.44E+03	77.30			3.44E+03	7.73E+01
m	20	271.37	2.89E+03	72.80			2.89E+03	7.28E+01
	21	283.75	-2.55E+04	226.24			-2.55E+04	2.26E+02
M	22	295.37	2.37E+04	162.75			2.37E+04	1.63E+02
m	23	300.19	1.08E+03	52.83			1.08E+03	5.28E+01
m	24	302.92	6.50E+02	47.23			6.50E+02	4.72E+01
	25	324.02	4.19E+02	75.72			4.19E+02	7.57E+01
	26	330.06	2.32E+02	79.52			2.32E+02	7.95E+01
	27	338.52	3.92E+02	67.32			3.92E+02	6.73E+01
	28	352.07	4.24E+04	225.85			4.24E+04	2.26E+02
	29	389.22	5.15E+02	71.34			5.15E+02	7.13E+01
M	30	401.99	1.24E+03	50.89			1.24E+03	5.09E+01
m	31	405.15	8.42E+02	45.60			8.42E+02	4.56E+01
	32	427.30	3.53E+02	67.86			3.53E+02	6.79E+01
	33	445.09	1.73E+02	45.28			1.73E+02	4.53E+01
	34	480.61	7.45E+01	48.99			7.45E+01	4.90E+01

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	35	487.34	2.15E+02	62.62			2.15E+02	6.26E+01
	36	511.23	1.02E+03	76.03	7.31E+01	3.34E+00	9.50E+02	7.61E+01
	37	580.67	2.52E+02	50.86			2.52E+02	5.09E+01
	38	609.60	3.22E+04	184.84			3.22E+04	1.85E+02
	39	665.81	9.81E+02	50.53			9.81E+02	5.05E+01
	40	703.39	2.83E+02	42.57			2.83E+02	4.26E+01
	41	720.18	2.18E+02	35.99			2.18E+02	3.60E+01
	42	768.78	3.05E+03	74.26			3.05E+03	7.43E+01
	43	786.26	5.68E+02	55.71			5.68E+02	5.57E+01
	44	806.60	6.80E+02	46.76			6.80E+02	4.68E+01
	45	821.40	4.88E+01	26.04			4.88E+01	2.60E+01
	46	832.42	1.24E+02	43.01			1.24E+02	4.30E+01
	47	839.47	2.57E+01	41.46			2.57E+01	4.15E+01
	48	934.59	1.61E+03	49.81			1.61E+03	4.98E+01
	49	964.64	1.56E+02	36.03			1.56E+02	3.60E+01
	50	1120.86	6.76E+03	89.07			6.76E+03	8.91E+01
	51	1155.83	7.48E+02	48.38			7.48E+02	4.84E+01
	52	1208.29	1.82E+02	31.16			1.82E+02	3.12E+01
	53	1238.71	2.50E+03	58.57			2.50E+03	5.86E+01
	54	1281.66	5.47E+02	38.94			5.47E+02	3.89E+01
M	55	1378.31	1.61E+03	43.43			1.61E+03	4.34E+01
m	56	1385.93	2.84E+02	21.41			2.84E+02	2.14E+01
M	57	1402.11	5.12E+02	27.25			5.12E+02	2.72E+01
m	58	1408.73	9.10E+02	34.47			9.10E+02	3.45E+01
	59	1509.89	7.86E+02	38.02			7.86E+02	3.80E+01
M	60	1539.33	1.56E+02	19.31			1.56E+02	1.93E+01
m	61	1544.02	1.00E+02	16.60			1.00E+02	1.66E+01
	62	1583.70	2.28E+02	24.42			2.28E+02	2.44E+01
	63	1662.03	3.21E+02	27.65			3.21E+02	2.76E+01
	64	1730.29	8.95E+02	33.81			8.95E+02	3.38E+01
	65	1765.21	4.90E+03	71.75			4.90E+03	7.17E+01
	66	1848.12	5.44E+02	30.39			5.44E+02	3.04E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 3/30/2016 2:09:26PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\NHHJ-6\ApexRoot\Default\Data\0000006791.CNF

Corrected Area is: Original * Peak Ratio - Background

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	36.36	9.34E+02	105.92			9.34E+02	1.06E+02
	2	46.64	2.07E+03	124.07	2.73E+01	2.86E+00	2.04E+03	1.24E+02
	3	50.07	-6.52E+02	91.60			-6.52E+02	9.16E+01
	4	67.76	8.07E+03	189.64			8.07E+03	1.90E+02
M	5	74.89	2.78E+03	106.55			2.78E+03	1.07E+02
m	6	77.17	5.52E+03	207.47			5.52E+03	2.07E+02
m	7	81.14	8.34E+02	38.61			8.34E+02	3.86E+01
m	8	83.90	2.52E+03	96.92			2.52E+03	9.69E+01
m	9	87.32	1.66E+03	66.04			1.66E+03	6.60E+01
m	10	89.93	3.35E+02	25.26			3.35E+02	2.53E+01
	11	94.73	-1.19E+03	151.44			-1.19E+03	1.51E+02
	12	144.10	3.70E+03	170.50			3.70E+03	1.71E+02
	13	154.27	2.29E+03	148.80			2.29E+03	1.49E+02
	14	186.28	7.52E+03	178.78	2.96E+01	3.21E+00	7.49E+03	1.79E+02
	15	236.12	-2.84E+03	146.30			-2.84E+03	1.46E+02
	16	242.14	7.88E+03	156.01			7.88E+03	1.56E+02
M	17	256.34	1.94E+03	69.94			1.94E+03	6.99E+01
m	18	259.04	7.12E+02	54.03			7.12E+02	5.40E+01
M	19	269.61	3.44E+03	77.30			3.44E+03	7.73E+01
m	20	271.37	2.89E+03	72.80			2.89E+03	7.28E+01
	21	283.75	-2.55E+04	226.24			-2.55E+04	2.26E+02
M	22	295.37	2.37E+04	162.75			2.37E+04	1.63E+02
m	23	300.19	1.08E+03	52.83			1.08E+03	5.28E+01
m	24	302.92	6.50E+02	47.23			6.50E+02	4.72E+01
	25	324.02	4.19E+02	75.72			4.19E+02	7.57E+01
	26	330.06	2.32E+02	79.52			2.32E+02	7.95E+01
	27	338.52	3.92E+02	67.32			3.92E+02	6.73E+01
	28	352.07	4.24E+04	225.85			4.24E+04	2.26E+02
	29	389.22	5.15E+02	71.34			5.15E+02	7.13E+01
M	30	401.99	1.24E+03	50.89			1.24E+03	5.09E+01
m	31	405.15	8.42E+02	45.60			8.42E+02	4.56E+01
	32	427.30	3.53E+02	67.86			3.53E+02	6.79E+01
	33	445.09	1.73E+02	45.28			1.73E+02	4.53E+01
	34	480.61	7.45E+01	48.99			7.45E+01	4.90E+01
	35	487.34	2.15E+02	62.62			2.15E+02	6.26E+01
	36	511.23	1.02E+03	76.03	7.31E+01	3.34E+00	9.50E+02	7.61E+01
	37	580.67	2.52E+02	50.86			2.52E+02	5.09E+01
	38	609.60	3.22E+04	184.84			3.22E+04	1.85E+02
	39	665.81	9.81E+02	50.53			9.81E+02	5.05E+01
	40	703.39	2.83E+02	42.57			2.83E+02	4.26E+01
	41	720.18	2.18E+02	35.99			2.18E+02	3.60E+01
	42	768.78	3.05E+03	74.26			3.05E+03	7.43E+01
	43	786.26	5.68E+02	55.71			5.68E+02	5.57E+01
	44	806.60	6.80E+02	46.76			6.80E+02	4.68E+01
	45	821.40	4.88E+01	26.04			4.88E+01	2.60E+01
	46	832.42	1.24E+02	43.01			1.24E+02	4.30E+01
	47	839.47	2.57E+01	41.46			2.57E+01	4.15E+01
	48	934.59	1.61E+03	49.81			1.61E+03	4.98E+01
	49	964.64	1.56E+02	36.03			1.56E+02	3.60E+01
	50	1120.86	6.76E+03	89.07			6.76E+03	8.91E+01
	51	1155.83	7.48E+02	48.38			7.48E+02	4.84E+01
	52	1208.29	1.82E+02	31.16			1.82E+02	3.12E+01
	53	1238.71	2.50E+03	58.57			2.50E+03	5.86E+01
	54	1281.66	5.47E+02	38.94			5.47E+02	3.89E+01

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
M	55	1378.31	1.61E+03	43.43			1.61E+03	4.34E+01
m	56	1385.93	2.84E+02	21.41			2.84E+02	2.14E+01
M	57	1402.11	5.12E+02	27.25			5.12E+02	2.72E+01
m	58	1408.73	9.10E+02	34.47			9.10E+02	3.45E+01
	59	1509.89	7.86E+02	38.02			7.86E+02	3.80E+01
M	60	1539.33	1.56E+02	19.31			1.56E+02	1.93E+01
m	61	1544.02	1.00E+02	16.60			1.00E+02	1.66E+01
	62	1583.70	2.28E+02	24.42			2.28E+02	2.44E+01
	63	1662.03	3.21E+02	27.65			3.21E+02	2.76E+01
	64	1730.29	8.95E+02	33.81			8.95E+02	3.38E+01
	65	1765.21	4.90E+03	71.75			4.90E+03	7.17E+01
	66	1848.12	5.44E+02	30.39			5.44E+02	3.04E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
SB-125	0.982	176.31		6.82		
		380.45		1.52		
		427.88	*	29.60	1.11E+01	2.29E+00
		463.36		10.49		
		600.60		17.86		
		606.72		5.03		
		635.95		11.31		
		671.45		1.80		
I-126	0.866	388.63	*	34.10	2.36E+02	3.68E+01
BA-133	0.350	53.16		2.20		
		79.62		2.62		
		81.00	*	34.06	1.01E+01	7.16E-01
		160.61		0.64		
		223.23		0.45		
		276.40		7.16		
		302.85	*	18.33	2.49E+01	2.40E+00
		356.02		62.05		
		383.85		8.94		
PB-210	0.998	46.54	*	4.25	2.53E+02	3.00E+01
PB-211	0.984	404.85	*	3.78	1.92E+02	1.67E+01
		427.09	*	1.76	1.80E+02	3.69E+01

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-211	0.984	704.64		0.46		
		766.51		0.62		
		832.01	*	3.52	5.43E+01	1.91E+01
BI-214	0.952	609.31	*	44.80	8.61E+02	3.80E+01
		665.45	*	1.29	9.77E+02	6.36E+01
		768.36	*	4.80	9.19E+02	5.05E+01
		806.17	*	1.22	8.36E+02	7.55E+01
		934.06	*	3.03	8.97E+02	6.61E+01
		1120.29	*	14.80	8.93E+02	3.88E+01
		1155.19	*	1.64	9.13E+02	7.00E+01
		1207.68	*	0.49	7.71E+02	1.55E+02
		1238.11	*	5.86	9.03E+02	3.66E+01
		1280.96	*	1.44	8.25E+02	6.61E+01
		1377.67	*	3.92	9.46E+02	4.30E+01
		1385.31	*	0.89	7.36E+02	9.56E+01
		1401.50	*	1.55	7.69E+02	9.67E+01
		1407.98	*	2.80	7.60E+02	1.15E+02
		1415.80		0.48		
		1509.23	*	2.12	9.15E+02	5.55E+01
		1583.22	*	0.70	8.29E+02	9.42E+01
		1661.28	*	1.14	7.48E+02	7.16E+01
		1729.59	*	2.88	8.52E+02	4.59E+01
		1764.49	*	15.36	8.88E+02	3.36E+01
		1847.42	*	2.04	7.69E+02	5.20E+01
PB-214	0.962	53.23		1.11		
		241.98	*	7.50	6.25E+02	4.00E+01
		258.79	*	0.55	8.05E+02	1.07E+02
		295.21	*	18.50	8.74E+02	5.72E+01
		351.92	*	35.80	9.18E+02	6.20E+01
		785.91	*	0.85	9.83E+02	1.58E+02
		839.03	*	0.63	6.31E+01	1.02E+02
RN-219	0.996	130.59		0.12		
		271.23	*	10.80	1.72E+02	1.25E+01
		401.81	*	6.37	1.67E+02	1.30E+01
RA-223	0.870	122.32		1.19		
		144.23	*	3.22	5.18E+02	3.86E+01
		154.21	*	5.62	1.89E+02	1.66E+01
		158.63		0.69		
		179.54		0.15		
		269.46	*	13.70	1.61E+02	1.10E+01
		288.18		0.16		
		323.87	*	3.93	7.77E+01	1.50E+01
		328.40		0.21		
		338.28	*	2.79	1.06E+02	1.96E+01
		342.90		0.22		
		346.80		0.18		
		371.68		0.48		
TH-227	0.994	50.13	*	8.00	-4.04E+01	6.21E+00
		79.72		1.89		
		93.93	*	1.37	-3.56E+02	5.73E+01
		210.65		1.10		
		235.97	*	12.70	-1.31E+02	1.45E+01
		256.25	*	7.01	1.71E+02	1.50E+01

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
TH-227	0.994	286.12		1.54		
		300.00	*	2.67	2.79E+02	3.20E+01
		304.51		1.23		
		329.85	*	2.69	6.38E+01	2.31E+01
		334.38		1.05		
TH-228	0.971	84.37	*	1.23	8.37E+02	5.81E+01
		215.99		0.26		
PA-231	0.996	283.69	*	1.70	-9.94E+03	8.57E+02
		300.07	*	2.46	3.02E+02	2.57E+01
		302.65	*	2.20	2.05E+02	3.20E+01
		330.06	*	1.40	1.23E+02	4.62E+01
TH-231	0.987	81.23	*	0.89	3.83E+02	3.45E+01
		84.21	*	6.60	1.56E+02	1.27E+01
		89.95	*	0.94	1.45E+02	1.67E+01
U-235	0.732	109.16		1.54		
		143.76	*	10.96	1.52E+02	1.09E+01
		163.36		5.08		
		185.71	*	57.20	6.66E+01	4.01E+00
		194.94		0.63		
		202.11		1.08		
		205.31		5.01		
NP-237	0.899	57.10		0.39		
		86.48	*	12.40	5.46E+01	4.26E+00
		94.64	*	0.60	-8.13E+02	2.94E+02
		143.25	*	0.43	3.88E+03	3.30E+02
AM-243	0.991	74.66	*	68.20	1.69E+01	1.08E+00

* = Energy line found in the spectrum.
- = Manually added nuclide.
? = Manually edited nuclide.
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 3/30/2016 2:09:26PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	36.36	2.59472E-01	11.34	Tol.	I-125
	4	67.76	2.24067E+00	2.35		
m	6	77.17	1.53396E+00	3.76		
	33	445.09	4.81111E-02	26.14	Sum	
	34	480.61	2.06944E-02	65.76	Sum	
	35	487.34	5.97222E-02	29.13	D-Esc	
	36	511.23	2.64007E-01	8.01	Sum	
	37	580.67	6.98889E-02	20.21	Sum	

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	40	703.39	7.86389E-02	15.04	Sum	
	41	720.18	6.05000E-02	16.52	Sum	
	45	821.40	1.35556E-02	53.36		
	49	964.64	4.32639E-02	23.13	Tol.	EU-152 AC-228
M	60	1539.33	4.33419E-02	12.37	Sum	
m	61	1544.02	2.77706E-02	16.60	Sum	

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
SB-125	0.98	176.31		6.82		
		380.45		1.52		
		427.88	*	29.60	1.11E+01	2.29E+00
		463.36		10.49		
		600.60		17.86		
		606.72		5.03		
		635.95		11.31		
		671.45		1.80		
I-126	0.86	388.63	*	34.10	2.36E+02	3.68E+01
BA-133	0.35	53.16		2.20		
		79.62		2.62		
		81.00	*	34.06	1.01E+01	7.16E-01
		160.61		0.64		
		223.23		0.45		
		276.40		7.16		
		302.85	*	18.33	2.49E+01	2.40E+00
		356.02		62.05		
		383.85		8.94		
PB-210	0.99	46.54	*	4.25	2.53E+02	3.00E+01
PB-211	0.98	404.85	*	3.78	1.92E+02	1.67E+01
		427.09	*	1.76	1.80E+02	3.69E+01
		704.64		0.46		
		766.51		0.62		
		832.01	*	3.52	5.43E+01	1.91E+01
BI-214	0.95	609.31	*	44.80	8.61E+02	3.80E+01
		665.45	*	1.29	9.77E+02	6.36E+01

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.95	768.36	*	4.80	9.19E+02	5.05E+01
		806.17	*	1.22	8.36E+02	7.55E+01
		934.06	*	3.03	8.97E+02	6.61E+01
		1120.29	*	14.80	8.93E+02	3.88E+01
		1155.19	*	1.64	9.13E+02	7.00E+01
		1207.68	*	0.49	7.71E+02	1.55E+02
		1238.11	*	5.86	9.03E+02	3.66E+01
		1280.96	*	1.44	8.25E+02	6.61E+01
		1377.67	*	3.92	9.46E+02	4.30E+01
		1385.31	*	0.89	7.36E+02	9.56E+01
		1401.50	*	1.55	7.69E+02	9.67E+01
		1407.98	*	2.80	7.60E+02	1.15E+02
		1415.80		0.48		
		1509.23	*	2.12	9.15E+02	5.55E+01
		1583.22	*	0.70	8.29E+02	9.42E+01
		1661.28	*	1.14	7.48E+02	7.16E+01
		1729.59	*	2.88	8.52E+02	4.59E+01
		1764.49	*	15.36	8.88E+02	3.36E+01
		1847.42	*	2.04	7.69E+02	5.20E+01
PB-214	0.96	53.23		1.11		
		241.98	*	7.50	6.25E+02	4.00E+01
		258.79	*	0.55	8.05E+02	1.07E+02
		295.21	*	18.50	8.74E+02	5.72E+01
		351.92	*	35.80	9.18E+02	6.20E+01
		785.91	*	0.85	9.83E+02	1.58E+02
		839.03	*	0.63	6.31E+01	1.02E+02
RN-219	0.99	130.59		0.12		
		271.23	*	10.80	1.72E+02	1.25E+01
		401.81	*	6.37	1.67E+02	1.30E+01
RA-223	0.87	122.32		1.19		
		144.23	*	3.22	5.18E+02	3.86E+01
		154.21	*	5.62	1.89E+02	1.66E+01
		158.63		0.69		
		179.54		0.15		
		269.46	*	13.70	1.61E+02	1.10E+01
		288.18		0.16		
		323.87	*	3.93	7.77E+01	1.50E+01
		328.40		0.21		
		338.28	*	2.79	1.06E+02	1.96E+01
		342.90		0.22		
		346.80		0.18		
		371.68		0.48		
TH-227	0.99	50.13	*	8.00	-4.04E+01	6.21E+00
		79.72		1.89		
		93.93	*	1.37	-3.56E+02	5.73E+01
		210.65		1.10		
		235.97	*	12.70	-1.31E+02	1.45E+01
		256.25	*	7.01	1.71E+02	1.50E+01
		286.12		1.54		
		300.00	*	2.67	2.79E+02	3.20E+01
		304.51		1.23		
		329.85	*	2.69	6.38E+01	2.31E+01
		334.38		1.05		

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
TH-228	0.97	84.37	*	1.23	8.37E+02	5.81E+01
		215.99		0.26		
PA-231	0.99	283.69	*	1.70	-9.94E+03	8.57E+02
		300.07	*	2.46	3.02E+02	2.57E+01
		302.65	*	2.20	2.05E+02	3.20E+01
		330.06	*	1.40	1.23E+02	4.62E+01
TH-231	0.98	81.23	*	0.89	3.83E+02	3.45E+01
		84.21	*	6.60	1.56E+02	1.27E+01
		89.95	*	0.94	1.45E+02	1.67E+01
U-235	0.73	109.16		1.54		
		143.76	*	10.96	1.52E+02	1.09E+01
		163.36		5.08		
		185.71	*	57.20	6.66E+01	4.01E+00
		194.94		0.63		
		202.11		1.08		
		205.31		5.01		
NP-237	0.89	57.10		0.39		
		86.48	*	12.40	5.46E+01	4.26E+00
		94.64	*	0.60	-8.13E+02	2.94E+02
		143.25	*	0.43	3.88E+03	3.30E+02
AM-243	0.99	74.66	*	68.20	1.69E+01	1.08E+00

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 1.000 sigma

INTERFERENCE CORRECTED REPORT
WITH PARENT/DAUGHTER CORRECTION

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
X	NB-95m	0.300			
X	CD-109	0.922			
	SB-125	0.982	2.91E+00	2.39E+00	
	I-126	0.866	2.36E+02	3.68E+01	
X	I-131	0.786			
	BA-133	0.350	6.73E+00	7.84E-01	
X	EU-155	0.324			
	PB-210	0.998	2.53E+02	3.00E+01	
	PB-211	0.984	1.33E+02	1.25E+01	
	BI-214	0.952	8.75E+02	1.21E+01	
	PB-214	0.962	7.16E+02	2.66E+01	

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	RN-219	0.996	1.69E+02	9.02E+00	
	RA-223	0.870	1.45E+02	6.93E+00	
X	RA-226	0.995			
	TH-227	0.994	1.40E+02	1.05E+01	
	TH-228	0.971	7.64E+01	9.34E+01	
	PA-231	0.996	1.16E+02	1.63E+01	
	TH-231	0.987	1.42E+02	1.39E+01	
	U-235	0.732	7.14E+01	3.73E+00	
	NP-237	0.899	5.48E+01	3.87E+00	
	AM-243	0.991	1.69E+01	1.08E+00	

! = nuclide was corrected for parent/daughter
? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 3/30/2016 2:09:26PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	36.36	2.59472E-01	11.34	Tol.	I-125
	4	67.76	2.24067E+00	2.35		
m	6	77.17	1.53396E+00	3.76		
	33	445.09	4.81111E-02	26.14	Sum	
	34	480.61	2.06944E-02	65.76	Sum	
	35	487.34	5.97222E-02	29.13	D-Esc	
	36	511.23	2.64007E-01	8.01	Sum	
	37	580.67	6.98889E-02	20.21	Sum	
	40	703.39	7.86389E-02	15.04	Sum	
	41	720.18	6.05000E-02	16.52	Sum	
	45	821.40	1.35556E-02	53.36		
	49	964.64	4.32639E-02	23.13	Tol.	EU-152 AC-228
M	60	1539.33	4.33419E-02	12.37	Sum	
m	61	1544.02	2.77706E-02	16.60	Sum	

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.000 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
BE-7	477.60	10.42	-2.51E+01	6.98E+01	6.98E+01
NA-22	1274.53	99.94	-7.78E+00	4.19E+00	4.19E+00
@ NA-24	1368.63	100.00	1.00E+26	1.00E+26	1.00E+26
> @	2754.03	99.94	0.00E+00		0.00E+00
K-40	1460.83	10.67	7.27E+00	4.22E+01	4.22E+01
@ AR-41	1293.59	99.10	1.00E+26	1.00E+26	1.00E+26
CR-51	320.08	9.86	-1.66E+02	1.37E+02	1.37E+02
MN-54	834.85	99.98	7.22E+00	5.02E+00	5.02E+00
CO-56	846.77	99.93	-4.92E+00	1.94E+00	6.17E+00
	977.37	1.44	-1.54E+02		4.47E+02
	1037.84	13.99	1.25E+01		4.52E+01
	1175.10	2.28	-1.66E+02		2.84E+02
	1238.28	67.56	1.26E+02		1.94E+01
	1360.21	4.33	-4.97E+00		1.45E+02
	1771.35	15.69	-1.00E+03		1.31E+02
	2015.18	3.08	0.00E+00		4.93E+00
	2034.76	7.89	0.00E+00		1.94E+00
@ MN-56	846.75	98.87	1.00E+26	1.00E+26	1.00E+26
@	1810.72	27.19	1.00E+26		1.00E+26
> @	2113.05	14.34	0.00E+00		0.00E+00
CO-57	122.06	85.60	-7.39E-01	4.48E+00	4.48E+00
	136.47	10.68	-7.77E+01		3.84E+01
	692.41	0.16	-7.44E+02		2.23E+03
CO-58	810.78	99.45	-1.17E+01	7.82E+00	7.82E+00
	863.96	0.68	-1.28E+02		1.02E+03
	1674.73	0.52	-2.79E+03		9.19E+02
FE-59	142.65	1.02	-5.31E+02	1.69E+01	9.51E+02
	192.35	3.08	-1.91E+03		2.85E+02
	1099.25	56.50	-4.36E+00		1.69E+01
	1291.60	43.20	-5.36E+01		2.07E+01
CO-60	1173.24	99.90	-3.73E+00	3.95E+00	3.99E+00
	1332.50	99.98	9.54E-01		3.95E+00
@ CU-64	1345.77	0.47	1.00E+26	1.00E+26	1.00E+26
ZN-65	1115.55	50.60	-2.04E+02	2.49E+01	2.49E+01
SE-75	66.05	1.12	2.30E+03	7.60E+00	4.58E+02
	96.73	3.42	6.51E+00		1.18E+02
	121.12	17.14	-1.95E+00		2.68E+01
	136.00	58.27	-8.04E+00		8.39E+00
	198.61	1.47	2.18E+01		3.47E+02

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
SE-75	264.66		58.50	-5.35E+01	7.60E+00	7.60E+00
	279.54		24.79	-5.36E+01		1.94E+01
	303.93		1.31	-1.02E+04		4.02E+02
	400.66		11.37	-7.56E+01		5.10E+01
RB-83	520.39		44.70	-2.18E+01	1.10E+01	1.10E+01
	529.59		29.30	2.03E+00		1.73E+01
	552.59		15.96	-5.61E+00		3.17E+01
@ BR-84	881.60		42.00	1.00E+26	1.00E+26	1.00E+26
@	1897.60		14.90	1.00E+26		1.00E+26
KR-85	514.01		0.43	-4.23E+02	8.93E+02	8.93E+02
@ KR-85M	151.20		75.00	1.00E+26	1.00E+26	1.00E+26
@	304.87		14.00	1.00E+26		1.00E+26
SR-85	514.01		95.70	-3.40E+00	7.18E+00	7.18E+00
@ SR-85m	151.19		12.90	1.00E+26	1.00E+26	1.00E+26
@	231.86		84.40	1.00E+26		1.00E+26
RB-86	1077.00		8.64	-1.58E+02	3.58E+02	3.58E+02
@ KR-87	402.59		49.60	1.00E+26	1.00E+26	1.00E+26
@	673.83		1.89	1.00E+26		1.00E+26
@	845.44		7.30	1.00E+26		1.00E+26
@	1175.40		1.11	1.00E+26		1.00E+26
@	1740.52		2.04	1.00E+26		1.00E+26
@ KR-88	165.98		3.10	1.00E+26	1.00E+26	1.00E+26
@	196.30		26.00	1.00E+26		1.00E+26
@	362.23		2.25	1.00E+26		1.00E+26
@	834.83		13.00	1.00E+26		1.00E+26
@	985.78		1.52	1.00E+26		1.00E+26
@	1141.33		1.28	1.00E+26		1.00E+26
@	1179.51		1.00	1.00E+26		1.00E+26
@	1250.67		1.12	1.00E+26		1.00E+26
@	1369.50		1.48	1.00E+26		1.00E+26
@	1518.39		2.15	1.00E+26		1.00E+26
@	1529.77		10.90	1.00E+26		1.00E+26
@ RB-88	898.03		14.04	1.00E+26	1.00E+26	1.00E+26
@	1836.01		21.40	1.00E+26		1.00E+26
Y-88	898.04		93.68	7.07E-01	4.58E+00	6.66E+00
	1836.06		99.24	-1.21E+01		4.58E+00
NB-94x	702.62		97.90	-1.02E+00	3.69E+00	3.69E+00
	871.09		99.90	5.52E-01		4.23E+00
NB-95	765.81		99.81	-3.19E+01	1.89E+01	1.89E+01
NB-95m	204.12		2.33	1.03E+06	7.11E+05	6.55E+06
	235.69	*	24.80	-2.77E+06		7.11E+05
ZR-95	724.20		44.17	-6.79E+00	1.19E+01	1.42E+01
	756.73		54.46	2.81E+00		1.19E+01
NB-96	460.04		26.62	3.33E+17	4.69E+17	1.69E+18
	568.87		57.97	1.36E+17		7.68E+17
	778.22		96.45	-1.68E+18		4.69E+17
	849.93		20.40	-1.02E+18		2.47E+18
	1200.23		19.96	-2.37E+18		2.46E+18
MO-99	140.51		4.52	-1.42E+08	3.29E+07	9.45E+07
	181.06		6.08	-1.26E+08		7.05E+07
	366.42		1.20	-9.03E+07		3.06E+08
	739.50		12.13	2.16E+07		3.29E+07

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	MO-99	777.92		4.28	-3.30E+08	3.29E+07	9.19E+07
@	TC-99M	140.51		89.06	1.00E+26	1.00E+26	1.00E+26
	RU-103	443.80		3.27	1.36E+02	9.36E+00	2.77E+02
		497.08		90.90	-7.87E+00		9.36E+00
		610.33		5.75	1.78E+04		6.72E+02
	RHRU-106	621.93		9.93	-1.55E+01	3.26E+01	3.26E+01
		1050.41		1.56	1.07E+02		2.81E+02
	AG-108M	433.94		90.50	-2.84E+00	3.80E+00	3.82E+00
		614.28		89.90	-2.35E+02		1.44E+01
		722.94		90.90	-1.59E+00		3.80E+00
	CD-109	88.03	*	3.61	2.04E+02	8.48E+01	8.48E+01
	AG-110M	116.48		1.36	3.36E+01	3.76E+00	2.83E+02
		446.81		3.72	1.02E+01		1.06E+02
		620.36		2.79	-2.83E+03		1.26E+02
		657.76		94.00	-1.38E+01		3.76E+00
		677.62		10.28	-9.81E+00		3.39E+01
		687.02		6.39	-3.55E+00		5.52E+01
		706.68		16.32	-7.57E+00		2.61E+01
		744.28		4.70	4.23E+01		8.56E+01
		763.94		22.14	-8.56E+01		2.93E+01
		818.03		7.29	-5.22E+00		6.12E+01
		884.68		72.19	-1.56E+00		6.86E+00
		937.49		34.13	9.89E+01		2.07E+01
		1384.30		24.12	7.06E+01		3.30E+01
		1475.79		3.97	-2.65E+01		1.30E+02
		1505.04		12.95	-1.50E+02		6.06E+01
		1562.30		1.02	-5.66E+01		4.82E+02
	SN-113	255.06		1.82	1.04E+03	7.64E+00	3.00E+02
		391.69		64.00	-3.83E+00		7.64E+00
	IN-114	190.27		15.40	-2.30E+02	5.45E+01	5.45E+01
		558.43		4.40	2.71E+01		1.62E+02
		725.24		4.40	-1.05E+02		1.64E+02
	SB-122	564.24		69.30	-2.29E+06	6.98E+06	6.98E+06
	I-124	602.72		60.50	-5.50E+06	5.43E+04	5.43E+04
		722.78		9.98	-1.52E+05		3.34E+05
		1509.49		2.99	6.26E+06		2.18E+06
		1691.02		10.40	3.70E+05		3.28E+05
	SB-124	602.73		97.80	-6.64E+02	6.56E+00	6.56E+00
		645.85		7.38	-1.71E+01		7.46E+01
		709.32		1.35	-2.75E+02		4.74E+02
		713.78		2.27	-3.15E+02		2.70E+02
		722.79		10.76	-2.76E+01		6.05E+01
		968.20		1.89	-2.14E+02		4.28E+02
		1045.13		1.84	-2.12E+02		3.90E+02
		1325.51		1.62	-2.20E+02		4.35E+02
		1355.18		1.04	-7.84E+01		6.86E+02
		1368.16		2.62	-1.88E+03		2.80E+02
		1436.56		1.23	9.86E+01		6.45E+02
		1690.98		47.30	1.59E+01		1.41E+01
	I-125	30.98		20.10	1.97E+02	4.28E+01	4.28E+01
		35.49		6.68	6.18E+00		1.19E+02
+	SB-125	176.31		6.82	-1.75E+01	9.68E+00	5.56E+01

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-125	380.45		1.52	-1.73E+02	9.68E+00	2.21E+02
		427.88	*	29.60	1.11E+01		9.68E+00
		463.36		10.49	-5.69E+00		3.31E+01
		600.60		17.86	-1.71E+03		2.00E+01
		606.72		5.03	-3.97E+03		2.99E+02
		635.95		11.31	1.46E+01		2.82E+01
		671.45		1.80	-2.65E+02		1.81E+02
	@ XE-125	188.42		54.00	1.00E+26	1.00E+26	1.00E+26
	@	243.38		30.10	1.00E+26		1.00E+26
+	I-126	388.63	*	34.10	2.36E+02	1.45E+02	1.45E+02
	SB-126	414.80		83.30	-8.46E+01	6.81E+01	9.89E+01
		666.30		99.60	-6.18E+01		8.86E+01
		695.00		99.60	-6.72E+01		6.81E+01
		697.00		28.90	-2.64E+02		2.36E+02
		720.50		53.80	9.58E+01		1.39E+02
		856.70		17.60	-3.05E+01		4.92E+02
	I-129	39.58		7.45	-9.84E+01	4.35E+01	4.35E+01
	@ I-130	418.01		34.15	1.00E+26	1.00E+26	1.00E+26
	@	536.09		99.00	1.00E+26		1.00E+26
	@	668.54		96.10	1.00E+26		1.00E+26
	@	739.48		82.30	1.00E+26		1.00E+26
	@	1157.47		11.30	1.00E+26		1.00E+26
	I-131	284.30	*	6.14	-3.29E+05	4.63E+02	1.66E+04
		364.49		81.70	-9.20E+01		4.63E+02
		636.99		7.17	2.80E+03		5.11E+03
		722.91		1.77	-9.79E+03		2.33E+04
	XE-131M	163.93		1.91	-2.42E+03	4.93E+03	4.93E+03
	TE-132	111.76		1.74	1.82E+07	6.29E+05	2.54E+07
		116.30		1.96	3.22E+06		2.71E+07
		228.16		88.00	-1.95E+06		6.29E+05
+	BA-133	53.16		2.20	-5.28E+01	8.41E+00	1.29E+02
		79.62		2.62	-2.18E+02		1.49E+02
		81.00	*	34.06	1.01E+01		8.41E+00
		160.61		0.64	-9.76E+02		5.87E+02
		223.23		0.45	1.08E+02		7.86E+02
		276.40		7.16	-3.29E+02		5.19E+01
		302.85	*	18.33	2.49E+01		1.34E+01
		356.02		62.05	-2.12E+02		1.16E+01
		383.85		8.94	-2.93E+01		3.74E+01
	I-133	529.87		87.00	7.35E+18	6.26E+19	6.26E+19
		875.33		4.51	2.96E+20		1.59E+21
	CS-134	475.35		1.47	-1.51E+02	4.33E+00	2.31E+02
		563.23		8.38	-1.47E+01		4.08E+01
		569.32		15.43	8.51E+00		2.29E+01
		604.70		97.56	-2.89E+02		8.04E+00
		795.84		85.44	-5.49E+00		4.33E+00
		801.93		8.73	-4.79E+01		5.13E+01
		1038.57		1.00	8.42E+01		4.03E+02
		1167.94		1.80	-1.39E+02		2.31E+02
		1365.15		3.04	1.56E+01		1.34E+02
	@ I-134	405.45		7.35	1.00E+26	1.00E+26	1.00E+26
	@	540.83		7.60	1.00E+26		1.00E+26

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
@	I-134	595.36	11.20	1.00E+26	1.00E+26	1.00E+26
@		621.79	10.60	1.00E+26		1.00E+26
@		677.34	7.80	1.00E+26		1.00E+26
@		847.03	95.40	1.00E+26		1.00E+26
@		884.09	64.90	1.00E+26		1.00E+26
@		1072.55	15.00	1.00E+26		1.00E+26
@		1136.16	9.20	1.00E+26		1.00E+26
	CS-135	787.20	100.00	8.78E+00	3.95E+00	4.16E+00
		846.10	95.90	-2.72E+00		3.95E+00
@	I-135	417.63	3.55	1.00E+26	1.00E+26	1.00E+26
@		546.56	7.20	1.00E+26		1.00E+26
@		836.80	6.73	1.00E+26		1.00E+26
@		1038.76	8.00	1.00E+26		1.00E+26
@		1124.00	3.64	1.00E+26		1.00E+26
@		1131.51	22.74	1.00E+26		1.00E+26
@		1260.41	28.90	1.00E+26		1.00E+26
@		1457.56	8.73	1.00E+26		1.00E+26
@		1678.03	9.62	1.00E+26		1.00E+26
@		1706.46	4.13	1.00E+26		1.00E+26
@		1791.20	7.77	1.00E+26		1.00E+26
@	XE-135	249.79	90.20	1.00E+26	1.00E+26	1.00E+26
@		608.18	2.90	1.00E+26		1.00E+26
@	XE-135M	526.56	80.50	1.00E+26	1.00E+26	1.00E+26
	CS-136	66.88	4.80	1.62E+04	7.08E+01	1.59E+03
		86.36	5.20	6.24E+03		1.32E+03
		153.25	5.77	-4.36E+02		1.29E+03
		163.92	3.40	-9.81E+02		2.00E+03
		176.60	10.00	-3.11E+02		6.72E+02
		273.65	11.10	-1.86E+03		7.65E+02
		340.55	42.30	-2.49E+01		1.57E+02
		818.51	100.00	1.22E+01		7.08E+01
		1048.07	80.00	3.46E+01		9.12E+01
		1235.36	20.10	-1.88E+03		7.32E+02
	CS-137	661.66	85.10	-9.70E+00	4.43E+00	4.43E+00
@	CS-138	138.10	1.49	1.00E+26	1.00E+26	1.00E+26
@		227.76	1.51	1.00E+26		1.00E+26
@		408.98	4.66	1.00E+26		1.00E+26
@		462.80	30.70	1.00E+26		1.00E+26
@		547.00	10.76	1.00E+26		1.00E+26
@		871.80	5.11	1.00E+26		1.00E+26
@		1009.78	29.80	1.00E+26		1.00E+26
@		1147.22	1.24	1.00E+26		1.00E+26
@		1343.59	1.14	1.00E+26		1.00E+26
@		1435.86	76.30	1.00E+26		1.00E+26
	LA-138	788.74	33.60	-2.70E+00	6.28E+00	1.24E+01
		1435.80	66.40	1.43E-01		6.28E+00
@	BA-139	165.86	23.60	1.00E+26	1.00E+26	1.00E+26
	CE-139	165.85	79.90	-1.17E+00	6.12E+00	6.12E+00
	BA-140	162.66	6.21	-1.51E+03	2.76E+02	1.21E+03
		304.85	4.30	-1.17E+04		1.69E+03
		423.72	3.10	2.69E+01		2.59E+03
		437.58	1.93	-2.70E+03		3.53E+03

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
BA-140	537.26	24.39	9.69E+01	2.76E+02	2.76E+02
LA-140	328.76	20.32	-5.84E+10	4.01E+10	1.47E+11
	432.49	2.90	-5.64E+11		9.96E+11
	487.02	45.50	2.80E+10		6.42E+10
	751.64	4.33	-4.13E+11		6.62E+11
	815.77	23.30	-3.33E+11		1.32E+11
	867.85	5.50	-1.39E+11		6.21E+11
	919.55	2.66	-1.03E+12		1.26E+12
	925.19	6.90	-3.53E+12		4.84E+11
	1596.21	95.40	4.18E+09		4.01E+10
CE-141	145.44	48.20	-1.25E+01	2.78E+01	2.78E+01
CE-144	80.12	1.36	-2.48E+03	3.61E+01	2.95E+02
	133.51	11.09	-6.65E+00		3.61E+01
PM-144	476.78	41.98	-4.20E+00	3.40E+00	8.71E+00
	618.01	98.59	-4.15E+02		3.40E+00
	694.00	0.55	-4.12E+02		6.26E+02
	696.49	99.49	-4.19E+00		3.51E+00
	778.57	1.51	-8.97E+02		2.52E+02
	814.14	0.55	-2.25E+03		7.50E+02
PM-146	146.20	0.22	-2.11E+03	5.23E+00	1.91E+03
	453.88	66.00	-8.12E-01		5.23E+00
	589.80	0.43	-9.20E+02		7.62E+02
	633.25	1.12	6.17E+01		2.78E+02
	735.93	22.80	-8.78E+00		1.46E+01
	747.24	17.71	6.29E-01		1.95E+01
ND-147	91.11	27.90	-1.69E+03	3.45E+02	3.45E+02
	319.41	1.95	-6.70E+03		5.62E+03
	398.15	0.87	-3.55E+04		1.35E+04
	439.89	1.20	-5.92E+03		9.09E+03
	531.02	13.09	1.81E+02		8.24E+02
EU-152	121.78	28.42	-2.11E+00	1.18E+01	1.18E+01
	244.70	7.49	-1.28E+02		7.00E+01
	295.94	0.44	3.48E+04		1.76E+03
	344.28	26.58	-5.53E+02		1.29E+01
	411.12	2.23	-1.95E+02		1.71E+02
	443.98	3.09	6.20E+01		1.11E+02
	688.67	0.83	-1.21E+02		3.65E+02
	778.90	12.96	-9.48E+01		2.65E+01
	867.39	4.15	-1.11E+01		1.00E+02
	964.13	14.50	2.43E+01		2.99E+01
	1005.28	0.65	1.34E+02		6.11E+02
	1085.87	10.16	1.17E+01		4.04E+01
	1089.70	1.71	2.87E+01		2.39E+02
	1112.12	13.54	-9.60E+02		3.06E+01
	1212.95	1.40	-1.71E+02		3.13E+02
	1299.12	1.63	-1.09E+01		2.33E+02
	1408.01	20.87	1.34E+02		3.34E+01
GD-153	69.67	2.54	-3.56E+02	1.10E+01	1.81E+02
	97.43	30.20	-7.52E-01		1.10E+01
	103.18	21.44	-1.37E+01		1.42E+01
EU-154	123.07	40.78	-3.26E-01	8.31E+00	8.31E+00
	247.93	6.95	-4.34E+02		4.88E+01

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Analysis Report for 591000R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	EU-154	444.49		0.56	3.15E+02	8.31E+00	6.15E+02
		582.10		0.89	3.14E+02		4.00E+02
		591.76		4.99	-4.65E+01		6.53E+01
		692.42		1.80	-5.71E+01		1.71E+02
		723.30		20.22	-7.26E+00		1.73E+01
		756.80		4.57	1.86E+01		7.88E+01
		815.53		0.52	-1.94E+03		7.20E+02
		845.39		0.59	-4.40E+02		6.58E+02
		873.19		12.27	1.42E+01		3.53E+01
		892.78		0.52	-3.54E+01		8.38E+02
		904.08		0.90	-8.79E+00		4.94E+02
		996.26		10.59	-7.72E+00		3.72E+01
		1004.72		18.00	5.51E+00		2.22E+01
		1246.15		0.87	-5.74E+03		5.24E+02
		1274.44		35.19	-2.15E+01		1.16E+01
		1494.05		0.70	2.41E+02		7.19E+02
		1596.49		1.80	1.01E+02		2.59E+02
	EU-155	45.30		1.32	9.29E+02	9.39E+00	2.62E+02
		60.01		1.13	-2.32E+02		2.61E+02
		86.54	*	30.70	2.26E+01		9.39E+00
		105.31		21.15	-9.41E+00		1.27E+01
	W-187	72.00		11.10	-4.95E+18	7.95E+17	2.01E+18
		134.25		8.80	-1.08E+18		2.87E+18
		479.55		21.80	-2.49E+17		1.16E+18
		618.26		6.28	-4.22E+20		3.45E+18
		625.52		1.09	-1.37E+19		1.93E+19
		685.73		27.30	4.16E+15		7.95E+17
		772.89		4.12	-9.31E+18		1.08E+19
	IR-192	295.96		28.66	8.91E+02	6.91E+00	4.51E+01
		308.46		30.00	-2.20E+01		1.85E+01
		316.51		82.81	-1.93E+00		6.91E+00
		468.07		47.83	-3.65E+00		1.15E+01
		588.58		4.51	-1.16E+02		1.20E+02
		604.41		8.23	-5.48E+03		1.52E+02
		612.47		5.31	-4.84E+03		4.61E+02
	TL-201	135.34		2.56	-1.58E+07	1.12E+07	4.21E+07
		167.43		10.00	-2.17E+06		1.12E+07
	HG-203	279.20		81.46	-3.14E+01	9.83E+00	9.83E+00
	TL-208	277.36		6.31	-3.71E+02	4.16E+00	5.76E+01
		510.77		22.60	4.73E+01		1.70E+01
		583.19		84.50	-5.94E-01		4.16E+00
		763.13		1.81	-1.08E+03		2.28E+02
		860.56		12.42	-6.81E+00		3.23E+01
+	PB-210	46.54	*	4.25	2.53E+02	6.68E+01	6.68E+01
	BI-211	351.06		12.91	2.54E+03	8.53E+01	8.53E+01
+	PB-211	404.85	*	3.78	1.92E+02	7.22E+01	7.22E+01
		427.09	*	1.76	1.80E+02		1.57E+02
		704.64		0.46	9.53E+02		7.86E+02
		766.51		0.62	-1.48E+03		1.02E+03
		832.01	*	3.52	5.43E+01		8.58E+01
	BI-212	727.33		6.58	-5.03E+01	4.86E+01	4.86E+01
		785.37		1.10	-4.67E+01		3.76E+02

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BI-212	1078.62		0.56	-6.20E+02	4.86E+01	6.89E+02
		1620.50		1.49	-2.95E+01		2.54E+02
	PB-212	115.18		0.59	1.54E+02	1.06E+01	4.67E+02
		238.63		43.30	1.09E+01		1.06E+01
		300.09		3.28	-3.06E+03		1.23E+02
+	BI-214	609.31	*	44.80	8.61E+02	5.54E+00	5.54E+00
		665.45	*	1.29	9.77E+02		1.87E+02
		768.36	*	4.80	9.19E+02		7.03E+01
		806.17	*	1.22	8.36E+02		2.26E+02
		934.06	*	3.03	8.97E+02		7.83E+01
		1120.29	*	14.80	8.93E+02		2.14E+01
		1155.19	*	1.64	9.13E+02		2.30E+02
		1207.68	*	0.49	7.71E+02		5.65E+02
		1238.11	*	5.86	9.03E+02		5.22E+01
		1280.96	*	1.44	8.25E+02		2.23E+02
		1377.67	*	3.92	9.46E+02		6.91E+01
		1385.31	*	0.89	7.36E+02		3.12E+02
		1401.50	*	1.55	7.69E+02		1.80E+02
		1407.98	*	2.80	7.60E+02		1.02E+02
		1415.80		0.48	-2.37E+03		9.60E+02
		1509.23	*	2.12	9.15E+02		1.43E+02
		1583.22	*	0.70	8.29E+02		3.36E+02
		1661.28	*	1.14	7.48E+02		2.35E+02
		1729.59	*	2.88	8.52E+02		7.26E+01
		1764.49	*	15.36	8.88E+02		1.38E+01
		1847.42	*	2.04	7.69E+02		1.32E+02
+	PB-214	53.23		1.11	-1.04E+02	9.42E+00	2.53E+02
		241.98	*	7.50	6.25E+02		4.76E+01
		258.79	*	0.55	8.05E+02		4.70E+02
		295.21	*	18.50	8.74E+02		1.37E+01
		351.92	*	35.80	9.18E+02		9.42E+00
		785.91	*	0.85	9.83E+02		4.10E+02
		839.03	*	0.63	6.31E+01		4.78E+02
+	RN-219	130.59		0.12	-2.14E+02	2.44E+01	2.88E+03
		271.23	*	10.80	1.72E+02		2.44E+01
		401.81	*	6.37	1.67E+02		3.73E+01
	RN-220	549.73		0.11	-1.10E+03	2.92E+03	2.92E+03
+	RA-223	122.32		1.19	-4.62E+01	1.90E+01	2.80E+02
		144.23	*	3.22	5.18E+02		1.04E+02
		154.21	*	5.62	1.89E+02		5.43E+01
		158.63		0.69	-5.61E+02		5.46E+02
		179.54		0.15	-7.63E+03		2.44E+03
		269.46	*	13.70	1.61E+02		1.90E+01
		288.18		0.16	-7.23E+04		2.23E+03
		323.87	*	3.93	7.77E+01		6.34E+01
		328.40		0.21	-6.83E+02		1.76E+03
		338.28	*	2.79	1.06E+02		8.16E+01
		342.90		0.22	-8.37E+03		1.58E+03
		346.80		0.18	-5.28E+04		1.92E+03
		371.68		0.48	7.49E+01		6.72E+02
	RA-224	240.99		3.97	1.26E+03	1.34E+02	1.34E+02
	RA-226	186.10	*	3.50	1.09E+03	1.06E+02	1.06E+02

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TH-227	50.13	*	8.00	-4.04E+01	2.75E+01	2.75E+01
		79.72		1.89	-2.99E+02		2.05E+02
		93.93	*	1.37	-3.56E+02		2.16E+02
		210.65		1.10	4.35E+01		3.29E+02
		235.97	*	12.70	-1.31E+02		3.35E+01
		256.25	*	7.01	1.71E+02		3.96E+01
		286.12		1.54	-5.74E+02		2.37E+02
		300.00	*	2.67	2.79E+02		9.81E+01
		304.51		1.23	-5.29E+03		3.00E+02
		329.85	*	2.69	6.38E+01		1.01E+02
		334.38		1.05	-1.46E+02		3.33E+02
	AC-228	99.50		1.28	-7.79E+01	1.64E+01	2.14E+02
		129.07		2.45	-9.67E+00		1.40E+02
		153.98		0.74	-1.20E+02		5.46E+02
		209.25		3.88	1.46E+01		9.38E+01
		270.24		3.43	-1.24E+02		1.43E+02
		327.90		3.06	-4.68E+01		1.24E+02
		332.37		0.40	-3.82E+02		9.19E+02
		338.32		11.25	-4.00E+00		3.18E+01
		409.46		1.94	-1.31E+02		2.10E+02
		463.01		4.44	-1.29E+01		7.53E+01
		508.96		0.47	-6.96E+01		8.13E+02
		562.50		0.87	-6.17E+01		3.74E+02
		755.32		1.00	1.90E+02		3.55E+02
		772.29		1.50	-2.83E+02		4.18E+02
		782.14		0.50	-2.74E+02		8.08E+02
		794.95		4.34	-6.83E+01		8.04E+01
		830.49		0.55	-2.90E+02		7.84E+02
		835.71		1.68	4.62E+02		2.67E+02
		840.38		0.94	-1.82E+02		4.29E+02
		904.20		0.78	-1.00E+01		5.63E+02
		911.21		26.60	5.01E+00		1.64E+01
		964.77		5.11	7.16E+01		8.40E+01
		968.97		16.20	-1.22E+01		2.64E+01
		1247.08		0.50	-1.07E+04		7.77E+02
		1459.14		0.80	5.63E+01		5.54E+02
		1495.91		0.89	1.04E+02		5.57E+02
		1580.54		0.61	9.26E+02		7.84E+02
		1588.21		3.27	1.22E+02		1.51E+02
		1630.63		1.60	-6.30E+00		2.26E+02
+	TH-228	84.37	*	1.23	8.37E+02	2.22E+02	2.22E+02
		215.99		0.26	-5.50E+02		1.34E+03
	TH-229	75.09		0.61	6.57E+03	8.40E+01	7.41E+02
		86.35		3.90	4.51E+02		9.54E+01
		124.60		1.43	1.86E+01		2.36E+02
		136.99		1.18	-8.40E+02		3.03E+02
		148.15		0.88	-1.14E+03		4.27E+02
		154.34		0.77	1.49E+03		5.25E+02
		156.41		1.19	-1.07E+02		3.41E+02
		193.51		4.41	-5.53E+02		8.40E+01
		204.69		0.60	-4.22E+01		6.12E+02
		210.85		2.77	1.73E+01		1.31E+02

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PA-231	283.69	*	1.70	-9.94E+03	1.07E+02	5.03E+02
		300.07	*	2.46	3.02E+02		1.07E+02
		302.65	*	2.20	2.05E+02		1.11E+02
		330.06	*	1.40	1.23E+02		1.93E+02
+	TH-231	81.23	*	0.89	3.83E+02	4.13E+01	3.19E+02
		84.21	*	6.60	1.56E+02		4.13E+01
		89.95	*	0.94	1.45E+02		2.67E+02
	TH-232	63.81		0.27	-3.10E+03	1.15E+03	1.15E+03
	U-232	57.78		0.20	-1.54E+03	1.41E+03	1.41E+03
		129.08		0.07	-3.44E+02		4.98E+03
	PA-233	75.35		1.39	2.88E+03	8.66E+00	3.25E+02
		86.81		1.97	3.02E+02		1.78E+02
		103.97		0.87	-2.69E+02		3.00E+02
		271.48		0.33	-8.62E+02		1.51E+03
		300.34		6.62	-1.52E+03		6.12E+01
		312.17		38.60	-2.56E+00		8.66E+00
		340.81		4.47	-1.28E+01		8.08E+01
		375.45		0.68	1.77E+02		4.81E+02
		398.62		1.39	-5.95E+02		2.71E+02
		415.76		1.75	-4.75E+01		2.18E+02
	U-233	42.44		0.09	-9.13E+03	3.49E+03	3.49E+03
		54.70		0.02	-4.77E+03		1.57E+04
		97.13		0.02	-9.69E+02		1.42E+04
	PA-234	62.70		1.55	-7.97E+02	1.93E+01	1.98E+02
		99.86		3.19	-5.28E+01		8.56E+01
		125.46		0.78	1.90E+01		4.33E+02
		131.30		18.00	3.03E+00		1.93E+01
		140.50		0.81	-6.84E+02		4.55E+02
		152.71		5.97	-4.29E+01		6.78E+01
		159.48		0.65	-7.30E+02		5.79E+02
		170.85		0.50	3.84E+01		7.35E+02
		186.15		1.76	2.14E+03		2.66E+02
		193.73		0.49	-4.83E+03		7.57E+02
		200.97		0.90	1.35E+02		4.12E+02
		203.12		1.23	3.23E+01		3.01E+02
		227.00		9.99	-1.35E+01		3.46E+01
		245.37		0.75	-1.70E+03		6.51E+02
		249.22		2.47	-1.66E+03		1.35E+02
		272.28		1.08	-4.65E+02		4.64E+02
		293.79		2.99	5.07E+03		2.56E+02
		330.40		0.77	-1.84E+02		4.68E+02
		369.50		2.47	-9.77E-01		1.30E+02
		372.00		1.21	9.68E+01		2.69E+02
		458.68		1.13	2.02E+02		3.04E+02
		506.75		1.29	-6.53E+01		2.73E+02
		513.40		1.10	-8.98E+01		3.50E+02
		521.40		0.74	-6.55E+02		4.27E+02
		565.20		1.03	-1.08E+02		3.17E+02
		569.32		11.80	1.06E+01		2.85E+01
		602.60		0.54	-6.36E+04		6.28E+02
		663.90		0.54	-1.01E+03		7.49E+02
		666.50		1.16	1.13E+03		3.49E+02

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PA-234	669.70		0.99	-2.79E+02	1.93E+01	4.06E+02
		692.60		1.24	-8.19E+01		2.46E+02
		699.03		3.61	-7.41E+01		9.43E+01
		705.90		2.27	-4.95E+01		1.60E+02
		730.90		0.63	6.05E+01		5.15E+02
		733.39		6.90	-1.58E+01		4.69E+01
		738.00		1.15	1.42E+01		2.91E+02
		742.81		2.06	1.06E+02		1.68E+02
		755.00		1.22	1.62E+02		2.90E+02
		780.40		0.90	-2.56E+02		3.94E+02
		786.27		1.19	7.11E+02		3.49E+02
		794.90		1.34	-2.21E+02		2.61E+02
		796.10		2.58	-1.73E+02		1.36E+02
		805.52		3.14	3.03E+02		1.42E+02
		819.20		1.88	-1.20E+01		2.02E+02
		824.65		3.12	-1.29E+02		1.25E+02
		831.50		4.12	3.55E+01		1.04E+02
		876.00		2.52	3.90E+01		1.70E+02
		880.50		10.40	6.55E+00		4.13E+01
		883.24		9.58	-1.05E+00		4.45E+01
		898.67		3.24	1.09E+01		1.35E+02
		926.00		16.80	-1.90E+02		2.42E+01
		946.18		15.00	-3.71E+01		2.56E+01
		980.48		5.15	1.04E+00		7.69E+01
		984.20		1.62	-4.14E+01		2.43E+02
		1028.70		0.57	-5.70E+01		6.70E+02
		1083.20		0.50	1.32E+02		8.18E+02
		1352.90		1.15	-9.90E+01		3.24E+02
		1393.90		2.06	-6.22E+02		1.93E+02
		1668.40		0.76	-1.04E+03		5.26E+02
		1693.80		0.69	4.05E+01		4.75E+02
	PA-234M	766.36		0.29	-3.12E+03	4.68E+02	2.14E+03
		811.00		0.51	-1.33E+03		8.87E+02
		1001.03		0.84	-4.14E+01		4.68E+02
	TH-234	63.29		4.84	-2.13E+02	5.21E+01	6.38E+01
		83.30		0.08	-2.99E+03		4.80E+03
		92.59		5.58	-1.41E+02		5.21E+01
		112.81		0.28	5.90E+02		9.80E+02
	U-234	53.20		0.12	-9.35E+02	2.28E+03	2.28E+03
		120.90		0.03	8.87E+01		9.80E+03
+	U-235	109.16		1.54	-5.69E+01	6.49E+00	1.72E+02
		143.76	*	10.96	1.52E+02		3.06E+01
		163.36		5.08	-5.27E+01		7.26E+01
		185.71	*	57.20	6.66E+01		6.49E+00
		194.94		0.63	-1.96E+03		5.87E+02
		202.11		1.08	6.53E+01		3.42E+02
		205.31		5.01	-9.99E+00		7.31E+01
+	NP-237	57.10		0.39	-1.01E+03	2.27E+01	7.19E+02
		86.48	*	12.40	5.46E+01		2.27E+01
		94.64	*	0.60	-8.13E+02		4.93E+02
		143.25	*	0.43	3.88E+03		7.79E+02
	NP-239	106.12		27.20	-9.35E+07	1.14E+08	1.14E+08

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	NP-239	209.75		3.42	2.72E+08	1.14E+08	1.26E+09
		228.18		10.76	-1.17E+09		3.80E+08
		277.60		14.38	-1.93E+09		2.98E+08
		334.31		2.07	-8.80E+08		2.01E+09
	AM-241	59.54		35.90	-6.61E+00	8.00E+00	8.00E+00
	CM-241	132.41		3.90	4.42E+01	1.49E+01	2.88E+02
		165.01		3.40	-8.93E+01		3.51E+02
		205.88		2.67	-9.20E+01		4.41E+02
		430.63		4.06	-7.78E+01		2.97E+02
		463.27		1.23	-1.50E+02		8.76E+02
		471.80		71.30	1.76E-01		1.49E+01
		636.88		1.53	3.67E+02		6.47E+02
+	AM-243	74.66	*	68.20	1.69E+01	4.49E+00	4.49E+00

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

NUCLIDE MDA REPORT

Nuclide Library Used : \\NHHJ-6\ApexRoot\Default\Library\SWRILIB.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.60	10.42	6.98E+01	6.98E+01	-2.51E+01	3.46E+01
	NA-22	1274.53	99.94	4.19E+00	4.19E+00	-7.78E+00	2.06E+00
@	NA-24	1368.63	100.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
>@		2754.03	99.94	0.00E+00		0.00E+00	0.00E+00
	K-40	1460.83	10.67	4.22E+01	4.22E+01	7.27E+00	2.08E+01
@	AR-41	1293.59	99.10	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	CR-51	320.08	9.86	1.37E+02	1.37E+02	-1.66E+02	6.81E+01
	MN-54	834.85	99.98	5.02E+00	5.02E+00	7.22E+00	2.48E+00
	CO-56	846.77	99.93	6.17E+00	1.94E+00	-4.92E+00	3.05E+00
		977.37	1.44	4.47E+02		-1.54E+02	2.21E+02
		1037.84	13.99	4.52E+01		1.25E+01	2.23E+01
		1175.10	2.28	2.84E+02		-1.66E+02	1.40E+02
		1238.28	67.56	1.94E+01		1.26E+02	9.61E+00
		1360.21	4.33	1.45E+02		-4.97E+00	7.12E+01
		1771.35	15.69	1.31E+02		-1.00E+03	6.51E+01
		2015.18	3.08	4.93E+00		0.00E+00	0.00E+00
		2034.76	7.89	1.94E+00		0.00E+00	0.00E+00
@	MN-56	846.75	98.87	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		1810.72	27.19	1.00E+26		1.00E+26	1.00E+20
>@		2113.05	14.34	0.00E+00		0.00E+00	0.00E+00
	CO-57	122.06	85.60	4.48E+00	4.48E+00	-7.39E-01	2.23E+00
		136.47	10.68	3.84E+01		-7.77E+01	1.92E+01

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CO-57	692.41	0.16	2.23E+03	4.48E+00	-7.44E+02	1.10E+03
CO-58	810.78	99.45	7.82E+00	7.82E+00	-1.17E+01	3.87E+00
	863.96	0.68	1.02E+03		-1.28E+02	5.06E+02
	1674.73	0.52	9.19E+02		-2.79E+03	4.46E+02
FE-59	142.65	1.02	9.51E+02	1.69E+01	-5.31E+02	4.74E+02
	192.35	3.08	2.85E+02		-1.91E+03	1.42E+02
	1099.25	56.50	1.69E+01		-4.36E+00	8.31E+00
	1291.60	43.20	2.07E+01		-5.36E+01	1.02E+01
CO-60	1173.24	99.90	3.99E+00	3.95E+00	-3.73E+00	1.96E+00
	1332.50	99.98	3.95E+00		9.54E-01	1.94E+00
@ CU-64	1345.77	0.47	1.00E+26	1.00E+26	1.00E+26	1.00E+20
ZN-65	1115.55	50.60	2.49E+01	2.49E+01	-2.04E+02	1.24E+01
SE-75	66.05	1.12	4.58E+02	7.60E+00	2.30E+03	2.28E+02
	96.73	3.42	1.18E+02		6.51E+00	5.88E+01
	121.12	17.14	2.68E+01		-1.95E+00	1.33E+01
	136.00	58.27	8.39E+00		-8.04E+00	4.18E+00
	198.61	1.47	3.47E+02		2.18E+01	1.73E+02
	264.66	58.50	7.60E+00		-5.35E+01	3.78E+00
	279.54	24.79	1.94E+01		-5.36E+01	9.65E+00
	303.93	1.31	4.02E+02		-1.02E+04	2.00E+02
	400.66	11.37	5.10E+01		-7.56E+01	2.54E+01
RB-83	520.39	44.70	1.10E+01	1.10E+01	-2.18E+01	5.45E+00
	529.59	29.30	1.73E+01		2.03E+00	8.58E+00
	552.59	15.96	3.17E+01		-5.61E+00	1.57E+01
@ BR-84	881.60	42.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1897.60	14.90	1.00E+26		1.00E+26	1.00E+20
KR-85	514.01	0.43	8.93E+02	8.93E+02	-4.23E+02	4.43E+02
@ KR-85M	151.20	75.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	304.87	14.00	1.00E+26		1.00E+26	1.00E+20
SR-85	514.01	95.70	7.18E+00	7.18E+00	-3.40E+00	3.56E+00
@ SR-85m	151.19	12.90	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	231.86	84.40	1.00E+26		1.00E+26	1.00E+20
RB-86	1077.00	8.64	3.58E+02	3.58E+02	-1.58E+02	1.76E+02
@ KR-87	402.59	49.60	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	673.83	1.89	1.00E+26		1.00E+26	1.00E+20
@	845.44	7.30	1.00E+26		1.00E+26	1.00E+20
@	1175.40	1.11	1.00E+26		1.00E+26	1.00E+20
@	1740.52	2.04	1.00E+26		1.00E+26	1.00E+20
@ KR-88	165.98	3.10	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	196.30	26.00	1.00E+26		1.00E+26	1.00E+20
@	362.23	2.25	1.00E+26		1.00E+26	1.00E+20
@	834.83	13.00	1.00E+26		1.00E+26	1.00E+20
@	985.78	1.52	1.00E+26		1.00E+26	1.00E+20
@	1141.33	1.28	1.00E+26		1.00E+26	1.00E+20
@	1179.51	1.00	1.00E+26		1.00E+26	1.00E+20
@	1250.67	1.12	1.00E+26		1.00E+26	1.00E+20
@	1369.50	1.48	1.00E+26		1.00E+26	1.00E+20
@	1518.39	2.15	1.00E+26		1.00E+26	1.00E+20
@	1529.77	10.90	1.00E+26		1.00E+26	1.00E+20
@ RB-88	898.03	14.04	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1836.01	21.40	1.00E+26		1.00E+26	1.00E+20
Y-88	898.04	93.68	6.66E+00	4.58E+00	7.07E-01	3.29E+00
	1836.06	99.24	4.58E+00		-1.21E+01	2.23E+00

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
NB-94x	702.62		97.90	3.69E+00	3.69E+00	-1.02E+00	1.82E+00
	871.09		99.90	4.23E+00		5.52E-01	2.09E+00
NB-95	765.81		99.81	1.89E+01	1.89E+01	-3.19E+01	9.38E+00
NB-95m	204.12		2.33	6.55E+06	7.11E+05	1.03E+06	3.26E+06
	235.69	*	24.80	7.11E+05		-2.77E+06	3.54E+05
ZR-95	724.20		44.17	1.42E+01	1.19E+01	-6.79E+00	7.01E+00
	756.73		54.46	1.19E+01		2.81E+00	5.87E+00
NB-96	460.04		26.62	1.69E+18	4.69E+17	3.33E+17	8.36E+17
	568.87		57.97	7.68E+17		1.36E+17	3.80E+17
	778.22		96.45	4.69E+17		-1.68E+18	2.31E+17
	849.93		20.40	2.47E+18		-1.02E+18	1.22E+18
	1200.23		19.96	2.46E+18		-2.37E+18	1.21E+18
MO-99	140.51		4.52	9.45E+07	3.29E+07	-1.42E+08	4.71E+07
	181.06		6.08	7.05E+07		-1.26E+08	3.51E+07
	366.42		1.20	3.06E+08		-9.03E+07	1.52E+08
	739.50		12.13	3.29E+07		2.16E+07	1.62E+07
	777.92		4.28	9.19E+07		-3.30E+08	4.53E+07
@ TC-99M	140.51		89.06	1.00E+26	1.00E+26	1.00E+26	1.00E+20
RU-103	443.80		3.27	2.77E+02	9.36E+00	1.36E+02	1.37E+02
	497.08		90.90	9.36E+00		-7.87E+00	4.63E+00
	610.33		5.75	6.72E+02		1.78E+04	3.35E+02
RHRU-106	621.93		9.93	3.26E+01	3.26E+01	-1.55E+01	1.61E+01
	1050.41		1.56	2.81E+02		1.07E+02	1.39E+02
AG-108M	433.94		90.50	3.82E+00	3.80E+00	-2.84E+00	1.89E+00
	614.28		89.90	1.44E+01		-2.35E+02	7.19E+00
	722.94		90.90	3.80E+00		-1.59E+00	1.88E+00
CD-109	88.03	*	3.61	8.48E+01	8.48E+01	2.04E+02	4.22E+01
AG-110M	116.48		1.36	2.83E+02	3.76E+00	3.36E+01	1.41E+02
	446.81		3.72	1.06E+02		1.02E+01	5.27E+01
	620.36		2.79	1.26E+02		-2.83E+03	6.24E+01
	657.76		94.00	3.76E+00		-1.38E+01	1.85E+00
	677.62		10.28	3.39E+01		-9.81E+00	1.67E+01
	687.02		6.39	5.52E+01		-3.55E+00	2.72E+01
	706.68		16.32	2.61E+01		-7.57E+00	1.29E+01
	744.28		4.70	8.56E+01		4.23E+01	4.23E+01
	763.94		22.14	2.93E+01		-8.56E+01	1.45E+01
	818.03		7.29	6.12E+01		-5.22E+00	3.02E+01
	884.68		72.19	6.86E+00		-1.56E+00	3.39E+00
	937.49		34.13	2.07E+01		9.89E+01	1.03E+01
	1384.30		24.12	3.30E+01		7.06E+01	1.63E+01
	1475.79		3.97	1.30E+02		-2.65E+01	6.39E+01
	1505.04		12.95	6.06E+01		-1.50E+02	2.99E+01
	1562.30		1.02	4.82E+02		-5.66E+01	2.37E+02
SN-113	255.06		1.82	3.00E+02	7.64E+00	1.04E+03	1.49E+02
	391.69		64.00	7.64E+00		-3.83E+00	3.79E+00
IN-114	190.27		15.40	5.45E+01	5.45E+01	-2.30E+02	2.71E+01
	558.43		4.40	1.62E+02		2.71E+01	7.99E+01
	725.24		4.40	1.64E+02		-1.05E+02	8.12E+01
SB-122	564.24		69.30	6.98E+06	6.98E+06	-2.29E+06	3.46E+06
I-124	602.72		60.50	5.43E+04	5.43E+04	-5.50E+06	2.69E+04
	722.78		9.98	3.34E+05		-1.52E+05	1.65E+05
	1509.49		2.99	2.18E+06		6.26E+06	1.08E+06
	1691.02		10.40	3.28E+05		3.70E+05	1.60E+05

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	SB-124	602.73		97.80	6.56E+00	6.56E+00	-6.64E+02	3.25E+00
		645.85		7.38	7.46E+01		-1.71E+01	3.68E+01
		709.32		1.35	4.74E+02		-2.75E+02	2.34E+02
		713.78		2.27	2.70E+02		-3.15E+02	1.33E+02
		722.79		10.76	6.05E+01		-2.76E+01	2.99E+01
		968.20		1.89	4.28E+02		-2.14E+02	2.11E+02
		1045.13		1.84	3.90E+02		-2.12E+02	1.92E+02
		1325.51		1.62	4.35E+02		-2.20E+02	2.14E+02
		1355.18		1.04	6.86E+02		-7.84E+01	3.37E+02
		1368.16		2.62	2.80E+02		-1.88E+03	1.37E+02
		1436.56		1.23	6.45E+02		9.86E+01	3.17E+02
		1690.98		47.30	1.41E+01		1.59E+01	6.89E+00
	I-125	30.98		20.10	4.28E+01	4.28E+01	1.97E+02	2.13E+01
		35.49		6.68	1.19E+02		6.18E+00	5.90E+01
+	SB-125	176.31		6.82	5.56E+01	9.68E+00	-1.75E+01	2.77E+01
		380.45		1.52	2.21E+02		-1.73E+02	1.10E+02
		427.88	*	29.60	9.68E+00		1.11E+01	4.79E+00
		463.36		10.49	3.31E+01		-5.69E+00	1.64E+01
		600.60		17.86	2.00E+01		-1.71E+03	9.89E+00
		606.72		5.03	2.99E+02		-3.97E+03	1.49E+02
		635.95		11.31	2.82E+01		1.46E+01	1.39E+01
		671.45		1.80	1.81E+02		-2.65E+02	8.94E+01
	@ XE-125	188.42		54.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	243.38		30.10	1.00E+26		1.00E+26	1.00E+20
+	I-126	388.63	*	34.10	1.45E+02	1.45E+02	2.36E+02	7.20E+01
	SB-126	414.80		83.30	9.89E+01	6.81E+01	-8.46E+01	4.91E+01
		666.30		99.60	8.86E+01		-6.18E+01	4.39E+01
		695.00		99.60	6.81E+01		-6.72E+01	3.36E+01
		697.00		28.90	2.36E+02		-2.64E+02	1.17E+02
		720.50		53.80	1.39E+02		9.58E+01	6.88E+01
		856.70		17.60	4.92E+02		-3.05E+01	2.43E+02
	I-129	39.58		7.45	4.35E+01	4.35E+01	-9.84E+01	2.16E+01
	@ I-130	418.01		34.15	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	536.09		99.00	1.00E+26		1.00E+26	1.00E+20
	@	668.54		96.10	1.00E+26		1.00E+26	1.00E+20
	@	739.48		82.30	1.00E+26		1.00E+26	1.00E+20
	@	1157.47		11.30	1.00E+26		1.00E+26	1.00E+20
	I-131	284.30	*	6.14	1.66E+04	4.63E+02	-3.29E+05	8.30E+03
		364.49		81.70	4.63E+02		-9.20E+01	2.30E+02
		636.99		7.17	5.11E+03		2.80E+03	2.52E+03
		722.91		1.77	2.33E+04		-9.79E+03	1.15E+04
	XE-131M	163.93		1.91	4.93E+03	4.93E+03	-2.42E+03	2.46E+03
	TE-132	111.76		1.74	2.54E+07	6.29E+05	1.82E+07	1.26E+07
		116.30		1.96	2.71E+07		3.22E+06	1.35E+07
		228.16		88.00	6.29E+05		-1.95E+06	3.13E+05
+	BA-133	53.16		2.20	1.29E+02	8.41E+00	-5.28E+01	6.42E+01
		79.62		2.62	1.49E+02		-2.18E+02	7.43E+01
		81.00	*	34.06	8.41E+00		1.01E+01	4.19E+00
		160.61		0.64	5.87E+02		-9.76E+02	2.93E+02
		223.23		0.45	7.86E+02		1.08E+02	3.91E+02
		276.40		7.16	5.19E+01		-3.29E+02	2.58E+01
		302.85	*	18.33	1.34E+01		2.49E+01	6.65E+00
		356.02		62.05	1.16E+01		-2.12E+02	5.79E+00

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BA-133	383.85	8.94	3.74E+01	8.41E+00	-2.93E+01	1.86E+01
I-133	529.87	87.00	6.26E+19	6.26E+19	7.35E+18	3.10E+19
	875.33	4.51	1.59E+21		2.96E+20	7.84E+20
CS-134	475.35	1.47	2.31E+02	4.33E+00	-1.51E+02	1.14E+02
	563.23	8.38	4.08E+01		-1.47E+01	2.02E+01
	569.32	15.43	2.29E+01		8.51E+00	1.13E+01
	604.70	97.56	8.04E+00		-2.89E+02	4.00E+00
	795.84	85.44	4.33E+00		-5.49E+00	2.14E+00
	801.93	8.73	5.13E+01		-4.79E+01	2.54E+01
	1038.57	1.00	4.03E+02		8.42E+01	1.99E+02
	1167.94	1.80	2.31E+02		-1.39E+02	1.14E+02
	1365.15	3.04	1.34E+02		1.56E+01	6.60E+01
@ I-134	405.45	7.35	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	540.83	7.60	1.00E+26		1.00E+26	1.00E+20
@	595.36	11.20	1.00E+26		1.00E+26	1.00E+20
@	621.79	10.60	1.00E+26		1.00E+26	1.00E+20
@	677.34	7.80	1.00E+26		1.00E+26	1.00E+20
@	847.03	95.40	1.00E+26		1.00E+26	1.00E+20
@	884.09	64.90	1.00E+26		1.00E+26	1.00E+20
@	1072.55	15.00	1.00E+26		1.00E+26	1.00E+20
@	1136.16	9.20	1.00E+26		1.00E+26	1.00E+20
CS-135	787.20	100.00	4.16E+00	3.95E+00	8.78E+00	2.06E+00
	846.10	95.90	3.95E+00		-2.72E+00	1.95E+00
@ I-135	417.63	3.55	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	546.56	7.20	1.00E+26		1.00E+26	1.00E+20
@	836.80	6.73	1.00E+26		1.00E+26	1.00E+20
@	1038.76	8.00	1.00E+26		1.00E+26	1.00E+20
@	1124.00	3.64	1.00E+26		1.00E+26	1.00E+20
@	1131.51	22.74	1.00E+26		1.00E+26	1.00E+20
@	1260.41	28.90	1.00E+26		1.00E+26	1.00E+20
@	1457.56	8.73	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.62	1.00E+26		1.00E+26	1.00E+20
@	1706.46	4.13	1.00E+26		1.00E+26	1.00E+20
@	1791.20	7.77	1.00E+26		1.00E+26	1.00E+20
@ XE-135	249.79	90.20	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	608.18	2.90	1.00E+26		1.00E+26	1.00E+20
@ XE-135M	526.56	80.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
CS-136	66.88	4.80	1.59E+03	7.08E+01	1.62E+04	7.93E+02
	86.36	5.20	1.32E+03		6.24E+03	6.58E+02
	153.25	5.77	1.29E+03		-4.36E+02	6.44E+02
	163.92	3.40	2.00E+03		-9.81E+02	9.97E+02
	176.60	10.00	6.72E+02		-3.11E+02	3.35E+02
	273.65	11.10	7.65E+02		-1.86E+03	3.81E+02
	340.55	42.30	1.57E+02		-2.49E+01	7.82E+01
	818.51	100.00	7.08E+01		1.22E+01	3.50E+01
	1048.07	80.00	9.12E+01		3.46E+01	4.50E+01
	1235.36	20.10	7.32E+02		-1.88E+03	3.63E+02
CS-137	661.66	85.10	4.43E+00	4.43E+00	-9.70E+00	2.19E+00
@ CS-138	138.10	1.49	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	227.76	1.51	1.00E+26		1.00E+26	1.00E+20
@	408.98	4.66	1.00E+26		1.00E+26	1.00E+20
@	462.80	30.70	1.00E+26		1.00E+26	1.00E+20
@	547.00	10.76	1.00E+26		1.00E+26	1.00E+20

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
@ CS-138	871.80	5.11	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1009.78	29.80	1.00E+26		1.00E+26	1.00E+20
@	1147.22	1.24	1.00E+26		1.00E+26	1.00E+20
@	1343.59	1.14	1.00E+26		1.00E+26	1.00E+20
@	1435.86	76.30	1.00E+26		1.00E+26	1.00E+20
LA-138	788.74	33.60	1.24E+01	6.28E+00	-2.70E+00	6.13E+00
	1435.80	66.40	6.28E+00		1.43E-01	3.09E+00
@ BA-139	165.86	23.60	1.00E+26	1.00E+26	1.00E+26	1.00E+20
CE-139	165.85	79.90	6.12E+00	6.12E+00	-1.17E+00	3.05E+00
BA-140	162.66	6.21	1.21E+03	2.76E+02	-1.51E+03	6.01E+02
	304.85	4.30	1.69E+03		-1.17E+04	8.39E+02
	423.72	3.10	2.59E+03		2.69E+01	1.29E+03
	437.58	1.93	3.53E+03		-2.70E+03	1.75E+03
	537.26	24.39	2.76E+02		9.69E+01	1.37E+02
LA-140	328.76	20.32	1.47E+11	4.01E+10	-5.84E+10	7.30E+10
	432.49	2.90	9.96E+11		-5.64E+11	4.94E+11
	487.02	45.50	6.42E+10		2.80E+10	3.18E+10
	751.64	4.33	6.62E+11		-4.13E+11	3.27E+11
	815.77	23.30	1.32E+11		-3.33E+11	6.52E+10
	867.85	5.50	6.21E+11		-1.39E+11	3.07E+11
	919.55	2.66	1.26E+12		-1.03E+12	6.22E+11
	925.19	6.90	4.84E+11		-3.53E+12	2.39E+11
	1596.21	95.40	4.01E+10		4.18E+09	1.97E+10
CE-141	145.44	48.20	2.78E+01	2.78E+01	-1.25E+01	1.39E+01
CE-144	80.12	1.36	2.95E+02	3.61E+01	-2.48E+03	1.47E+02
	133.51	11.09	3.61E+01		-6.65E+00	1.80E+01
PM-144	476.78	41.98	8.71E+00	3.40E+00	-4.20E+00	4.31E+00
	618.01	98.59	3.40E+00		-4.15E+02	1.68E+00
	694.00	0.55	6.26E+02		-4.12E+02	3.09E+02
	696.49	99.49	3.51E+00		-4.19E+00	1.73E+00
	778.57	1.51	2.52E+02		-8.97E+02	1.24E+02
	814.14	0.55	7.50E+02		-2.25E+03	3.70E+02
PM-146	146.20	0.22	1.91E+03	5.23E+00	-2.11E+03	9.51E+02
	453.88	66.00	5.23E+00		-8.12E-01	2.59E+00
	589.80	0.43	7.62E+02		-9.20E+02	3.77E+02
	633.25	1.12	2.78E+02		6.17E+01	1.37E+02
	735.93	22.80	1.46E+01		-8.78E+00	7.18E+00
	747.24	17.71	1.95E+01		6.29E-01	9.61E+00
ND-147	91.11	27.90	3.45E+02	3.45E+02	-1.69E+03	1.72E+02
	319.41	1.95	5.62E+03		-6.70E+03	2.79E+03
	398.15	0.87	1.35E+04		-3.55E+04	6.71E+03
	439.89	1.20	9.09E+03		-5.92E+03	4.51E+03
	531.02	13.09	8.24E+02		1.81E+02	4.08E+02
EU-152	121.78	28.42	1.18E+01	1.18E+01	-2.11E+00	5.88E+00
	244.70	7.49	7.00E+01		-1.28E+02	3.49E+01
	295.94	0.44	1.76E+03		3.48E+04	8.77E+02
	344.28	26.58	1.29E+01		-5.53E+02	6.41E+00
	411.12	2.23	1.71E+02		-1.95E+02	8.50E+01
	443.98	3.09	1.11E+02		6.20E+01	5.52E+01
	688.67	0.83	3.65E+02		-1.21E+02	1.80E+02
	778.90	12.96	2.65E+01		-9.48E+01	1.31E+01
	867.39	4.15	1.00E+02		-1.11E+01	4.97E+01
	964.13	14.50	2.99E+01		2.43E+01	1.48E+01

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-152	1005.28		0.65	6.11E+02	1.18E+01	1.34E+02	3.01E+02
	1085.87		10.16	4.04E+01		1.17E+01	1.99E+01
	1089.70		1.71	2.39E+02		2.87E+01	1.18E+02
	1112.12		13.54	3.06E+01		-9.60E+02	1.51E+01
	1212.95		1.40	3.13E+02		-1.71E+02	1.54E+02
	1299.12		1.63	2.33E+02		-1.09E+01	1.14E+02
	1408.01		20.87	3.34E+01		1.34E+02	1.65E+01
GD-153	69.67		2.54	1.81E+02	1.10E+01	-3.56E+02	9.04E+01
	97.43		30.20	1.10E+01		-7.52E-01	5.48E+00
	103.18		21.44	1.42E+01		-1.37E+01	7.08E+00
EU-154	123.07		40.78	8.31E+00	8.31E+00	-3.26E-01	4.14E+00
	247.93		6.95	4.88E+01		-4.34E+02	2.43E+01
	444.49		0.56	6.15E+02		3.15E+02	3.05E+02
	582.10		0.89	4.00E+02		3.14E+02	1.98E+02
	591.76		4.99	6.53E+01		-4.65E+01	3.23E+01
	692.42		1.80	1.71E+02		-5.71E+01	8.45E+01
	723.30		20.22	1.73E+01		-7.26E+00	8.55E+00
	756.80		4.57	7.88E+01		1.86E+01	3.89E+01
	815.53		0.52	7.20E+02		-1.94E+03	3.56E+02
	845.39		0.59	6.58E+02		-4.40E+02	3.25E+02
	873.19		12.27	3.53E+01		1.42E+01	1.74E+01
	892.78		0.52	8.38E+02		-3.54E+01	4.14E+02
	904.08		0.90	4.94E+02		-8.79E+00	2.44E+02
	996.26		10.59	3.72E+01		-7.72E+00	1.84E+01
	1004.72		18.00	2.22E+01		5.51E+00	1.09E+01
	1246.15		0.87	5.24E+02		-5.74E+03	2.58E+02
	1274.44		35.19	1.16E+01		-2.15E+01	5.69E+00
	1494.05		0.70	7.19E+02		2.41E+02	3.54E+02
	1596.49		1.80	2.59E+02		1.01E+02	1.27E+02
EU-155	45.30		1.32	2.62E+02	9.39E+00	9.29E+02	1.30E+02
	60.01		1.13	2.61E+02		-2.32E+02	1.30E+02
	86.54	*	30.70	9.39E+00		2.26E+01	4.67E+00
	105.31		21.15	1.27E+01		-9.41E+00	6.30E+00
W-187	72.00		11.10	2.01E+18	7.95E+17	-4.95E+18	9.99E+17
	134.25		8.80	2.87E+18		-1.08E+18	1.43E+18
	479.55		21.80	1.16E+18		-2.49E+17	5.76E+17
	618.26		6.28	3.45E+18		-4.22E+20	1.71E+18
	625.52		1.09	1.93E+19		-1.37E+19	9.51E+18
	685.73		27.30	7.95E+17		4.16E+15	3.92E+17
	772.89		4.12	1.08E+19		-9.31E+18	5.36E+18
IR-192	295.96		28.66	4.51E+01	6.91E+00	8.91E+02	2.25E+01
	308.46		30.00	1.85E+01		-2.20E+01	9.18E+00
	316.51		82.81	6.91E+00		-1.93E+00	3.43E+00
	468.07		47.83	1.15E+01		-3.65E+00	5.72E+00
	588.58		4.51	1.20E+02		-1.16E+02	5.96E+01
	604.41		8.23	1.52E+02		-5.48E+03	7.57E+01
	612.47		5.31	4.61E+02		-4.84E+03	2.30E+02
TL-201	135.34		2.56	4.21E+07	1.12E+07	-1.58E+07	2.10E+07
	167.43		10.00	1.12E+07		-2.17E+06	5.59E+06
HG-203	279.20		81.46	9.83E+00	9.83E+00	-3.14E+01	4.89E+00
TL-208	277.36		6.31	5.76E+01	4.16E+00	-3.71E+02	2.86E+01
	510.77		22.60	1.70E+01		4.73E+01	8.44E+00
	583.19		84.50	4.16E+00		-5.94E-01	2.06E+00

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TL-208	763.13		1.81	2.28E+02	4.16E+00	-1.08E+03	1.13E+02
		860.56		12.42	3.23E+01		-6.81E+00	1.60E+01
+	PB-210	46.54	*	4.25	6.68E+01	6.68E+01	2.53E+02	3.32E+01
	BI-211	351.06		12.91	8.53E+01	8.53E+01	2.54E+03	4.25E+01
+	PB-211	404.85	*	3.78	7.22E+01	7.22E+01	1.92E+02	3.58E+01
		427.09	*	1.76	1.57E+02		1.80E+02	7.76E+01
		704.64		0.46	7.86E+02		9.53E+02	3.89E+02
		766.51		0.62	1.02E+03		-1.48E+03	5.05E+02
		832.01	*	3.52	8.58E+01		5.43E+01	4.23E+01
	BI-212	727.33		6.58	4.86E+01	4.86E+01	-5.03E+01	2.40E+01
		785.37		1.10	3.76E+02		-4.67E+01	1.86E+02
		1078.62		0.56	6.89E+02		-6.20E+02	3.39E+02
		1620.50		1.49	2.54E+02		-2.95E+01	1.24E+02
	PB-212	115.18		0.59	4.67E+02	1.06E+01	1.54E+02	2.32E+02
		238.63		43.30	1.06E+01		1.09E+01	5.28E+00
		300.09		3.28	1.23E+02		-3.06E+03	6.14E+01
+	BI-214	609.31	*	44.80	5.54E+00	5.54E+00	8.61E+02	2.73E+00
		665.45	*	1.29	1.87E+02		9.77E+02	9.19E+01
		768.36	*	4.80	7.03E+01		9.19E+02	3.47E+01
		806.17	*	1.22	2.26E+02		8.36E+02	1.11E+02
		934.06	*	3.03	7.83E+01		8.97E+02	3.83E+01
		1120.29	*	14.80	2.14E+01		8.93E+02	1.05E+01
		1155.19	*	1.64	2.30E+02		9.13E+02	1.13E+02
		1207.68	*	0.49	5.65E+02		7.71E+02	2.76E+02
		1238.11	*	5.86	5.22E+01		9.03E+02	2.56E+01
		1280.96	*	1.44	2.23E+02		8.25E+02	1.09E+02
		1377.67	*	3.92	6.91E+01		9.46E+02	3.37E+01
		1385.31	*	0.89	3.12E+02		7.36E+02	1.52E+02
		1401.50	*	1.55	1.80E+02		7.69E+02	8.79E+01
		1407.98	*	2.80	1.02E+02		7.60E+02	4.99E+01
		1415.80		0.48	9.60E+02		-2.37E+03	4.73E+02
		1509.23	*	2.12	1.43E+02		9.15E+02	6.95E+01
		1583.22	*	0.70	3.36E+02		8.29E+02	1.63E+02
		1661.28	*	1.14	2.35E+02		7.48E+02	1.14E+02
		1729.59	*	2.88	7.26E+01		8.52E+02	3.49E+01
		1764.49	*	15.36	1.38E+01		8.88E+02	6.64E+00
		1847.42	*	2.04	1.32E+02		7.69E+02	6.40E+01
+	PB-214	53.23		1.11	2.53E+02	9.42E+00	-1.04E+02	1.26E+02
		241.98	*	7.50	4.76E+01		6.25E+02	2.37E+01
		258.79	*	0.55	4.70E+02		8.05E+02	2.33E+02
		295.21	*	18.50	1.37E+01		8.74E+02	6.79E+00
		351.92	*	35.80	9.42E+00		9.18E+02	4.68E+00
		785.91	*	0.85	4.10E+02		9.83E+02	2.03E+02
		839.03	*	0.63	4.78E+02		6.31E+01	2.35E+02
+	RN-219	130.59		0.12	2.88E+03	2.44E+01	-2.14E+02	1.43E+03
		271.23	*	10.80	2.44E+01		1.72E+02	1.21E+01
		401.81	*	6.37	3.73E+01		1.67E+02	1.84E+01
	RN-220	549.73		0.11	2.92E+03	2.92E+03	-1.10E+03	1.44E+03
+	RA-223	122.32		1.19	2.80E+02	1.90E+01	-4.62E+01	1.39E+02
		144.23	*	3.22	1.04E+02		5.18E+02	5.18E+01
		154.21	*	5.62	5.43E+01		1.89E+02	2.70E+01
		158.63		0.69	5.46E+02		-5.61E+02	2.72E+02
		179.54		0.15	2.44E+03		-7.63E+03	1.21E+03

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	RA-223	269.46	*	13.70	1.90E+01	1.90E+01	1.61E+02	9.44E+00
		288.18		0.16	2.23E+03		-7.23E+04	1.11E+03
		323.87	*	3.93	6.34E+01		7.77E+01	3.14E+01
		328.40		0.21	1.76E+03		-6.83E+02	8.73E+02
		338.28	*	2.79	8.16E+01		1.06E+02	4.04E+01
		342.90		0.22	1.58E+03		-8.37E+03	7.84E+02
		346.80		0.18	1.92E+03		-5.28E+04	9.56E+02
		371.68		0.48	6.72E+02		7.49E+01	3.34E+02
	RA-224	240.99		3.97	1.34E+02	1.34E+02	1.26E+03	6.66E+01
	RA-226	186.10	*	3.50	1.06E+02	1.06E+02	1.09E+03	5.28E+01
+	TH-227	50.13	*	8.00	2.75E+01	2.75E+01	-4.04E+01	1.37E+01
		79.72		1.89	2.05E+02		-2.99E+02	1.02E+02
		93.93	*	1.37	2.16E+02		-3.56E+02	1.08E+02
		210.65		1.10	3.29E+02		4.35E+01	1.64E+02
		235.97	*	12.70	3.35E+01		-1.31E+02	1.67E+01
		256.25	*	7.01	3.96E+01		1.71E+02	1.96E+01
		286.12		1.54	2.37E+02		-5.74E+02	1.18E+02
		300.00	*	2.67	9.81E+01		2.79E+02	4.87E+01
		304.51		1.23	3.00E+02		-5.29E+03	1.49E+02
		329.85	*	2.69	1.01E+02		6.38E+01	4.99E+01
		334.38		1.05	3.33E+02		-1.46E+02	1.65E+02
	AC-228	99.50		1.28	2.14E+02	1.64E+01	-7.79E+01	1.06E+02
		129.07		2.45	1.40E+02		-9.67E+00	6.97E+01
		153.98		0.74	5.46E+02		-1.20E+02	2.72E+02
		209.25		3.88	9.38E+01		1.46E+01	4.67E+01
		270.24		3.43	1.43E+02		-1.24E+02	7.11E+01
		327.90		3.06	1.24E+02		-4.68E+01	6.14E+01
		332.37		0.40	9.19E+02		-3.82E+02	4.56E+02
		338.32		11.25	3.18E+01		-4.00E+00	1.58E+01
		409.46		1.94	2.10E+02		-1.31E+02	1.05E+02
		463.01		4.44	7.53E+01		-1.29E+01	3.73E+01
		508.96		0.47	8.13E+02		-6.96E+01	4.03E+02
		562.50		0.87	3.74E+02		-6.17E+01	1.85E+02
		755.32		1.00	3.55E+02		1.90E+02	1.76E+02
		772.29		1.50	4.18E+02		-2.83E+02	2.08E+02
		782.14		0.50	8.08E+02		-2.74E+02	4.00E+02
		794.95		4.34	8.04E+01		-6.83E+01	3.97E+01
		830.49		0.55	7.84E+02		-2.90E+02	3.88E+02
		835.71		1.68	2.67E+02		4.62E+02	1.32E+02
		840.38		0.94	4.29E+02		-1.82E+02	2.12E+02
		904.20		0.78	5.63E+02		-1.00E+01	2.79E+02
		911.21		26.60	1.64E+01		5.01E+00	8.10E+00
		964.77		5.11	8.40E+01		7.16E+01	4.15E+01
		968.97		16.20	2.64E+01		-1.22E+01	1.30E+01
		1247.08		0.50	7.77E+02		-1.07E+04	3.82E+02
		1459.14		0.80	5.54E+02		5.63E+01	2.72E+02
		1495.91		0.89	5.57E+02		1.04E+02	2.74E+02
		1580.54		0.61	7.84E+02		9.26E+02	3.85E+02
		1588.21		3.27	1.51E+02		1.22E+02	7.44E+01
		1630.63		1.60	2.26E+02		-6.30E+00	1.10E+02
+	TH-228	84.37	*	1.23	2.22E+02	2.22E+02	8.37E+02	1.10E+02
		215.99		0.26	1.34E+03		-5.50E+02	6.69E+02
	TH-229	75.09		0.61	7.41E+02	8.40E+01	6.57E+03	3.69E+02

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TH-229	86.35		3.90	9.54E+01	8.40E+01	4.51E+02	4.75E+01
		124.60		1.43	2.36E+02		1.86E+01	1.18E+02
		136.99		1.18	3.03E+02		-8.40E+02	1.51E+02
		148.15		0.88	4.27E+02		-1.14E+03	2.13E+02
		154.34		0.77	5.25E+02		1.49E+03	2.62E+02
		156.41		1.19	3.41E+02		-1.07E+02	1.70E+02
		193.51		4.41	8.40E+01		-5.53E+02	4.18E+01
		204.69		0.60	6.12E+02		-4.22E+01	3.05E+02
		210.85		2.77	1.31E+02		1.73E+01	6.51E+01
+	PA-231	283.69	*	1.70	5.03E+02	1.07E+02	-9.94E+03	2.51E+02
		300.07	*	2.46	1.07E+02		3.02E+02	5.28E+01
		302.65	*	2.20	1.11E+02		2.05E+02	5.48E+01
		330.06	*	1.40	1.93E+02		1.23E+02	9.58E+01
+	TH-231	81.23	*	0.89	3.19E+02	4.13E+01	3.83E+02	1.59E+02
		84.21	*	6.60	4.13E+01		1.56E+02	2.06E+01
		89.95	*	0.94	2.67E+02		1.45E+02	1.33E+02
	TH-232	63.81		0.27	1.15E+03	1.15E+03	-3.10E+03	5.71E+02
	U-232	57.78		0.20	1.41E+03	1.41E+03	-1.54E+03	7.03E+02
		129.08		0.07	4.98E+03		-3.44E+02	2.48E+03
	PA-233	75.35		1.39	3.25E+02	8.66E+00	2.88E+03	1.62E+02
		86.81		1.97	1.78E+02		3.02E+02	8.87E+01
		103.97		0.87	3.00E+02		-2.69E+02	1.49E+02
		271.48		0.33	1.51E+03		-8.62E+02	7.52E+02
		300.34		6.62	6.12E+01		-1.52E+03	3.04E+01
		312.17		38.60	8.66E+00		-2.56E+00	4.30E+00
		340.81		4.47	8.08E+01		-1.28E+01	4.02E+01
		375.45		0.68	4.81E+02		1.77E+02	2.39E+02
		398.62		1.39	2.71E+02		-5.95E+02	1.35E+02
		415.76		1.75	2.18E+02		-4.75E+01	1.08E+02
	U-233	42.44		0.09	3.49E+03	3.49E+03	-9.13E+03	1.73E+03
		54.70		0.02	1.57E+04		-4.77E+03	7.81E+03
		97.13		0.02	1.42E+04		-9.69E+02	7.06E+03
	PA-234	62.70		1.55	1.98E+02	1.93E+01	-7.97E+02	9.83E+01
		99.86		3.19	8.56E+01		-5.28E+01	4.26E+01
		125.46		0.78	4.33E+02		1.90E+01	2.16E+02
		131.30		18.00	1.93E+01		3.03E+00	9.61E+00
		140.50		0.81	4.55E+02		-6.84E+02	2.27E+02
		152.71		5.97	6.78E+01		-4.29E+01	3.38E+01
		159.48		0.65	5.79E+02		-7.30E+02	2.88E+02
		170.85		0.50	7.35E+02		3.84E+01	3.66E+02
		186.15		1.76	2.66E+02		2.14E+03	1.33E+02
		193.73		0.49	7.57E+02		-4.83E+03	3.77E+02
		200.97		0.90	4.12E+02		1.35E+02	2.05E+02
		203.12		1.23	3.01E+02		3.23E+01	1.50E+02
		227.00		9.99	3.46E+01		-1.35E+01	1.72E+01
		245.37		0.75	6.51E+02		-1.70E+03	3.24E+02
		249.22		2.47	1.35E+02		-1.66E+03	6.73E+01
		272.28		1.08	4.64E+02		-4.65E+02	2.31E+02
		293.79		2.99	2.56E+02		5.07E+03	1.28E+02
		330.40		0.77	4.68E+02		-1.84E+02	2.33E+02
		369.50		2.47	1.30E+02		-9.77E-01	6.45E+01
		372.00		1.21	2.69E+02		9.68E+01	1.33E+02
		458.68		1.13	3.04E+02		2.02E+02	1.51E+02

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	PA-234	506.75		1.29	2.73E+02	1.93E+01	-6.53E+01	1.36E+02
		513.40		1.10	3.50E+02		-8.98E+01	1.74E+02
		521.40		0.74	4.27E+02		-6.55E+02	2.11E+02
		565.20		1.03	3.17E+02		-1.08E+02	1.57E+02
		569.32		11.80	2.85E+01		1.06E+01	1.41E+01
		602.60		0.54	6.28E+02		-6.36E+04	3.11E+02
		663.90		0.54	7.49E+02		-1.01E+03	3.71E+02
		666.50		1.16	3.49E+02		1.13E+03	1.73E+02
		669.70		0.99	4.06E+02		-2.79E+02	2.01E+02
		692.60		1.24	2.46E+02		-8.19E+01	1.21E+02
		699.03		3.61	9.43E+01		-7.41E+01	4.66E+01
		705.90		2.27	1.60E+02		-4.95E+01	7.93E+01
		730.90		0.63	5.15E+02		6.05E+01	2.54E+02
		733.39		6.90	4.69E+01		-1.58E+01	2.31E+01
		738.00		1.15	2.91E+02		1.42E+01	1.44E+02
		742.81		2.06	1.68E+02		1.06E+02	8.28E+01
		755.00		1.22	2.90E+02		1.62E+02	1.43E+02
		780.40		0.90	3.94E+02		-2.56E+02	1.95E+02
		786.27		1.19	3.49E+02		7.11E+02	1.73E+02
		794.90		1.34	2.61E+02		-2.21E+02	1.29E+02
		796.10		2.58	1.36E+02		-1.73E+02	6.73E+01
		805.52		3.14	1.42E+02		3.03E+02	7.02E+01
		819.20		1.88	2.02E+02		-1.20E+01	9.99E+01
		824.65		3.12	1.25E+02		-1.29E+02	6.17E+01
		831.50		4.12	1.04E+02		3.55E+01	5.14E+01
		876.00		2.52	1.70E+02		3.90E+01	8.42E+01
		880.50		10.40	4.13E+01		6.55E+00	2.04E+01
		883.24		9.58	4.45E+01		-1.05E+00	2.20E+01
		898.67		3.24	1.35E+02		1.09E+01	6.66E+01
		926.00		16.80	2.42E+01		-1.90E+02	1.20E+01
		946.18		15.00	2.56E+01		-3.71E+01	1.26E+01
		980.48		5.15	7.69E+01		1.04E+00	3.79E+01
		984.20		1.62	2.43E+02		-4.14E+01	1.20E+02
		1028.70		0.57	6.70E+02		-5.70E+01	3.30E+02
		1083.20		0.50	8.18E+02		1.32E+02	4.04E+02
		1352.90		1.15	3.24E+02		-9.90E+01	1.59E+02
		1393.90		2.06	1.93E+02		-6.22E+02	9.48E+01
		1668.40		0.76	5.26E+02		-1.04E+03	2.58E+02
		1693.80		0.69	4.75E+02		4.05E+01	2.32E+02
	PA-234M	766.36		0.29	2.14E+03	4.68E+02	-3.12E+03	1.07E+03
		811.00		0.51	8.87E+02		-1.33E+03	4.39E+02
		1001.03		0.84	4.68E+02		-4.14E+01	2.31E+02
	TH-234	63.29		4.84	6.38E+01	5.21E+01	-2.13E+02	3.17E+01
		83.30		0.08	4.80E+03		-2.99E+03	2.39E+03
		92.59		5.58	5.21E+01		-1.41E+02	2.60E+01
		112.81		0.28	9.80E+02		5.90E+02	4.88E+02
	U-234	53.20		0.12	2.28E+03	2.28E+03	-9.35E+02	1.14E+03
		120.90		0.03	9.80E+03		8.87E+01	4.88E+03
+	U-235	109.16		1.54	1.72E+02	6.49E+00	-5.69E+01	8.57E+01
		143.76	*	10.96	3.06E+01		1.52E+02	1.52E+01
		163.36		5.08	7.26E+01		-5.27E+01	3.62E+01
		185.71	*	57.20	6.49E+00		6.66E+01	3.23E+00
		194.94		0.63	5.87E+02		-1.96E+03	2.92E+02

Analysis Report for 591000R2

Tetra Tech TO# 160115-1

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	U-235	202.11		1.08	3.42E+02	6.49E+00	6.53E+01	1.70E+02
		205.31		5.01	7.31E+01		-9.99E+00	3.64E+01
+	NP-237	57.10		0.39	7.19E+02	2.27E+01	-1.01E+03	3.58E+02
		86.48	*	12.40	2.27E+01		5.46E+01	1.13E+01
		94.64	*	0.60	4.93E+02		-8.13E+02	2.46E+02
		143.25	*	0.43	7.79E+02		3.88E+03	3.88E+02
	NP-239	106.12		27.20	1.14E+08	1.14E+08	-9.35E+07	5.67E+07
		209.75		3.42	1.26E+09		2.72E+08	6.29E+08
		228.18		10.76	3.80E+08		-1.17E+09	1.89E+08
		277.60		14.38	2.98E+08		-1.93E+09	1.48E+08
		334.31		2.07	2.01E+09		-8.80E+08	9.96E+08
	AM-241	59.54		35.90	8.00E+00	8.00E+00	-6.61E+00	3.98E+00
	CM-241	132.41		3.90	2.88E+02	1.49E+01	4.42E+01	1.44E+02
		165.01		3.40	3.51E+02		-8.93E+01	1.75E+02
		205.88		2.67	4.41E+02		-9.20E+01	2.19E+02
		430.63		4.06	2.97E+02		-7.78E+01	1.47E+02
		463.27		1.23	8.76E+02		-1.50E+02	4.34E+02
		471.80		71.30	1.49E+01		1.76E-01	7.41E+00
		636.88		1.53	6.47E+02		3.67E+02	3.19E+02
+	AM-243	74.66	*	68.20	4.49E+00	4.49E+00	1.69E+01	2.24E+00

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

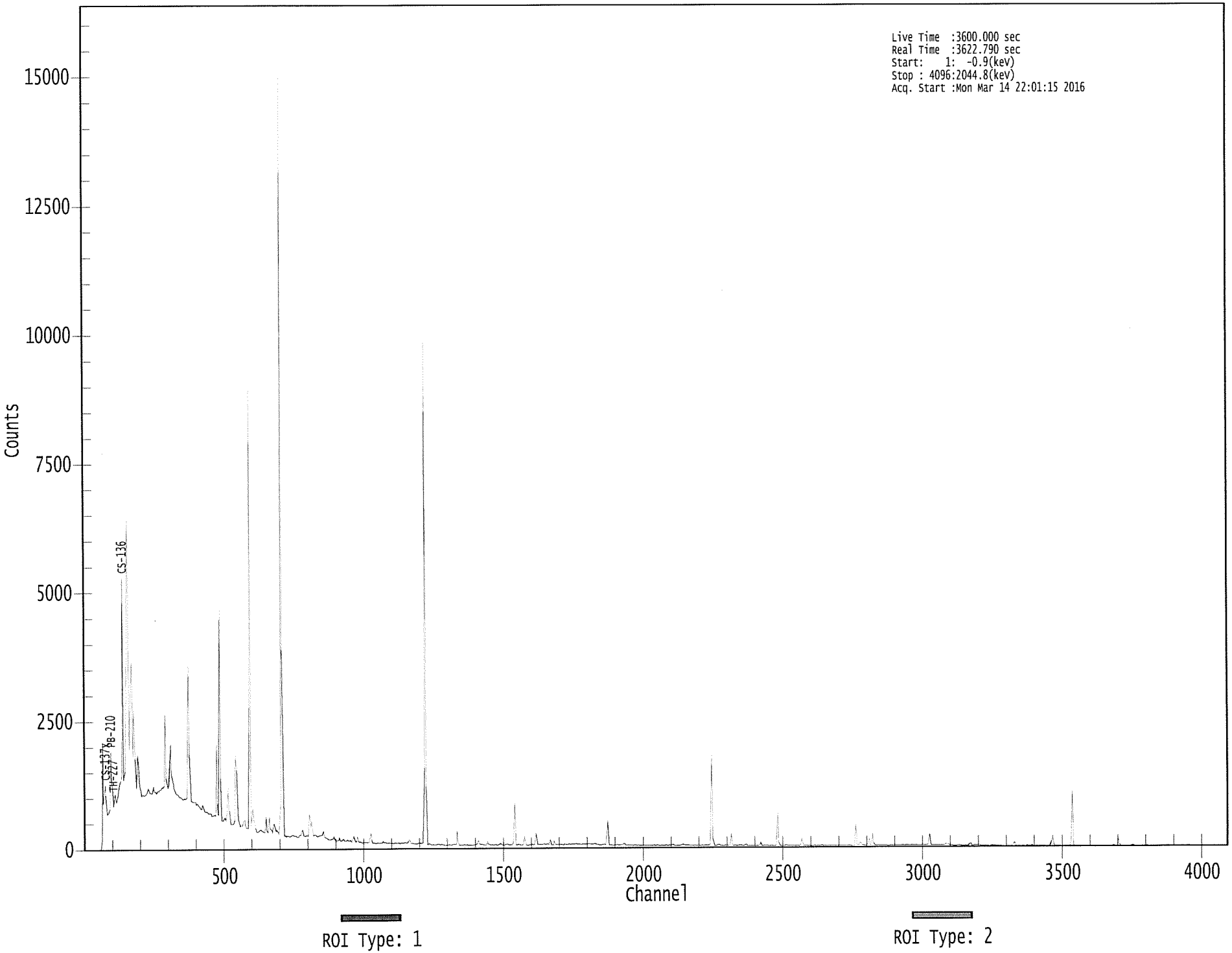
No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

0000007061.CNF



011830

SOUTHWEST RESEARCH INSTITUTE
CLIENT: Tetra Tech
TASK ORDER#: 160115-1
SRR#: 56591, 56639, 56785, 56876
SDG: 588049
VTSR: 11.20.15, 12.01.15, 12.01.15, 01.15.16
PROJECT#: 21431.01.001

% SOLIDS
RAW DATA

Digestion Log

011832

Southwest Research Institute
San Antonio, Texas 78228

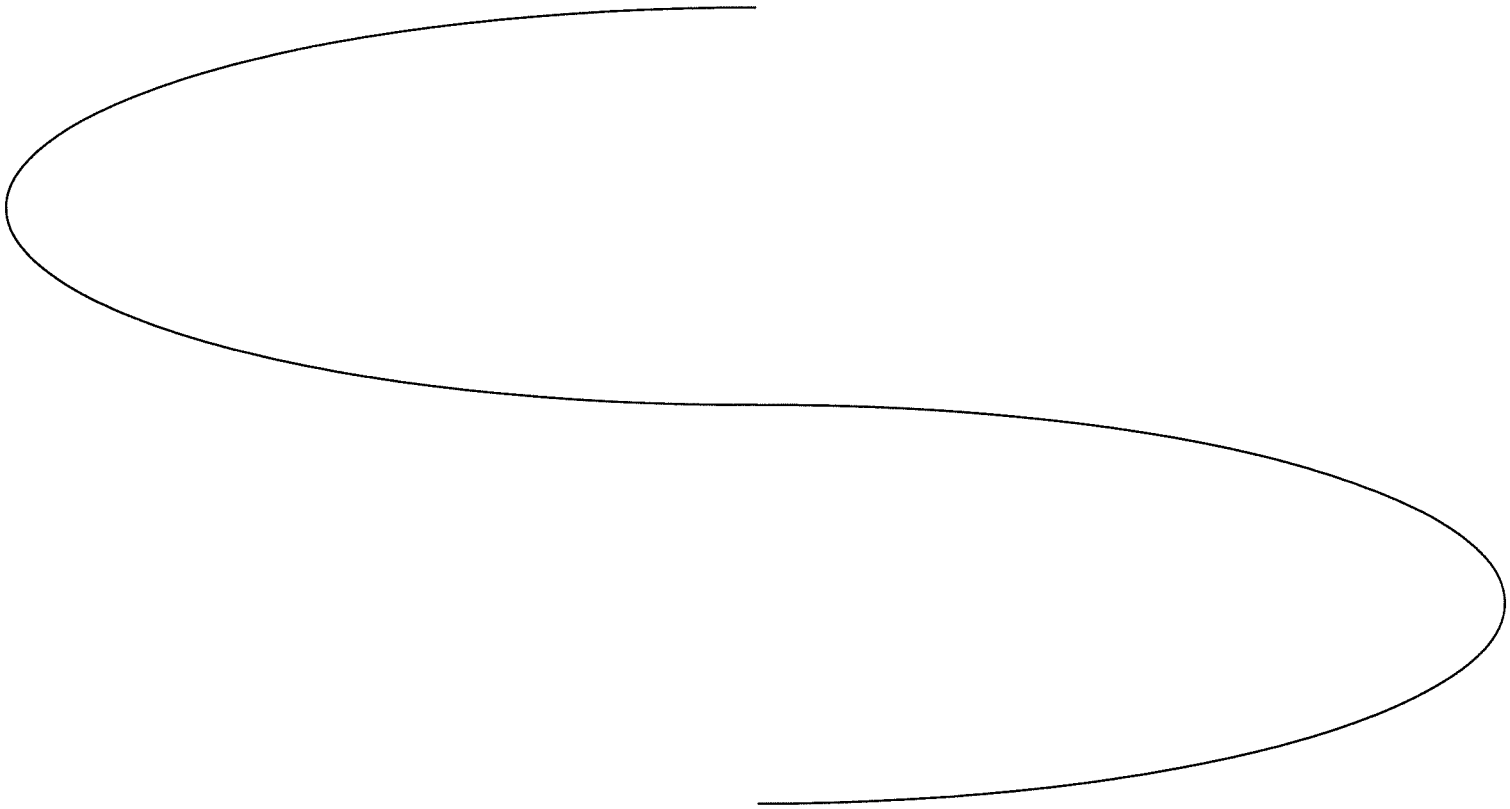
Batch: 20160120-P001 (Ver. 4)
Status: APPROVED

Client(s): Tetra Tech
Task Order(s): 160115-1
SDG(s): 588049
Project(s): 21431.01.001
Method(s): % Solids (TAP: 01-0406-013)
Matrix(s): Soil, Solid
Balance(s): Balance#88
Heating Device: MF #1 Temperature (C): 104
Time In: 01/19/2016 16:30:24 Time Out: NA
Location: lab 47

☢ Rad Samples Present

Sample Identification	Client Identification	Tare Wt (g)	WetSample +TareWt (g)	DriedSample +TareWt (g)	%Solids (%)
PB16A19KE1	NA	105.7048	105.7048	105.7033	
588049	1D7-84-85	102.2251	183.9856	168.4998	81.06
588556	A2-S1	108.7420	170.4478	157.3405	78.76
588556D	A2-S1	110.8677	179.4038	164.5506	78.33
590212	A1-AC-1	113.9910	154.4949	148.4398	85.05
590213	A1-AC-3	110.9773	161.5866	154.6684	86.33
590214	A2-AC-21	102.5751	151.7806	142.6021	81.35
591000	WL-234CT	113.7635	151.1173	141.1714	73.37

Comments:
"As received" %Solids (and %Solids as Tested for Set #1)
%solid book #11 (150406-026 pg 004
The first weight was recorded, not the second weight



Prepared by: EDRISI, KHALED Date: 01/19/2016

Reviewed by: SEILER, NICHOLLE Date: 01/25/2016

Disposal Int/Date/Loc: _____

Program version(8/11/2011)

Digestion Log

011833

Southwest Research Institute
San Antonio, Texas 78228

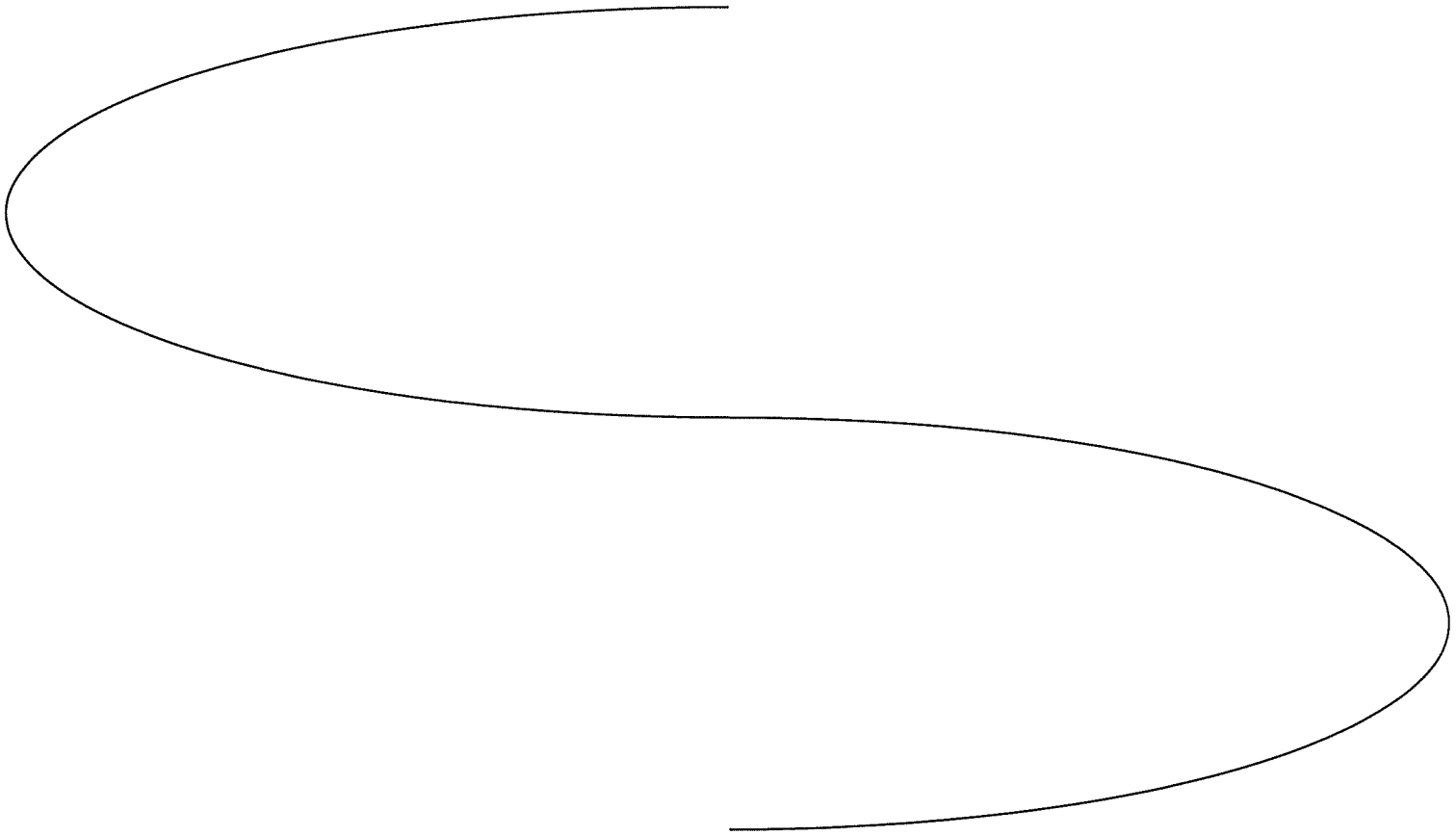
Batch: 20160325-P010 (Ver. 2)
Status: APPROVED

Client(s): Tetra Tech
Task Order(s): 160115-1
SDG(s): 588049
Project(s): 21431.01.001
Method(s): % Solids (TAP: 01-0406-013)
Matrix(s): Soil, Solid
Balance(s): Balance#88
Heating Device: Oven #33 Temperature (C): 105
Time In: 02/18/2016 18:15:49 Time Out: 02/19/2016 10:00:03

☢ Rad Samples Present

Sample Identification	Client Identification	Tare Wt (g)	WetSample +TareWt (g)	Wet Weight (g)	DriedSample +TareWt (g)	Dry Weight (g)	%Solids (%)
588049	1D7-84-85	1.0353	2.3388	1.3035	2.3351	1.2998	99.72
588556	A2-S1	1.0288	2.0489	1.0201	2.0475	1.0187	99.86
588556D	A2-S1	0.9692	2.0006	1.0314	1.9997	1.0305	99.91
590212	A1-AC-1	0.9970	2.0682	1.0712	2.0680	1.0710	99.98
590213	A1-AC-3	0.9994	2.1197	1.1203	2.1175	1.1181	99.80
590214	A2-AC-21	0.9529	2.0422	1.0893	2.0422	1.0893	100.00
591000	WL-234CT	0.9602	1.9074	0.9472	1.9044	0.9442	99.68

Comments:
bk 15-0406-026 pg 14
set #2
%Solids as Tested (after treatment: heated at 105°C for 16 hours)



Prepared by: EDRISI, KHALED Date: 02/18/2016

Reviewed by: SEILER, NICHOLLE Date: 03/25/2016

Disposal Int/Date/Loc: _____

Program version(8/11/2011)

Digestion Log

011834

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San Antonio, Texas 78228

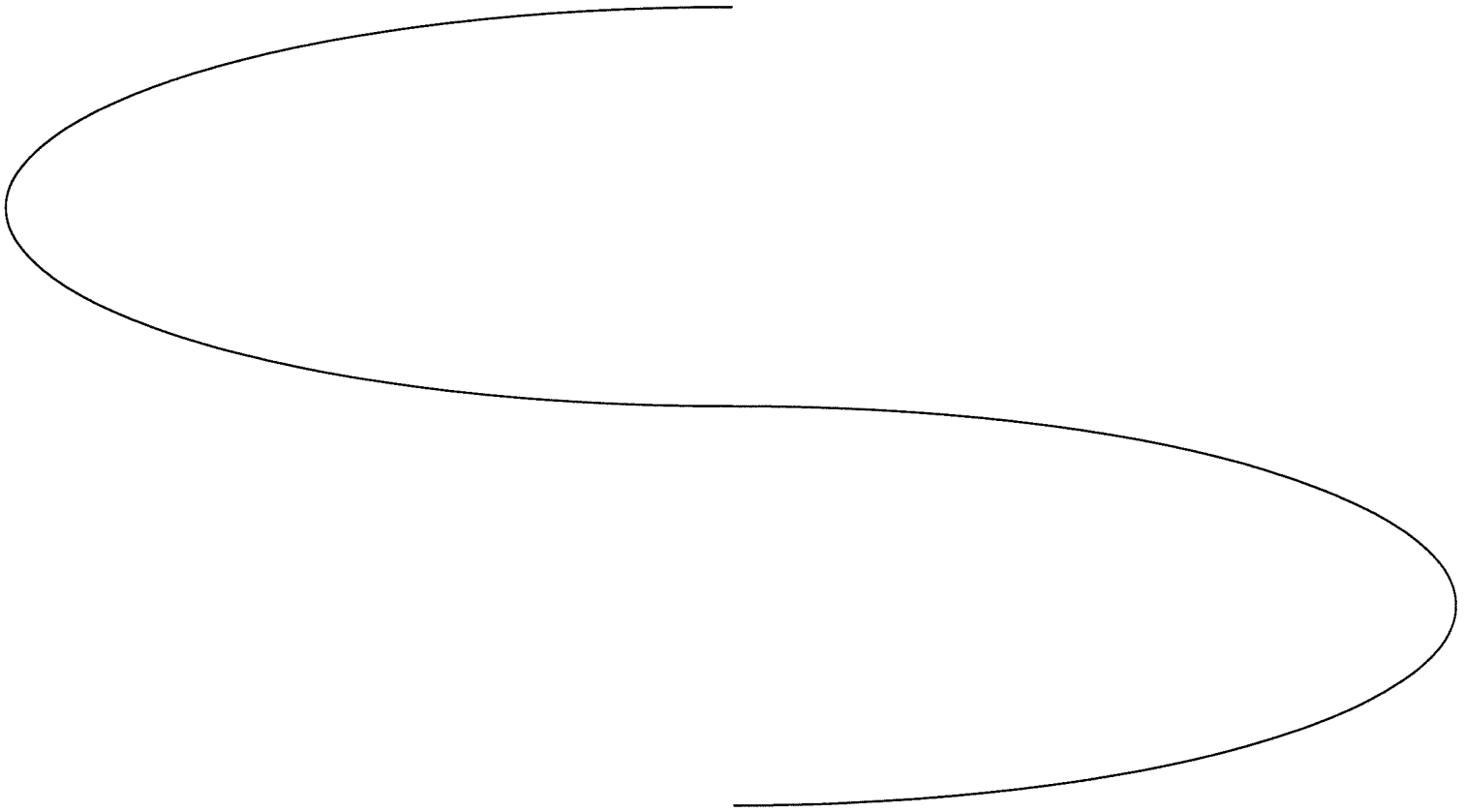
Batch: 20160325-P011 (Ver. 2)
Status: APPROVED

Client(s): Tetra Tech
Task Order(s): 160115-1
SDG(s): 588049
Project(s): 21431.01.001
Method(s): % Solids (TAP: 01-0406-013)
Matrix(s): Soil, Solid
Balance(s): Balance#88
Heating Device: MF #1 Temperature (C): 250
Time In: 02/18/2016 18:15:07 Time Out: 02/19/2016 10:00:26

☢ Rad Samples Present

Sample Identification	Client Identification	Tare Wt (g)	WetSample +TareWt (g)	Wet Weight (g)	DriedSample +TareWt (g)	Dry Weight (g)	%Solids (%)
588049	1D7-84-85	0.9918	2.0112	1.0194	2.0122	1.0204	100.10
588049D	1D7-84-85	1.0324	2.1007	1.0683	2.1023	1.0699	100.15
588556	A2-S1	1.0179	2.0282	1.0103	2.0331	1.0152	100.49
590212	A1-AC-1	0.9874	1.9864	0.9990	1.9910	1.0036	100.46
590213	A1-AC-3	1.0277	2.1182	1.0905	2.1228	1.0951	100.42
590214	A2-AC-21	1.0014	2.0971	1.0957	2.1048	1.1034	100.70
591000	WL-234CT	1.0210	2.0234	1.0024	2.0308	1.0098	100.74

Comments:
bk 15-0406-026 pg 14
set #3
%Solids as Tested (after treatment: heated at 250 oC for 16 hours)
For reporting, 100% solids were used for this set, not these determined %solids.



Prepared by: EDRISI, KHALED Date: 02/18/2016

Reviewed by: SEILER, NICHOLLE Date: 03/25/2016

Disposal Int/Date/Loc: _____

Program version(8/11/2011)

Digestion Log

011835

Southwest Research Institute
San Antonio, Texas 78228

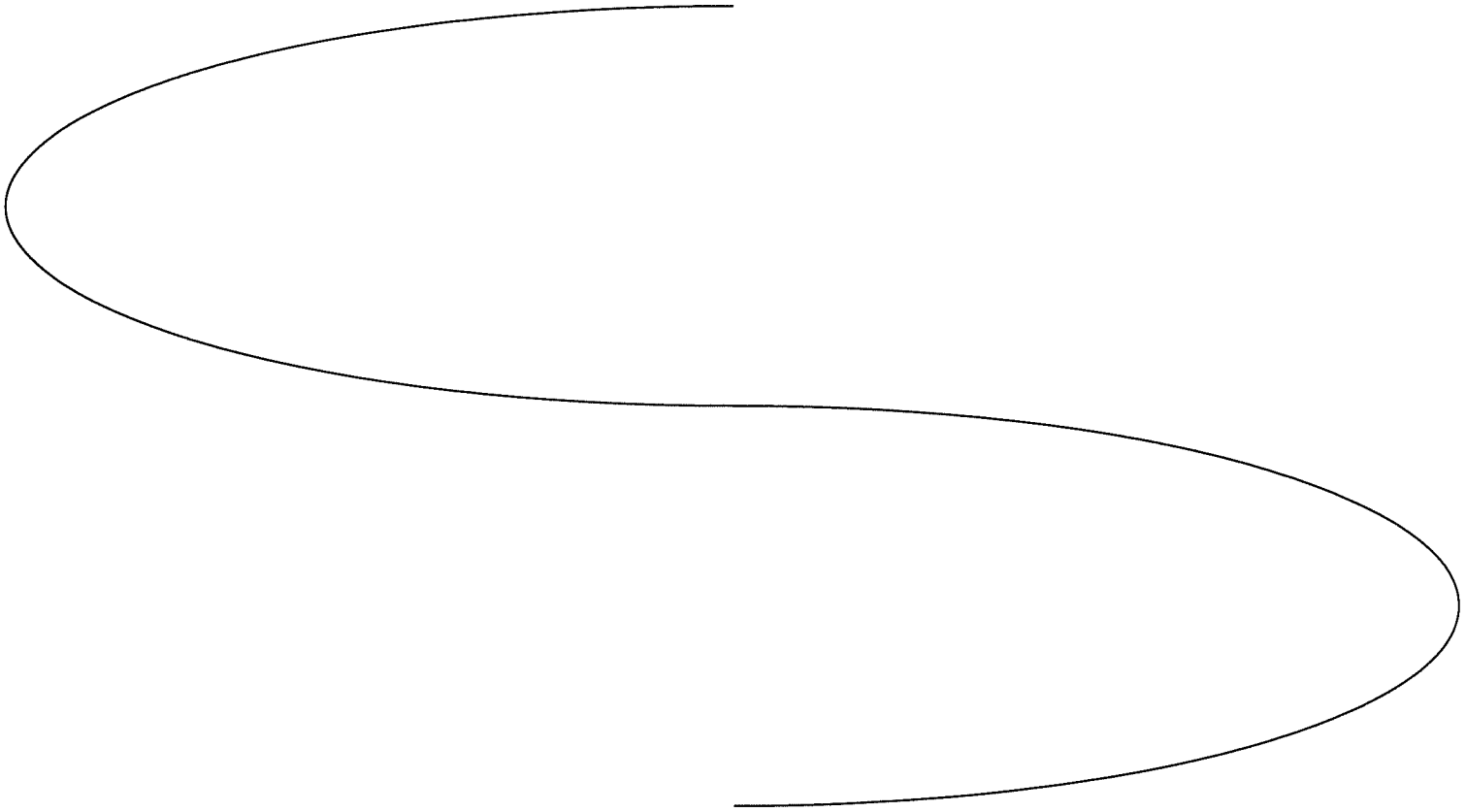
Batch: 20160325-P003 (Ver. 2)
Status: APPROVED

Client(s): Tetra Tech
Task Order(s): 160115-1
SDG(s): 588049
Project(s): 21431.01.001
Method(s): % Solids (TAP: 01-0406-013)
Matrix(s): Soil, Solid
Balance(s): Balance #135
Heating Device: Oven #33 Temperature (C): 105
Time In: 02/28/2016 13:00:09 Time Out: 02/29/2016 11:00:22

☢ Rad Samples Present

Sample Identification	Client Identification	Tare Wt (g)	WetSample +TareWt (g)	Wet Weight (g)	DriedSample +TareWt (g)	Dry Weight (g)	%Solids (%)
588049	1D7-84-85	1.0243	2.2731	1.2488	2.2706	1.2463	99.80
588556	A2-S1	1.0057	2.0183	1.0126	1.9855	0.9798	96.76
588556D	A2-S1	0.9764	2.0493	1.0729	2.0337	1.0573	98.55
590212	A1-AC-1	0.9895	2.1897	1.2002	2.1081	1.1186	93.20
590213	A1-AC-3	0.9981	2.0673	1.0692	2.1254	1.1273	105.43
590214	A2-AC-21	0.9898	2.0542	1.0644	2.0569	1.0671	100.25
591000	WL-234CT	1.0218	2.0526	1.0308	2.0511	1.0293	99.85

Comments:
bk 15-0406-026 pg 20
set #4
%Solids as Tested (after treatment: heated at 250 oC for 48 hours)
For reporting, 100% solids were used for this set, not these determined % solids.



Prepared by: EDRISI, KHALED Date: 02/28/2016

Reviewed by: SEILER, NICHOLLE Date: 03/25/2016

Disposal Int/Date/Loc: _____

Program version(8/11/2011)

Digestion Log

011836

Southwest Research Institute
San Antonio, Texas 78228

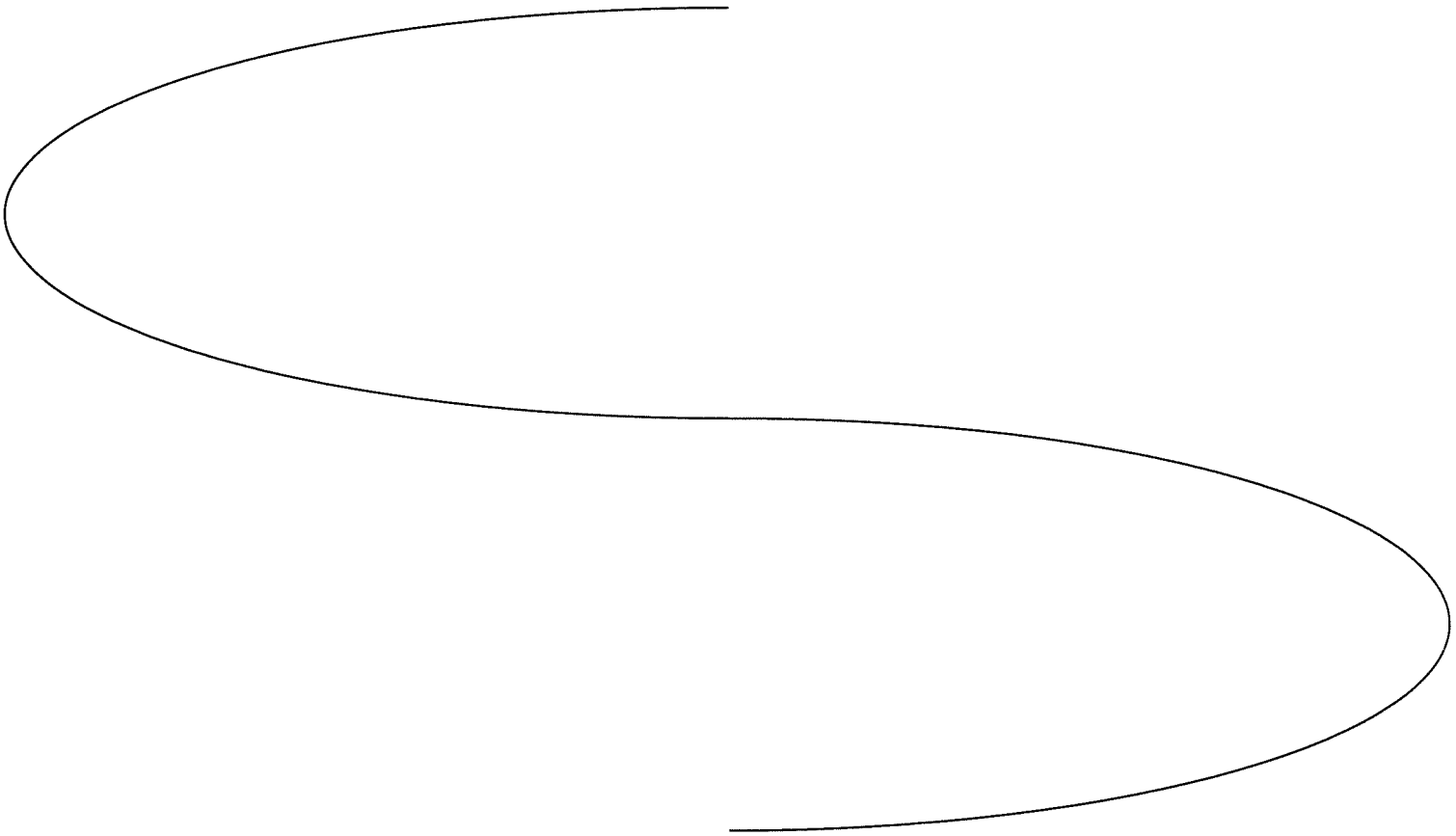
Batch: 20160325-P006 (Ver. 2)
Status: APPROVED

Client(s): Tetra Tech
Task Order(s): 160115-1
SDG(s): 588049
Project(s): 21431.01.001
Method(s): % Solids (TAP: 01-0406-013)
Matrix(s): Soil, Solid
Balance(s): Balance#88
Heating Device: Oven #22 Temperature (C): 105
Time In: 03/11/2016 12:45:58 Time Out: 03/14/2016 14:00:11

☢ Rad Samples Present

Sample Identification	Client Identification	Tare Wt (g)	WetSample +TareWt (g)	Wet Weight (g)	DriedSample +TareWt (g)	Dry Weight (g)	%Solids (%)
588049	1D7-84-85	0.9798	2.7376	1.7578	2.4026	1.4228	80.94
588049D	1D7-84-85	1.0025	2.6240	1.6215	2.2945	1.2920	79.68
588556	A2-S1	1.0268	2.8877	1.8609	2.4449	1.4181	76.21
590212	A1-AC-1	0.9495	2.7081	1.7586	2.4467	1.4972	85.14
590213	A1-AC-3	0.9776	2.5622	1.5846	2.3425	1.3649	86.14
590214	A2-AC-21	1.0186	3.0071	1.9885	2.6365	1.6179	81.36
591000	WL-234CT	0.9926	2.6894	1.6968	2.2483	1.2557	74.00

Comments:
bk 15-0406-026 pg 28
set #5
%Solids as Tested (after treatment: heated at 250° C for 48hours, and then moisture added at "as received" levels)



Prepared by: EDRISI, KHALED Date: 03/11/2016

Reviewed by: SEILER, NICHOLLE Date: 03/25/2016

Disposal Int/Date/Loc: _____

Program version(8/11/2011)

Digestion Log

011837

Southwest Research Institute
San Antonio, Texas 78228

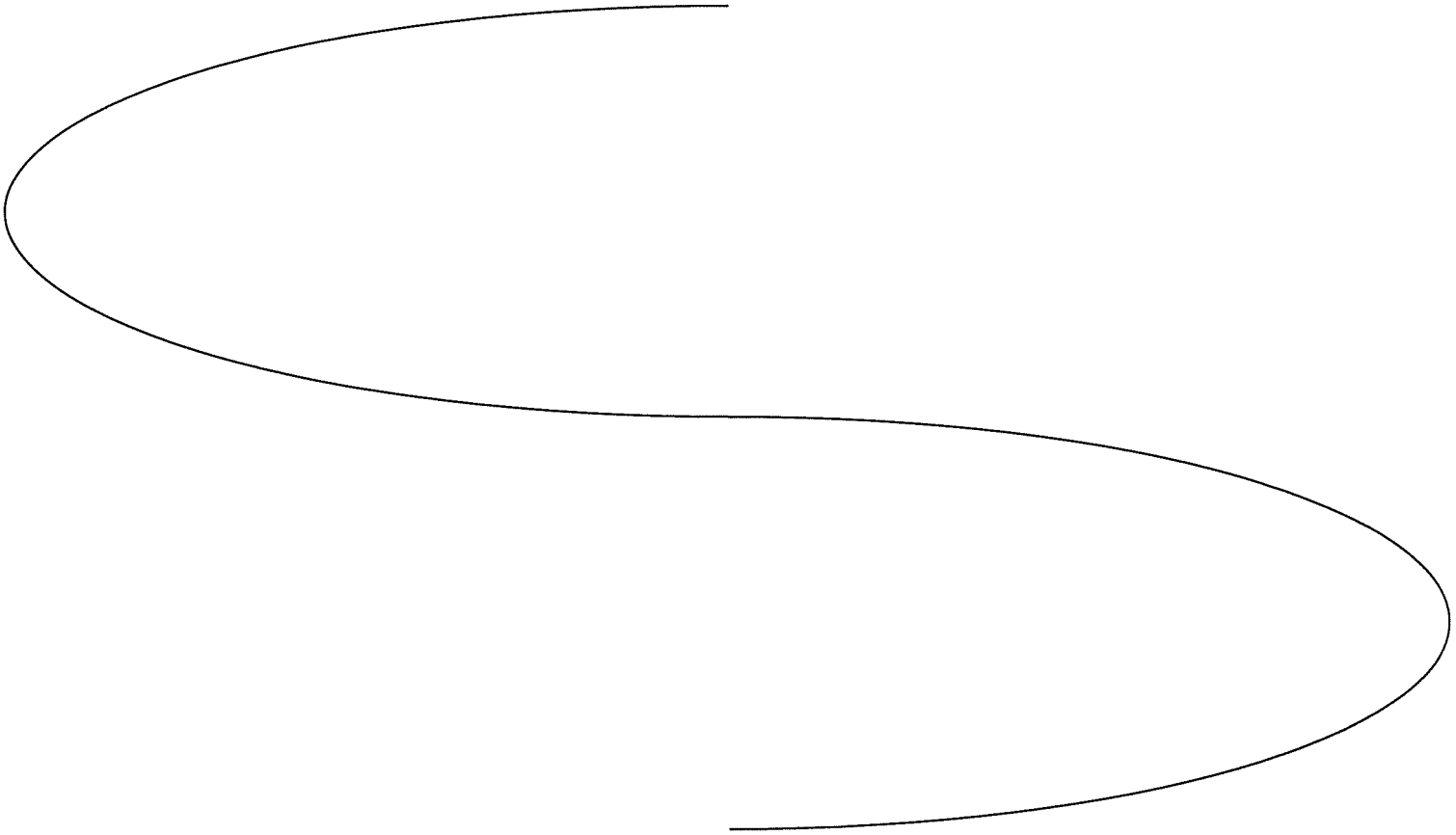
Batch: 20160325-P007 (Ver. 2)
Status: APPROVED

Client(s): Tetra Tech
Task Order(s): 160115-1
SDG(s): 588049
Project(s): 21431.01.001
Method(s): % Solids (TAP: 01-0406-013)
Matrix(s): Soil, Solid
Balance(s): Balance#88
Heating Device: Oven #22 Temperature (C): 105
Time In: 03/11/2016 12:45:37 Time Out: 03/14/2016 14:00:05

☢ Rad Samples Present

Sample Identification	Client Identification	Tare Wt (g)	WetSample +TareWt (g)	Wet Weight (g)	DriedSample +TareWt (g)	Dry Weight (g)	%Solids (%)
588049	1D7-84-85	0.9838	2.7382	1.7544	2.5665	1.5827	90.21
588556	A2-S1	0.9794	2.6870	1.7076	2.5082	1.5288	89.53
588556D	A2-S1	0.9708	2.8388	1.8680	2.6531	1.6823	90.06
590212	A1-AC-1	0.9867	2.5521	1.5654	2.3914	1.4047	89.73
590213	A1-AC-3	0.9969	2.9844	1.9875	2.7770	1.7801	89.56
590214	A2-AC-21	1.0083	2.8047	1.7964	2.6229	1.6146	89.88
591000	WL-234CT	0.9597	2.7620	1.8023	2.5804	1.6207	89.92

Comments:
bk 15-0406-026 pg 30
set #6
%Solids as Tested (after treatment: heated at 250° C for 48 hours, and then moisture added at 10%)



Prepared by: EDRISI, KHALED Date: 03/11/2016

Reviewed by: SEILER, NICHOLLE Date: 03/25/2016

Disposal Int/Date/Loc: _____

Program version(8/11/2011)

Digestion Log

011838

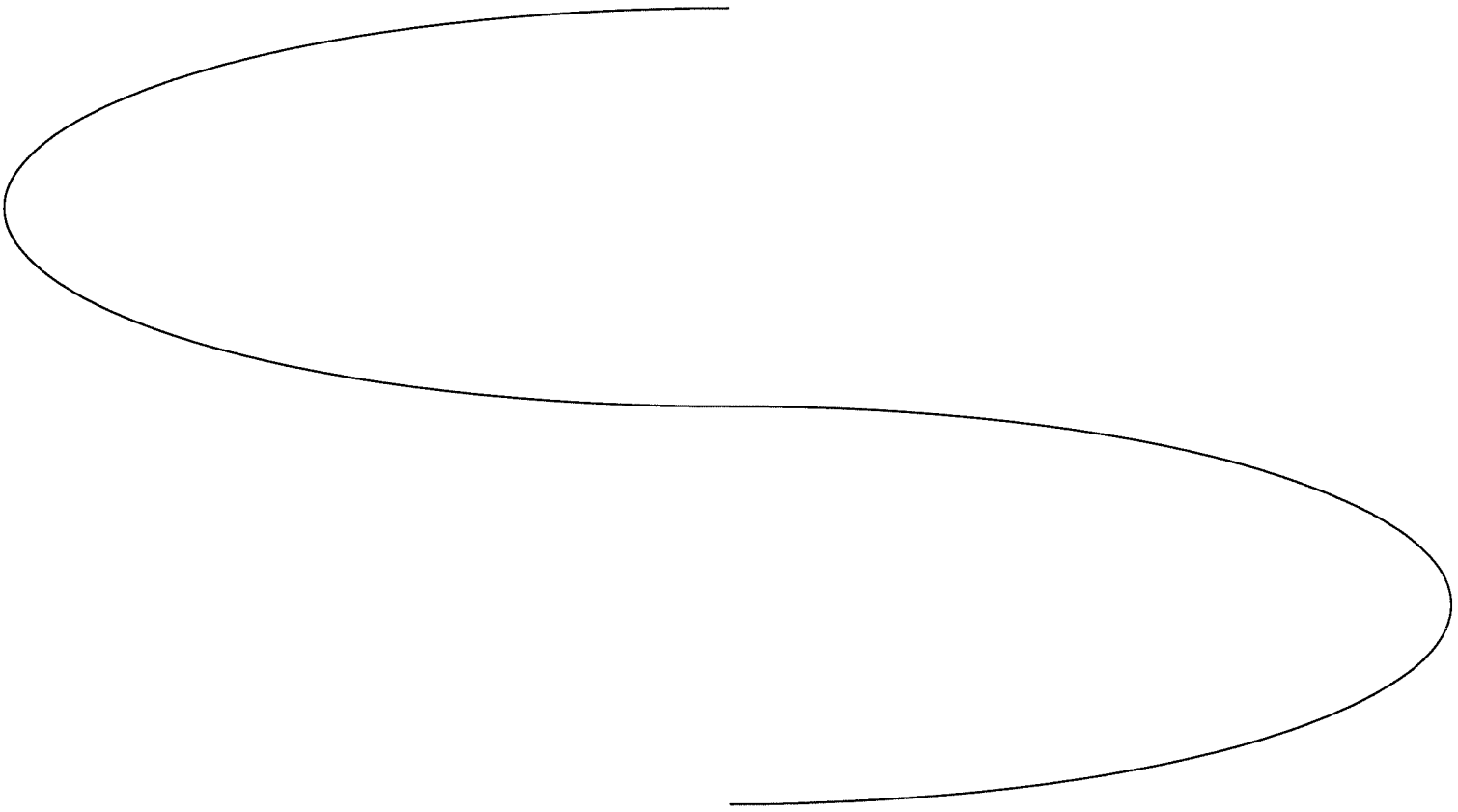
Southwest Research Institute
San Antonio, Texas 78228

Batch: 20160405-P001 (Ver. 2)
Status: APPROVED

Client(s): Tetra Tech
Task Order(s): 160115-1
SDG(s): 588049
Project(s): 21431.01.001
Method(s): % Solids (TAP: 01-0406-013)
Matrix(s): Soil, Solid
Balance(s): Balance#88
Heating Device: Oven #22 Temperature (C): 110
Time In: 03/04/2016 16:00:02 Time Out: 03/07/2016 10:00:56

Sample Identification	Client Identification	Tare Wt (g)	WetSample +TareWt (g)	Wet Weight (g)	DriedSample +TareWt (g)	Dry Weight (g)	%Solids (%)
PB16C04KE1	NA	1.0007	1.0007	0.0000	1.0007	0.0000	
588049	1D7-84-85	1.0022	6.4850	5.4828	4.8944	3.8922	70.99
588556	A2-S1	0.9878	6.1104	5.1226	4.4947	3.5069	68.46
588556D	A2-S1	0.9739	6.5983	5.6244	4.6674	3.6935	65.67
590212	A1-AC-1	1.0149	7.9438	6.9289	6.1418	5.1269	73.99
590213	A1-AC-3	0.9990	7.2610	6.2620	5.4087	4.4097	70.42
590214	A2-AC-21	1.0059	6.8890	5.8831	4.9604	3.9545	67.22
591000	WL-234CT	0.9733	5.5561	4.5828	3.6833	2.7100	59.13

Comments:
bk 11-0406-077 pg 128
set #7
%Solids as Tested (treatment: "as received" samples were saturated)



Prepared by: EDRISI, KHALED Date: 03/04/2016

Reviewed by: SEILER, NICHOLLE Date: 04/06/2016

Disposal Int/Date/Loc: _____

Program version(8/11/2011)

Digestion Log

011839

Southwest Research Institute
San Antonio, Texas 78228

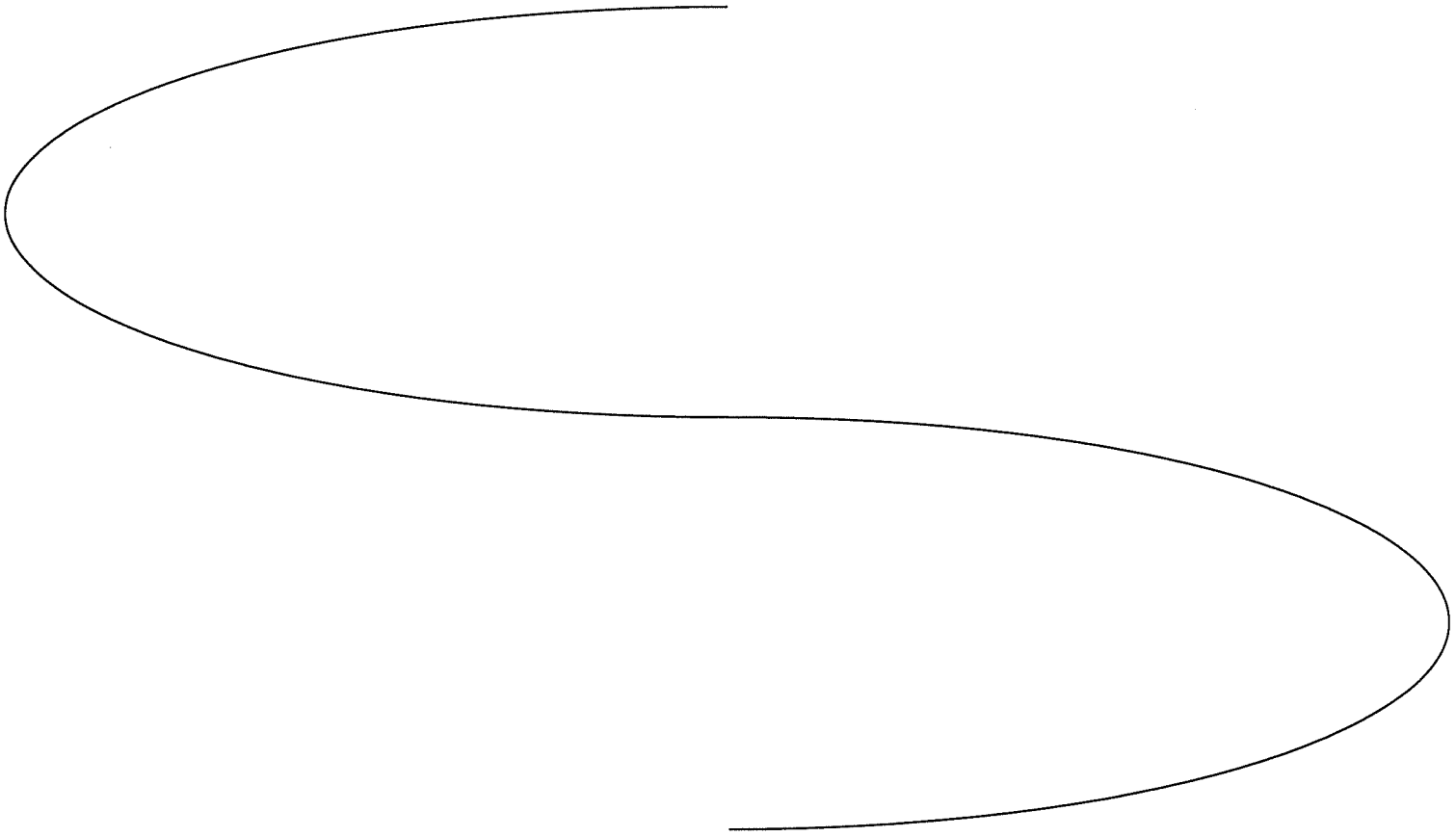
Batch: 20160325-P008 (Ver. 2)
Status: APPROVED

Client(s): Tetra Tech
Task Order(s): 160115-1
SDG(s): 588049
Project(s): 21431.01.001
Method(s): % Solids (TAP: 01-0406-013)
Matrix(s): Soil, Solid
Balance(s): Balance#88
Heating Device: Oven #22 Temperature (C): 105
Time In: 03/14/2016 18:00:51 Time Out: 03/15/2016 16:00:07

☢ Rad Samples Present

Sample Identification	Client Identification	Tare Wt (g)	WetSample +TareWt (g)	Wet Weight (g)	DriedSample +TareWt (g)	Dry Weight (g)	%Solids (%)
588049	1D7-84-85	0.9893	3.1537	2.1644	3.1142	2.1249	98.18
588049D	1D7-84-85	0.9385	2.9525	2.0140	2.9283	1.9898	98.80
588556	A2-S1	0.9874	2.8266	1.8392	2.8141	1.8267	99.32
590212	A1-AC-1	1.0048	3.2118	2.2070	3.1632	2.1584	97.80
590213	A1-AC-3	1.0159	3.2361	2.2202	3.2214	2.2055	99.34
590214	A2-AC-21	1.0136	2.7391	1.7255	2.7192	1.7056	98.85
591000	WL-234CT	1.0022	2.8827	1.8805	2.8452	1.8430	98.01

Comments:
bk 15-0406-026 pg 32
set #8
%Solids as Tested (after treatment: heated at 60° C until at or below 2% moisture)



Prepared by: EDRISI, KHALED Date: 03/14/2016

Reviewed by: SEILER, NICHOLLE Date: 03/25/2016

Disposal Int/Date/Loc: _____

Program version(8/11/2011)

Digestion Log

011840

Southwest Research Institute
San Antonio, Texas 78228

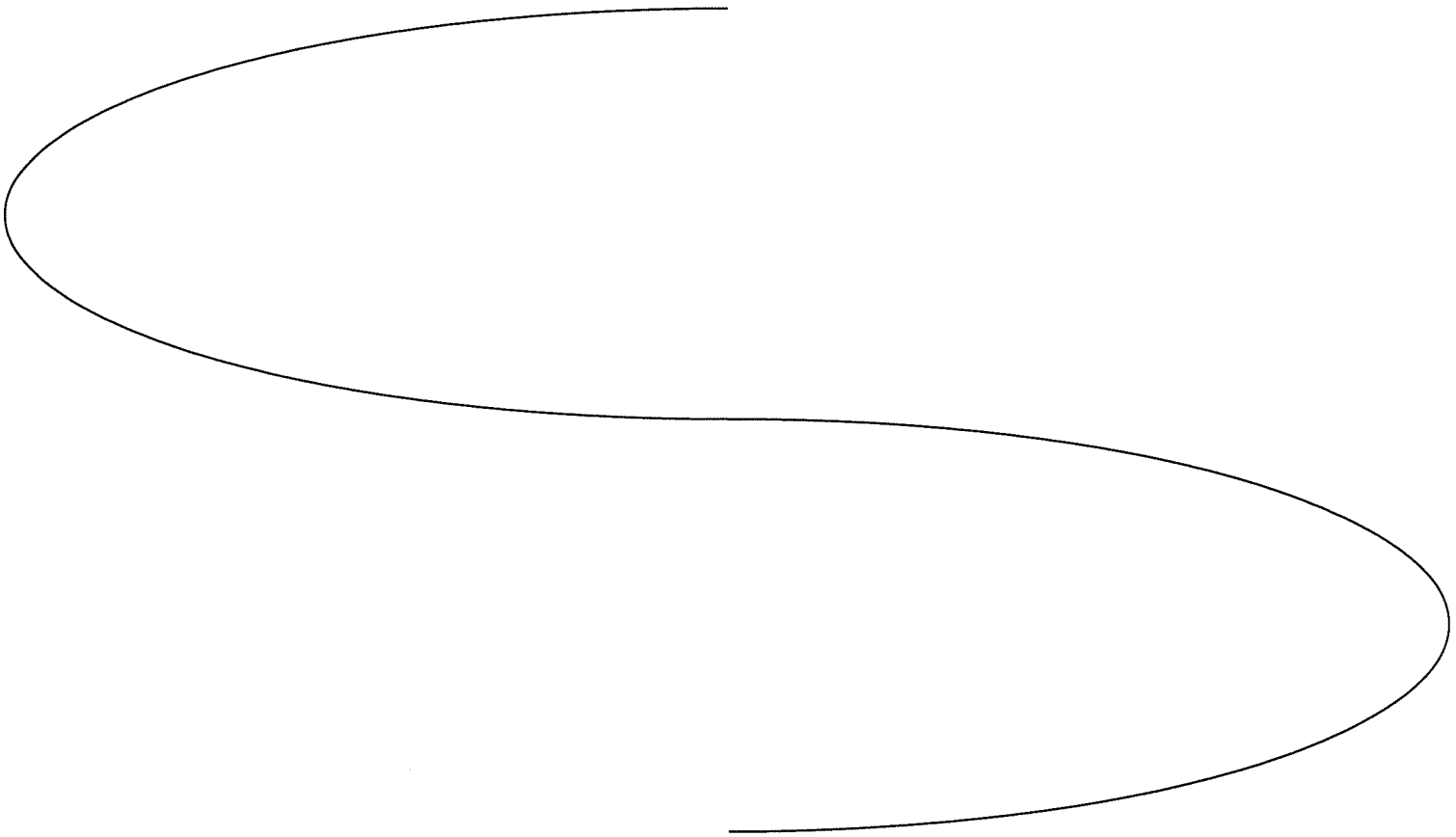
Batch: 20160325-P009 (Ver. 3)
Status: APPROVED

Client(s): Tetra Tech
Task Order(s): 160115-1
SDG(s): 588049
Project(s): 21431.01.001
Method(s): % Solids (TAP: 01-0406-013)
Matrix(s): Soil, Solid
Balance(s): Balance#88
Heating Device: Oven #22 Temperature (C): 105
Time In: 03/14/2016 18:00:02 Time Out: 03/15/2016 16:00:29

☢ Rad Samples Present

Sample Identification	Client Identification	Tare Wt (g)	WetSample +TareWt (g)	Wet Weight (g)	DriedSample +TareWt (g)	Dry Weight (g)	%Solids (%)
588049	1D7-84-85	0.9799	3.2052	2.2253	3.0230	2.0431	91.81
588556	A2-S1	0.9837	2.8573	1.8736	2.6975	1.7138	91.47
588556D	A2-S1	1.0434	2.8132	1.7698	2.6578	1.6144	91.22
590212	A1-AC-1	0.9837	3.3206	2.3369	3.1641	2.1804	93.30
590213	A1-AC-3	1.0147	2.6872	1.6725	2.5765	1.5618	93.38
590214	A2-AC-21	1.0117	3.1009	2.0892	2.8781	1.8664	89.34
591000	WL-234CT	1.0378	3.2561	2.2183	2.9737	1.9359	87.27

Comments:
bk 15-0406-026 pg 34
set #9
%Solids as Tested (after treatment: heated at 60° C until at or below approximately 10% moisture)



Prepared by: EDRISI, KHALED Date: 03/14/2016

Reviewed by: SEILER, NICHOLLE Date: 03/25/2016

Disposal Int/Date/Loc: _____

Program version(8/11/2011)

011841

SOUTHWEST RESEARCH INSTITUTE
CLIENT: Tetra Tech
TASK ORDER#: 160115-1
SRR#: 56591, 56639, 56785, 56876
SDG: 588049
VTSR: 11.20.15, 12.01.15, 12.01.15, 01.15.16
PROJECT#: 21431.01.001

DIGESTION LOGS

GAMMA SAMPLE PREPARATION LOG

Southwest Research Institute
San Antonio, Texas 78238

011842

Book I.D.#: 15-0406-051

BOOK/PAGE: 03 0013

CLIENT(S): TETRA TECH
TASK ORDER(S): 160115-1
PROJECT NO(S): 21431.01.001
SDG(S): 588049 SRI: 56591, 56639, 56785, 56876
TAP: 01-0411-015
REFERENCE PAGE(S): 03-008
MATRIX: Water ___ Soil ___ Biota ✓ Solid ___ Liquid ___ Filter ___ OTHER ___
GEOMETRY: 300g CAN RAISED - 1HR
NOTES: * LCSWA19JUIR2-115 BAD SOL 2 *
BALANCE #5

SAMPLE ID	SAMPLE AMOUNT (g)	CANNED	CED	DETECTOR	RUN NUMBER
PBLWA19JUIR2	300.0	19 JAN 1700HRS	19 JAN 2016	# 1	6932
* LCSWA19JUIR2	295.5	↓	17 SEPT. 2007		6931
588049R2		1105PM	19 JAN 2016		6933
588556R2		1235PM	↓		6934
588556DupR2		↓			6935
590212R2		120PM			6936
590213R2		150PM			6937
590214R2		1:00PM			6938
591000R2		V 1:15PM	V	V	6939

START 19 JAN 1700HRS

PREPARED BY: _____ DATE: 03/14/16

REVIEWED BY: _____ DATE: 15-March-2016

LOCATION: _____ DISPOSAL: _____

SOUTHWEST RESEARCH INSTITUTE
RADIOCHEMISTRY SAMPLE PREPARATION LOG

011843

Book I.D. 15-0406-043 BOOK / PAGE: 19 00132

CLIENT(S): Tetra Tech
TASK ORDER(S): 160115-1
PROJECT NO(S): 21431-01-001
METHOD / TAP: Teflon beaker TAP (01-0406-150/008)
MATRIX: Water ___ Soil ✓ Biota ___ Solid ___ Liquid ___ TCLP Ext ___ OTHER ___
INSTRUMENT: Gamma ___ Alpha ___ LSC ___ GPC ___ ICP/MS ___ OTHER ___
Tracer(s): + 200µl Th-229, 056-RAD-801 3 #37454 * Spiked 91µl Th-232 022 RAD Soln #34289

Start: 1830, Pipette #200-1, Hp #2, 195-200°C

SAMPLE ID	Aliquot (g)					
PB16B11KE1 +	0.5000	10mL				
LCS16B11KE1 *+	0.5000	↓				
588049 +	0.5133					
588556 +	0.5058					
588 5569 +	0.5028					
590212 +	0.5199					
590213 +	0.5111					
590214 +	0.5021					
591000 +	0.5113	↓				
PB16B11KE2	0.5000	50mL				
LCS16B11KE2 *	0.5000	↓				
588049R	0.5109					
↓ 556R	0.5136					
↓ 5569R	0.5165					
590212R	0.5133					
590213R	0.5131					
590214R	0.5076					
591000R	0.5039	↓				
HNO3 #65702						
HClO4 #64370						
HF # 59242						
NO3 Lot No. 65108 3-10-16 JK						

PREPARED BY: [signature] 3-10-16 DATE: 2-11-16
REVIEWED BY: [signature] DATE: 03/29/16
LOCATION: ___ DISPOSAL: ___

SOUTHWEST RESEARCH INSTITUTE
RADIOCHEMISTRY SAMPLE PREPARATION LOG

011844

Book I.D. 15-0406-043 BOOK / PAGE: 19 00173

CLIENT(S): Tetra Tech
TASK ORDER(S): 11e0115-1
PROJECT NO(S): 21431.01.001
METHOD / TAP: Thorium 01-0411-043
MATRIX: Water ___ Soil ___ Biota ___ Solid ✓ Liquid ___ TCLP Ext ___ OTHER ___
INSTRUMENT: Gamma ___ Alpha ✓ LSC ___ GPC ___ ICP/MS ___ OTHER ___
Tracer(s): 200mL Th229 056RadSOL3 * 91mL Th232 022RadSOL3

SAMPLE ID	Aliquot from pg 19-132	F.V. (mL)
PBW B11KE2	0.05mL	10mL
LCSW B11KE2 *		
588049R		
588556R		
588556DR		
590212R		
590213R		
590214R	0.25mL	
591000R	0.05mL	

PIPETTES: 5000-4, 1000-4, 200-5
BALANCE #88

WPN 04/06/16

WPN 04/06/16

PREPARED BY: Wesley A. Nalezdi DATE: 03/30/16 Transposed from pg 19-1666 prepared 03/28/16
REVIEWED BY: ✓ JW DATE: 04/01/16
LOCATION: ___ DISPOSAL: ___

SOUTHWEST RESEARCH INSTITUTE
CLIENT: Tetra Tech
TASK ORDER#: 160115-1
SRR#: 56591, 56639, 56785, 56876
SDG: 588049
VTSR: 11.20.15, 12.01.15, 12.01.15, 01.15.16
PROJECT#: 21431.01.001

STANDARD LOGS & CERTIFICATES OF ANALYSIS

011846

BOOK / PAGE 02 115

Southwest Research Institute®
6220 Culebra Rd.
San Antonio, Texas 78238

Radioactive Standards Log

Standard : 115-Rad-Soil2

Vendor(s) : MRAD-07 Standard
SWRI ID #

Radionuclide(s) : mixed Gamma Soil

Source I.D. :

Dilution : primary

Procedure :

Certified MRAD-07 soil gamma Standard
wt: 0.2955 kg
Ref. date - Sept. 17, 2007

11/21/08
03/13/10

Final Activity :		Reference Date :	Sept 17, 2007
Date Prepared :	10/28/08	Certification Date :	10/28/08-SEE 02 116
Prepared By :	E Howard	Re-Certification Date :	10/29/09-SEE 02 116
Reviewed By :		Date: 02-08-2009	

011847

BOOK / PAGE 02 116

Southwest Research Institute®
6220 Culebra Rd.
San Antonio, Texas 78238

Radioactive Standards Log

Standard Verification(s) :

12/28/09

MRAD-07 Soil std. 115-Rad-Sol2
300g Soil Can Det1 5hr run (Actual wt: 0.2955 Kg)

Nuclide	TV as of 09/17/07	run A	%rec	run B	%rec	run C	%rec	run D	Avg %	std dev	con interva
Bl-212	1.54E+03	1.46E+03	95.0%	1.62E+03	105.3%	1.62E+03	105.0%	1.79E+03	101.8%	0.07255	7.11
CS-134	5.99E+03	6.04E+03	100.9%	6.22E+03	103.9%	5.94E+03	99.1%	4.51E+03	101.3%	0.02089	2.05
K-40	1.12E+04	1.11E+04	99.3%	1.14E+04	101.8%	1.22E+04	109.3%	8.91E+03	103.5%	0.01768	1.73

Warren A. Hagedorn 03/10/10

MRAD-07 Soil std. 115-Rad-Sol2 Analyzed 01/26/10
300g Soil Can Det1 5hr run (Actual wt: 0.2955 Kg)

Nuclide	TV as of 09/17/07	run A	%rec	run B	%rec	run C	%rec	Avg %	std dev	con interval
Co-60	6.86E+03	7.90E+03	115.1%	7.85E+03	114.5%	8.01E+03	116.8%	115.5%	0.01187	1.16%
Cs-137	6.95E+03	7.84E+03	112.8%	7.86E+03	113.1%	7.95E+03	114.4%	113.5%	0.00859	0.84%
K-40	1.12E+04	1.11E+04	99.3%	1.19E+04	106.3%	1.27E+04	113.8%	106.5%	0.07233	7.09%

met supplies limits.

Warren A. Hagedorn 03/10/10 met suppliers limits.

MRAD-07 Soil std. 115-Rad-Sol2 Analyzed 09/30/10
300g Soil Can Det1 1hr run (Actual wt: 0.2955 Kg)

Nuclide	TV as of 09/17/07	run A	%rec	run B	%rec	run C	%rec	Avg %	std dev	con interval
Co-60	6.86E+03	6.79E+03	99.0%	6.78E+03	98.8%	6.90E+03	100.6%	99.5%	0.00971	0.98%
Cs-137	6.95E+03	6.92E+03	99.6%	7.09E+03	102.0%	6.87E+03	98.8%	100.1%	0.01858	1.63%
K-40	1.12E+04	1.10E+04	98.2%	9.55E+03	85.3%	1.01E+04	90.2%	91.2%	0.06536	6.40%

WAH 03/13/10

ENVIRONMENTAL RESOURCE ASSOCIATES®
The Industry Standard™

Southwest Research Institute
Final Limits
For Study MRAD-7

Study MRAD-7
Complete Final Report

Soil Radionuclides (cat# 802)

Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description
Actinium-228	pCi/kg		1450	929 - 2040	Not Reported	
Americium-241	pCi/kg		843	502 - 1090	Not Reported	
Bismuth-212	pCi/kg		1540	405 - 2290	Not Reported	
Bismuth-214	pCi/kg		3410	2090 - 4910	Not Reported	
Cesium-134	pCi/kg		5990	3860 - 7190	Not Reported	
Cesium-137	pCi/kg		6950	5320 - 9040	Not Reported	
Cobalt-60	pCi/kg		6860	4990 - 9190	Not Reported	
Lead-212	pCi/kg		1220	787 - 1720	Not Reported	
Lead-214	pCi/kg		3640	2170 - 5420	Not Reported	
Manganese-54	pCi/kg		0.00		Not Reported	
Plutonium-238	pCi/kg		1700	974 - 2400	Not Reported	
Plutonium-239	pCi/kg		1120	764 - 1490	Not Reported	
Potassium-40	pCi/kg		11200	8120 - 15100	Not Reported	
Strontium-90	pCi/kg	3994	5320	1920 - 8720	Acceptable	ASTM D5811
Thorium-234	pCi/kg		2410	766 - 4580	Not Reported	
Uranium-234	pCi/kg		2410	1520 - 3010	Not Reported	
Uranium-238	pCi/kg		2410	1470 - 3060	Not Reported	
Uranium-Total	pCi/kg		4930	2810 - 6660	Not Reported	
Uranium-Total (mass)	µg/kg		7290	4000 - 9180	Not Reported	
Zinc-65	pCi/kg		1620	1280 - 2170	Not Reported	

Soil Radionuclides (cat# 802)

Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description
Actinium-228	pCi/kg		1450	929 - 2040	Not Reported	
Americium-241	pCi/kg		843	502 - 1090	Not Reported	
Bismuth-212	pCi/kg		1540	405 - 2290	Not Reported	
Bismuth-214	pCi/kg		3410	2090 - 4910	Not Reported	
Cesium-134	pCi/kg		5990	3860 - 7190	Not Reported	
Cesium-137	pCi/kg		6950	5320 - 9040	Not Reported	
Cobalt-60	pCi/kg		6860	4990 - 9190	Not Reported	
Lead-212	pCi/kg		1220	787 - 1720	Not Reported	
Lead-214	pCi/kg		3640	2170 - 5420	Not Reported	
Manganese-54	pCi/kg		0.00		Not Reported	
Plutonium-238	pCi/kg		1700	974 - 2400	Not Reported	
Plutonium-239	pCi/kg		1120	764 - 1490	Not Reported	
Potassium-40	pCi/kg		11200	8120 - 15100	Not Reported	
Strontium-90	pCi/kg		5320	1920 - 8720	Not Reported	
Thorium-234	pCi/kg		2410	766 - 4580	Not Reported	
Uranium-234	pCi/kg		2410	1520 - 3010	Not Reported	
Uranium-238	pCi/kg		2410	1470 - 3060	Not Reported	

Chemical Information Sheet

011849

#36005

Obsidian Rock 278

Grade:	Analytical
Type:	Neat
CAS:	- No Data -
Lot:	Obisdian 278
Received:	04/11/2012
Expiration:	04/11/2022
Location:	LAB 47
Current Lab:	Lab 47 Bldg 70
Original Amount:	35 g
Amount Remaining:	35
Supplier:	NIST SRM-278
Concentration:	
Project:	- No Data -
PO Number:	- No Data -
Internal Lab ID:	9869
Density:	- No Data -
Storage Requirement:	- No Data -
Measuring Device ID:	- No Data -
Date Disposed:	- No Data -
Notes:	

Component Table

Compound	Conc/Activity	CAS
Aluminum	74900 mg/Kg	
Arsenic	4.5 mg/Kg	
Boron	25 mg/Kg	
Barium	1140 mg/Kg	
Beryllium	2 mg/Kg	
Calcium	7030 mg/Kg	
Cadmium	0.18 mg/Kg	
Cobalt	1.5 mg/Kg	
Chromium	6.1 mg/Kg	
Copper	5.9 mg/Kg	
Iron	14300 mg/Kg	
Potassium	34500 mg/Kg	
Lanthanum	33 mg/Kg	
Lithium	47 mg/Kg	
Magnesium	1390 mg/Kg	
Manganese	403 mg/Kg	
Molybdenum	3 mg/Kg	
Nickel	3.6 mg/Kg	
Phosphorus	157 mg/Kg	7723-14-0
Lead	16.4 mg/Kg	
Sulfur	18 mg/Kg	
Antimony	1.5 mg/Kg	
Silicon	341000 mg/Kg	
Strontium	63.5 mg/Kg	
Thorium	12.4 mg/Kg	
Titanium	1450 mg/Kg	
Thallium	0.54 mg/Kg	
Uranium	4.58 mg/Kg	
Vanadium	15 mg/Kg	
Yttrium	41 mg/Kg	
Zinc	55 mg/Kg	
Zirconium	295 mg/Kg	
Sodium	35900 mg/Kg	
Cesium	5.1 mg/Kg	
Cerium	62.2 mg/Kg	
Ga	11 mg/Kg	
Rb	128 mg/Kg	
Nb	16 mg/Kg	

Component Table (Continued)

Compound	Conc/Activity	CAS
Nd	29 mg/Kg	
Hf	8.4 mg/Kg	
Dy	6.5 mg/kg	
Er	3.9 mg/Kg	
Eu	0.8 mg/Kg	
Gd	5.6 mg/Kg	
Ho	1.3 mg/Kg	
Lu	0.82 mg/Kg	
Nd	29 mg/Kg	
Pr	8 mg/Kg	
Sm	5.8 mg/Kg	
Tb	1.1 mg/Kg	
Tm	0.34 mg/Kg	
Yb	4.5 mg/Kg	
U-tot	4.58 mg/kg	

011851

INORGANIC LABS/RADCHEM LAB
DATE RECEIVED: 4/11/12
DATE EXPIRED: 4/11/22
DATE OPENED: 5/31/12
INORG: 9869 PO: E5066/mm

SwRI Chem ID: 36005

National Institute of Standards

Certificate

Standard Reference Material 278

Obsidian Rock

This Standard Reference Material (SRM) is intended for use in evaluating the accuracy of analytical methods and instruments used in the analysis of geological type materials. SRM 278 is a finely powdered obsidian rock, which was obtained from Clear Lake, Newberry Crater, Oregon.

Certified Values of Constituents

The concentrations of the constituents were determined by methods that are widely used in the field of geological analysis and have a demonstrated accuracy. The values given are "certified" values, i.e., those values that were determined by either a definitive method, reference method, or by two or more independent methods, and "information" values that were determined by single or non-reference methods. The certified values are given in Table 1.

Table 1. Certified Values of Constituents

Constituent[1]	Content[2], wt %	Constituent[1]	Content[2], mg/Kg
Al_2O_3[d]	14.15 ± 0.15	Cu[e]	5.9 ± 0.2
CaO[e]	0.983 ± 0.002	Ni[e]	3.6 ± 0.3
FeO[f]	1.36 ± 0.02	Rb[a,e]	127.5 ± 0.3
Fe_2O_3[f] (Total Fe as Fe_2O_3)	2.04 ± 0.02	Sr[e]	63.5 ± 0.1
K_2O[a,d,e]	4.16 ± 0.02	Th[e,f]	12.4 ± 0.3
MnO[b,f]	0.052 ± 0.002	Tl[e]	0.54 ± 0.04
Na_2O[a,d,f]	4.84 ± 0.05	U[e]	4.58 ± 0.04
P_2O_5[b,d]	0.036 ± 0.003	Pb[e]	16.4 ± 0.2
SiO_2	73.05 ± 0.13		
TiO_2[b,g]	0.245 ± 0.007		

[1]Methods of Analysis: codes are identified in table 2.

[2]The estimated uncertainties of the certified values are based on judgment and represent an evaluation of the combined effects of method imprecision, possible systematic errors among methods and material variability of 250 mg or more. (No attempt was made to derive exact statistical measures of imprecision because several methods were involved in the determination of most constituents.)

This Certificate of Analysis has undergone editorial revision to reflect program and organizational changes at NIST and at the Department of Commerce. No attempt was made to reevaluate the certificate value or any technical data presented in this certificate.

Gaithersburg, MD 20899
March 27, 1992
(Revision of certificate dated 8-19-81)

William P. Reed, Chief
Standard Reference Materials Program

(over)

SwRI Chem ID: 36005
SwRI Chem ID: 36005
SwRI Chem ID: 36005

SwRI Chem ID: 36005

The overall direction and coordination of the technical measurements leading to certification were performed in the Inorganic Analytical Research Division by E.L. Garner.

The technical and support aspects involved in the preparation, certification, and issuance of this Standard Reference Material were coordinated through the Standard Reference Materials Program by T.E. Gills. Revision of this certificate was coordinated through the Standard Reference Materials Program by J.S. Kane.

The constituents given in Table 2 are *not certified* but are included for information only.

Table 2. Information Values

Constituent[1]	Content, wt %	Constituent[1]	Content, mg/Kg
C (Total Carbon)[j]	(0.05)	Ba[f]	(1140)
CO_2[d]	(0.01)	B [g]	(25)
F[h]	(0.05)	Ce[f]	(62.2)
MgO[d]	(0.23)	Co[f]	(1.5)
		Cr[f]	(6.1)
		Cs[f]	(5.5)
		Eu[f]	(0.84)
		Gd[g]	(5.3)
		Hf[f]	(8.4)
		Lu[f]	(0.73)
		Sb[f]	(1.5)
		Sc[f]	(5.1)
		Sm[f,g]	(5.7)
		Ta[f]	(1.2)
		Tb[f]	(1.0)
		Yb[f]	(4.5)
		Zn[f]	(55)

[1]Methods of Analysis:

[a]Atomic Absorption
[b]Colorimetry
[c]Emission Spectrometry
[d]Gravimetry
[e]Isotope Dilution Mass Spectrometry
[f]Neutron Activation Analysis
[g]Prompt-gamma Activation Analysis
[h]Specific Ion Electrode Potentiometry
[i]Titrimetry
[j]Volumetry

SwRI Chem ID: 36005

SwRI Chem ID: 36005

9869

011853

SwRI Chem ID: 36005

Supplemental Information

Preparation

The material was processed by the Colorado School of Mines, Colorado. Approximately 350 lbs of obsidian rock were crushed, ground, and sieved to <200 mesh. The material was mixed in a cone blender to ensure homogeneity. For homogeneity, testing and certification, samples were randomly chosen and analyzed for both major and minor constituents. The inhomogeneity of this material is considered to be $\leq$2% relative.

Analysis

SRM 278, a natural glass, is hygroscopic and contains water that cannot be driven off by drying at low temperatures. This material will pick up additional water on exposure to the atmosphere. Thus, exposure time should be kept to a minimum. Furthermore, the sample should be ignited to a constant weight in a muffle furnace or over a small flame at a temperature between 350-600 °C prior to analysis. This procedure will ensure the accurate and precise determination of SiO_2, K_2O, Na_2O, Al_2O_3 and possibly other major constituents.

The analysts and laboratories cooperating in the analytical program for certification were:

- M.J. Blackman, E.L. Garner, J.W. Gramlich, L.A. Machlan, L.J. Moore, and R. Zeisler of the Inorganic Analytical Research Division, National Institute of Standards & Technology.

- J.B. Bodkin, J.C. DeVine, and N.H. Suhr of the Mineral Constitution Laboratories, The Pennsylvania State University, University Park, Pennsylvania.

- S.S. Goldrich of the Department of Geology, Northern Illinois University, DeKalb, Illinois.

- M.D. Glascock, C.C. Graham, J.R. Vogt, University of Missouri, Columbia, Missouri.

SwRI Chem ID: 36005

SwRI Chem ID: 36005

9869

Chemical Information Sheet

011854

#34847

SRM-688 Basalt Rock

Grade:	Analytical
Type:	Neat
CAS:	- No Data -
Lot:	688
Received:	11/04/2010
Expiration:	12/04/2020
Location:	LAB 47
Current Lab:	Lab 47 Bldg 70
Original Amount:	35 g
Amount Remaining:	35
Supplier:	NIST SRM-688
Concentration:	
Project:	- No Data -
PO Number:	- No Data -
Internal Lab ID:	8711
Density:	- No Data -
Storage Requirement:	- No Data -
Measuring Device ID:	- No Data -
Date Disposed:	- No Data -
Notes:	

Component Table

Compound	Conc/Activity	CAS
Aluminum	91900 mg/Kg	
Arsenic	2.5 mg/Kg	
Boron	1.3 mg/Kg	
Barium	200 mg/Kg	
Beryllium	0.7 mg/Kg	
Calcium	87000 mg/Kg	
Cobalt	49.7 mg/Kg	
Chromium	332 mg/Kg	
Copper	96 mg/Kg	
Iron	72400 mg/Kg	
Potassium	1550 mg/Kg	
Lanthanum	5.3 mg/Kg	
Lithium	7 mg/Kg	
Magnesium	50700 mg/Kg	
Manganese	1290 mg/Kg	
Sodium	15900 mg/Kg	
Nickel	150 mg/Kg	
Phosphorus	585 mg/Kg	7723-14-0
Lead	3.3 mg/Kg	
Sulfur	117 mg/Kg	
Antimony	0.3 mg/Kg	
Silicon	226000 mg/Kg	
Strontium	169 mg/Kg	
Thorium	0.33 mg/Kg	
Titanium	6930 mg/Kg	
Uranium	0.37 mg/Kg	
Vanadium	250 mg/Kg	
Yttrium	17 mg/Kg	
Zinc	58 mg/Kg	
Zirconium	61 mg/Kg	
Cerium	13.3 mg/Kg	
Ga	17 mg/Kg	
Scandium	38.1 mg/Kg	
Rubidium	1.91 mg/Kg	
Ce	13 mg/Kg	
Dy	3.4 mg/Kg	
Er	2.1 mg/Kg	
Eu	1.01 mg/Kg	



Component Table (Continued)

Compound	Conc/Activity	CAS
Gd	3.2 mg/Kg	
Ho	0.81 mg/Kg	
La	5.3 mg/Kg	
Lu	0.35 mg/Kg	
Nd	9.6 mg/Kg	
Pr	2.4 mg/Kg	
Sm	2.5 mg/Kg	
Tb	0.52 mg/Kg	
Tm	0.29 mg/Kg	
Yb	2.05 mg/Kg	
U-tot	0.37 mg/Kg	

011856
INORGANIC LABS/RADIOCHEM
DATE RECEIVED: 11-4-10
DATE EXPIRED: 12-4-2020 KC
DATE OPENED: 12-10-10
INORG: 8711 PO: D36523C

SwRI Chem ID: 34847

U. S. Department of Commerce
Malcolm Baldrige
Secretary
National Bureau of Standards
Ernest Ambler, Director

National Bureau of Standards

Certificate

Standard Reference Material 688

Basalt Rock

This Standard Reference Material (SRM) is intended for use in evaluating the accuracy of analytical methods and instruments used in the analysis of geological type materials. SRM 688 is a finely powdered basalt rock that was obtained from a Cenozoic basalt flow near Jackpot, Nevada.

Certified Values of Constituents

The concentrations of the constituents were determined by methods that are widely used in the field of geological analysis and have a demonstrated accuracy. The values given are "certified" values, i.e., those values that were determined by either a definitive method, reference method, or by two or more independent methods, and "information" values that were determined by single or non-reference methods. The certified values are given in Table 1.

Table 1 Certified Values of Constituents

Constituent [1]	Content [2] wt (%)	Constituent [1]	Content [2] wt (μg/g)
Al_2O_3 [c,g]	17.36 ± 0.09	Cr [b,e]	332 ± 9
FeO [g]	7.64 ± 0.03	Rb [d]	1.91 ± 0.01
Fe_2O_3 [c,g] (Total Fe as Fe_2O_3)	10.35 ± 0.04	Sr [d]	169.2 ± 0.7
		Th [d]	0.33 ± 0.02
K_2O [b,d]	0.187 ± 0.008	Pb [d]	3.3 ± 0.2
MnO [a,b,e]	0.167 ± 0.002		
Na_2O [b,c,e]	2.15 ± 0.03		
P_2O_5 [a,c]	0.134 ± 0.003		
SiO_2 [c]	48.4 ± 0.1		
TiO_2 [a,b]	1.17 ± 0.01		

1. Methods of Analysis
   [a] Colorimetry
   [b] Emission spectrometry
   [c] Gravimetry
   [d] Isotope dilution mass spectrometry
   [e] Neutron activation analysis
   [f] Specific ion electrode potentiometry
   [g] Titrimetry
2. The estimated uncertainties of the certified values are based on judgment and represent an evaluation of the combined effects of method imprecision, possible systematic errors among methods and material variability of 250 mg or more. (No attempt was made to derive exact statistical measures of imprecision because several methods were involved in the determination of most constituents.)

The overall direction and coordination of the technical measurements leading to certification were performed in the Inorganic Analytical Research Division, E. L. Garner, Chief.

The technical and support aspects involved in the preparation, certification, and issuance of this Standard Reference Material were coordinated through the Office of Standard Reference Materials by T. E. Gills.

Washington, D.C. 20234
August 18, 1981

George A. Uriano, Chief
Office of Standard Reference Materials

(over)

SwRI Chem ID: 34847

SwRI Chem ID: 34847

011857

SwRI Chem ID: 34847

SUPPLEMENTAL INFORMATION

Preparation

The material was processed by the Colorado School of Mines, Golden, Colorado. Approximately 600 pounds of basalt rock were crushed, ground, and sieved to <200 mesh. The material was mixed in a cone blender to ensure homogeneity. The inhomogeneity was tested by taking random samples and analyzing for both major and minor constituents and was found to be $\leq 2\%$ relative.

Analysis

SRM 688 may pick up additional water on exposure to the atmosphere. Thus, exposure time should be kept to a minimum. Before analysis, it is recommended that the material be dried at 105 °C for 24 hours. Typical weight loss upon drying is approximately 0.2 percent.

The analysts and laboratories cooperating in the analytical program for certification were:

I. L. Barnes, M. J. Blackman, E. L. Garner, J. W. Gramlich, L. A. Machlan, L. J. Moore, and R. Zeisler of the Inorganic Analytical Research Division, National Bureau of Standards.

J. B. Bodkin, J. C DeVine, and N. H. Suhr of the Mineral Constitution Laboratories, The Pennsylvania State University, University Park, Pa.

S. S. Goldich of the Department of Geology, Northern Illinois University, Dekalb, Ill.

The constituents given in Table 2 are *not certified,* but are included for information only.

Table 2 Information Values

Constituent [1]	Content wt %	Constituent [1]	Content wt (μg/g)
CaO [c]	(12.17)	Ce [e]	(13.3)
CO_2 [f]	(0.05)	Co [e]	(49.7)
F [f]	(0.02)	Eu [e]	(1.07)
MgO [c]	(8.4)	Hf [e]	(1.6)
		Lu [e]	(0.34)
		Sc [e]	(38.1)
		Ba [b]	(200)
		V [b]	(250)
		Cu [b]	(96)
		Ni [b]	(150)
		Sm [e]	(2.79)
		Tb [e]	(0.448)
		U [d]	(0.37)
		Yb [e]	(2.09)
		Zn [e]	(58.0)

SwRI Chem ID: 34847

SwRI Chem ID: 34847

Chemical Information Sheet

011858

#58932

Instrument Calibration Standard 1

Grade:	Analytical
Type:	Commercial Stock
CAS:	- No Data -
Lot:	12-56YPY
Received:	06/08/2015
Expiration:	06/30/2016
Location:	- No Data -
Current Lab:	Lab 48 Bldg 70
Original Amount:	125 mL
Amount Remaining:	125
Supplier:	Spex Certiprep
Concentration:	
Project:	- No Data -
PO Number:	H49587MM
Internal Lab ID:	- No Data -
Density:	- No Data -
Storage Requirement:	Ambient
Measuring Device ID:	- No Data -
Date Disposed:	- No Data -
Notes:	

Component Table

Compound	Conc/Activity	CAS
Calcium	5000 mg/L	1305-78-8
Magnesium	5000 mg/L	7439-95-4
Potassium	5000 mg/L	7440-09-7
Sodium	5000 mg/L	7440-23-5

011859

ACCREDITED
Reference Materials Producer
Cert #2495.01

SPEXertificate®

Certificate of Reference Material

ilac-MRA ACCREDITED
Chemical Testing
Cert #2495.02

Catalog Number: ICAL-1 **Lot No.** 12-56YPY

Description: Instrument Calibration Standard 1

Matrix: 5% HNO_3

This **ASSURANCE®** Certified Reference Material, CRM, is intended primarily for use as a calibration standard or quality control standard for inorganic spectroscopic instrumentation such as ICP-OES, DCP, AA, ICP-MS, and XRF. It can be employed in USEPA, ASTM and other methods relevant to the certified properties listed below.

The CRM is prepared from high purity single element concentrates of individual elements using Class A laboratory ware to give precise concentrations. See side 2 for details of certification.

Instrumental Analysis by ICP Spectrometer:

Analyte	Labeled	Certified	Uncertainty	SRM	Analyte	Labeled	Certified	Uncertainty	SRM
Ca	5000 µg/mL	5011 µg/mL	±30 µg/mL	3109a*	Mg	5000 µg/mL	5053 µg/mL	±30 µg/mL	3131a*
K	5000 µg/mL	5022 µg/mL	±30 µg/mL	3141a*	Na	5000 µg/mL	5002 µg/mL	±30 µg/mL	3152a*

* - indicates NIST SRM † - indicates SPEX CertiPrep CRM (when NIST SRM is not available)

SPEX CertiPrep Reference Multi: Lot# 3-139YP,10-139YP

Balances are calibrated regularly with weight sets traceable to NIST#s 32856, 32867 and others. This CRM is guaranteed stable and accurate to ±0.5% of the certified (measured) value. This includes uncertainty components due to preparation, measurement, homogeneity, and short-term and long-term stability. No measured concentration of any individual component exceeds ±2% of the labeled value. This guarantee is valid for a period of one year from the date of certification only when the material is unopened and stored under ambient laboratory conditions.

Date of Certification: _____ Certifying Officer: _____

SwRI Chem ID: 58932
SwRI Chem ID: 58932
SwRI Chem ID: 58932

011860

Report of Certification

This Certified Reference Material (CRM) has been prepared and certified under an ISO 9001:2008, ISO 17025:2005, and ISO Guide 34:2009 quality system consistent with the following guides:

- ISO 9001: Quality management systems – Requirements – certified by UL-DQS
- ISO 17025: General requirements for the competence of testing and calibration laboratories – accredited by A2LA
- ISO Guide 34: General requirements for the competence of reference material producers – accredited by A2LA
- ISO Guide 31: Reference Materials – Contents of certificates and labels
- ISO Guide 35: Reference Materials – General & Statistical Principals for Certification
- Guide To The Expression Of Uncertainty In Measurement 1997
- EURACHEM/CITAC Guide: Quantifying Uncertainty in Analytical Measurement – Second Edition
- ASTM Guide D6362-98
- NIST Technical Note 1297
- ILAC-G12-2000: Guidelines for the requirements for the competence of reference materials producers
- ISO/REMCO N280

Material Source:

All analytes and matrix materials are obtained and verified by SPEX CertiPrep from pre-qualified vendors as per ISO 9001:2008, ISO 17025:2005, and ISO Guide 34:2009 guidelines. Vendor identifications are proprietary, however sources of all materials used in the preparation and testing of SPEX CertiPrep CRMs are tracked and documented. For further assistance, please contact the Sales Support Department at crmsales@spexcsp.com.

Instructions for Use:

Primary usage of this CRM is in neat form or diluted serially with matrix of a purity at or greater than the purity of the original matrix solution. If dilution is required the diluent must be compatible with all certified analytes and contain stabilizers appropriate for the period of intended use. The CRM can also be used as a spike or with a spike, again with appropriate compatibility considerations. All solutions should be thoroughly mixed, by shaking, prior to use and never pipetted directly from the bottle. All surfaces that come in contact with the solution must be thoroughly cleaned and leached prior to use. Dilutions should be performed only with Class A volumetric glassware.

Method of Preparation:

Clean laboratory procedures and techniques have been used throughout the preparation. All materials, equipment, analytical instrumentation and personnel have been qualified prior to use. The highest purity acids applicable, 18 megohm, double deionized water, acid-leached triple-rinsed bottles (where appropriate), and Class A/calibrated volumetrics have been used in all preparations.

Homogeneity:

The homogeneity of the CRM has been confirmed by procedures consistent with ISO 17025:2005, ISO Guide 34:2009, and ASTM D6362-98 Appendix X2. Random, replicate samples of the final, packaged material have been analyzed to prove homogeneity in accordance with our internal procedure 4600 HOMOGEN-1A. Since the product is highly homogeneous, any sample size taken for analysis would be within the uncertainty budget. This is consistent with the intended use of the CRM.

Statistical Estimator and Confidence Limits:

The certified value 'X' listed on the reverse of this document is at the 95% level of confidence and can be expressed as:

- $X = x \pm U$ where X = certified value, U = expanded uncertainty, x = property value
- $U = ku_c$ where k = 2 is the coverage factor at the 95% confidence level
- u_c is obtained by combining the individual element standard uncertainty components u_i, and $u_c = \sqrt{\sum u_i^2}$

Certification Traveler Report:

All certified values reported were derived from the Traveler Report (SPEX CertiPrep's traceability documentation) identified by the lot number of this CRM. During the stated period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution. For further assistance, please contact the Sales Support Department at crmsales@spexcsp.com.

Legal Notice:

SPEX CertiPrep reference materials are not for any cosmetic, drug or household application and are to be used only by qualified individuals who are trained in appropriate procedures. No claims against SPEX CertiPrep, LLC of any kind whatsoever, whether based on breach of warranty, alleged negligence, or otherwise, with respect to this Reference Material shall be greater than the purchase price. In no event shall SPEX CertiPrep, LLC be liable for any loss of profits or any incidental, special, or consequential damages.

SPEX CertiPrep
Your Science is Our Passion

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Phone: 1-800-LAB-SPEX • Fax: 732 603 9647

Accredited to 17025 & Guide 34
ISO
Certified to 9001

SwRI Chem ID: 58932
SwRI Chem ID: 58932
SwRI Chem ID: 58932

Chemical Information Sheet

011861
#60421

Phosphorus

Grade:	Analytical
Type:	Commercial Stock
CAS:	7723-14-0
Lot:	J2-P02062
Received:	07/24/2015
Expiration:	04/23/2018
Location:	Bldg 70 Lab 48
Current Lab:	Lab 48 Bldg 70
Original Amount:	125 mL
Amount Remaining:	8
Supplier:	Inorganic Ventures
Concentration:	1000 mg/L
Project:	- No Data -
PO Number:	H50033MM
Internal Lab ID:	- No Data -
Density:	1.000 g/mL
Storage Requirement:	Ambient
Measuring Device ID:	- No Data -
Date Disposed:	02/22/2016
Notes:	

Component Table

Compound	Conc/Activity	CAS

INORGANIC VENTURES
CERTIFICATE OF ANALYSIS
[illegible]

SwRI Chem ID: 60421

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01 ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGP1
Lot Number:	J2-P02062
Matrix:	H2O
Value / Analyte(s):	1 000 µg/mL ea: P
Starting Material:	H3PO4
Starting Material Lot#:	1704
Starting Material Purity:	99.9997%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1000 ± 4 µg/mL

Certified Density: 1.000 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **997 ± 6 µg/mL**
ICP Assay NIST SRM 3139a Lot Number: 060717

Assay Method #2 **1000 ± 2 µg/mL**
Acidimetric NIST SRM 84L Lot Number: 84L

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

SwRI Chem ID: 60421
SwRI Chem ID: 60421
SwRI Chem ID: 60421

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2)^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.008004	M	Eu	<	0.012006	O	Na	<	0.000100	M	Se	<	0.032017	O	Zn	<	0.000580
O	Al	<	0.006000	O	Fe	<	0.005500	M	Nb	<	0.002001	O	Si	<	0.004000	M	Zr	<	0.020011
M	As	<	0.040022	M	Ga	<	0.004002	M	Nd	<	0.008004	M	Sm	<	0.004002				
M	Au	<	0.012006	M	Gd	<	0.004002	M	Ni		0.002501	M	Sn		0.000700				
O	B	<	0.010000	M	Ge	<	0.024013	n	Os	<		M	Sr	<	0.002001				
M	Ba	<	0.040022	M	Hf	<	0.008004	s	P	<		M	Ta	<	0.028015				
M	Be	<	0.002001	O	Hg	<	0.012000	M	Pb	<	0.012006	M	Tb	<	0.001200				
M	Bi		0.000080	M	Ho	<	0.002001	M	Pd	<	0.020011	M	Te	<	0.120066				
O	Ca	<	0.000020	M	In	<	0.040022	M	Pr	<	0.001200	M	Th	<	0.004002				
M	Cd		0.000310	M	Ir	<	0.020011	M	Pt	<	0.008004	O	Ti	<	0.000650				
M	Ce	<	0.020011	O	K	<	0.001800	M	Rb	<	0.004002	M	Tl	<	0.004002				
M	Co	<	0.012006	M	La	<	0.002001	M	Re	<	0.004002	M	Tm	<	0.001600				
M	Cr	<	0.020011	O	Li	<	0.000020	M	Rh	<	0.004002	M	U	<	0.008004				
M	Cs	<	0.001200	M	Lu	<	0.001600	M	Ru	<	0.008004	M	V	<	0.008004				
O	Cu	<	0.001400	O	Mg	<	0.000030	O	S	<	0.025000	M	W	<	0.040022				
M	Dy	<	0.024013	M	Mn	<	0.016008	O	Sb	<	0.014000	M	Y	<	0.160088				
M	Er	<	0.020011	M	Mo	<	0.008004	M	Sc	<	0.040022	M	Yb	<	0.004002				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

SwRI Chem ID: 60421
SwRI Chem ID: 60421
SwRI Chem ID: 60421

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 30.97 +5 6 O=P(OH)2(O)1-
Chemical Compatibility -Soluble in HCl, HNO3, H2SO4 and HF aqueous matrices water and NH4OH. Stable with all metals and inorganic anions at low to moderate ppm levels under acidic conditions; precipitates with several metals occur in neutral media at higher concentrations.
Stability - 2-100 ppb levels- stability unknown - in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 0-1% HNO3 / LDPE container.
P Containing Samples (Preparation and Solution) -Metal (Never found free in nature); Oxides (Water soluble); Ores (Naturally occurring only as the phosphate except for a few rare minerals found in meteorites - Na2CO3fusion in Pt0); Organic Matrices (Dry ash mixed with Na2CO3 in Pt0 at 450EC then increase heat to 1000EC to fuse; or perform an H2SO4 / H2O2 acid digestion).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 31 amu	6000+ ppt	n/a	15N21H, 15N16O, 14N17O, 13C18O, 12C18O1H, 62Ni2+
ICP-OES 177.495 nm	0.01 / 0.005 µg/mL	1	Cu, Hf
ICP-OES 178.287 nm	0.03 / 0.002 µg/mL	1	I
ICP-OES 213.618 nm	0.08 / 0.03 µg/mL	1	Cu, Mo

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

SwRI Chem ID: 60421
SwRI Chem ID: 60421
SwRI Chem ID: 60421

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 23, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- April 23, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

SwRI Chem ID: 60421
SwRI Chem ID: 60421
SwRI Chem ID: 60421

Chemical Information Sheet

011866

#60136

Spike Sample Standard I

Grade:	Analytical
Type:	Commercial Stock
CAS:	- No Data -
Lot:	12-62YPX
Received:	07/22/2015
Expiration:	07/30/2016
Location:	- No Data -
Current Lab:	Lab 48 Bldg 70
Original Amount:	500 mL
Amount Remaining:	500
Supplier:	Spex Certiprep
Concentration:	
Project:	- No Data -
PO Number:	H49980MM
Internal Lab ID:	- No Data -
Density:	- No Data -
Storage Requirement:	Ambient
Measuring Device ID:	- No Data -
Date Disposed:	- No Data -
Notes:	

Component Table

Compound	Conc/Activity	CAS
Aluminum	200 mg/L	7429-90-5
Arsenic	200 mg/L	7440-38-2
Barium	200 mg/L	10022-31-8
Selenium	200 mg/L	7782-49-2
Thallium	200 mg/L	10102-45-1
Iron	100 mg/L	7439-89-6
Cobalt	50 mg/L	7440-48-4
Manganese	50 mg/L	7439-96-5
Nickel	50 mg/L	7440-02-0
Lead	50 mg/L	10099-74-8
Antimony	50 mg/L	7440-36-0
Vanadium	50 mg/L	7647-01-0
Zinc	50 mg/L	7440-66-6
Copper	25 mg/L	7440-50-8
Chromium	20 mg/L	7440-47-3
Silver	5 mg/L	7440-22-4
Beryllium	5 mg/L	7440-41-7
Cadmium	5 mg/L	7440-43-9

SwRI Chem ID: 60136

ACCREDITED
Reference Materials Producer
Cert #2495.01

SPEXertificate®

Certificate of Reference Material

ACCREDITED
Chemical Testing
Cert #2495.02

Catalog Number: SPIKE-1-500 **Lot No.** 12-62YPX

Description: Spike Sample Standard I

Matrix: 5% HNO_3 / Tr. Tart. Acid / Tr. HF

This **ASSURANCE®** Certified Reference Material, CRM, is intended primarily for use as a calibration standard or quality control standard for inorganic spectroscopic instrumentation such as ICP-OES, DCP, AA, ICP-MS, and XRF. It can be employed in USEPA, ASTM and other methods relevant to the certified properties listed below.

The CRM is prepared from high purity single element concentrates of individual elements using Class A laboratory ware to give precise concentrations. See side 2 for details of certification.

Instrumental Analysis by ICP Spectrometer:

Analyte	Labeled	Certified	Uncertainty	SRM	Analyte	Labeled	Certified	Uncertainty	SRM
Al	200 µg/mL	199 µg/mL	±1 µg/mL	3101a*	Pb	50 µg/mL	50.3 µg/mL	±0.3 µg/mL	3128*
As	200 µg/mL	201 µg/mL	±1 µg/mL	3103a*	Sb	50 µg/mL	49.8 µg/mL	±0.3 µg/mL	3102a*
Ba	200 µg/mL	201 µg/mL	±1 µg/mL	3104a*	V	50 µg/mL	50.0 µg/mL	±0.3 µg/mL	3165*
Se	200 µg/mL	197 µg/mL	±1 µg/mL	3149*	Zn	50 µg/mL	49.4 µg/mL	±0.3 µg/mL	3168a*
Tl	200 µg/mL	200 µg/mL	±1 µg/mL	3158*	Cu	25 µg/mL	25.3 µg/mL	±0.1 µg/mL	3114*
Fe	100 µg/mL	100 µg/mL	±0.5 µg/mL	3126a*	Cr	20 µg/mL	19.9 µg/mL	±0.1 µg/mL	3112a*
Co	50 µg/mL	50.3 µg/mL	±0.3 µg/mL	3113*	Ag	5 µg/mL	5.00 µg/mL	±0.03 µg/mL	3151*
Mn	50 µg/mL	50.1 µg/mL	±0.3 µg/mL	3132*	Be	5 µg/mL	5.00 µg/mL	±0.03 µg/mL	3105a*
Ni	50 µg/mL	49.8 µg/mL	±0.3 µg/mL	3136*	Cd	5 µg/mL	4.90 µg/mL	±0.02 µg/mL	3108*

* - indicates NIST SRM † - indicates SPEX CertiPrep CRM (when NIST SRM is not available)

SPEX CertiPrep Reference Multi: Lot# 11-23YP,10-63YP

Balances are calibrated regularly with weight sets traceable to NIST#s 32856, 32867 and others. This CRM is guaranteed stable and accurate to ±0.5% of the certified (measured) value. This includes uncertainty components due to preparation, measurement, homogeneity, and short-term and long-term stability. No measured concentration of any individual component exceeds ±2% of the labeled value. This guarantee is valid for a period of one year from the date of certification only when the material is unopened and stored under ambient laboratory conditions.

Date of Certification: _____ Certifying Officer: _____

SwRI Chem ID: 60136

SwRI Chem ID: 60136

011868

Report of Certification

SwRI Chem ID: 60136

This Certified Reference Material (CRM) has been prepared and certified under an ISO 9001:2008, ISO 17025:2005, and ISO Guide 34:2009 quality system consistent with the following guides:

- ISO 9001: Quality management systems – Requirements – certified by UL-DQS
- ISO 17025: General requirements for the competence of testing and calibration laboratories – accredited by A2LA
- ISO Guide 34: General requirements for the competence of reference material producers – accredited by A2LA
- ISO Guide 31: Reference Materials – Contents of certificates and labels
- ISO Guide 35: Reference Materials – General & Statistical Principals for Certification
- Guide To The Expression Of Uncertainty In Measurement 1997
- EURACHEM/CITAC Guide: Quantifying Uncertainty in Analytical Measurement – Second Edition
- ASTM Guide D6362-98
- NIST Technical Note 1297
- ILAC-G12:2000: Guidelines for the requirements for the competence of reference materials producers
- ISO/REMCO N280

Material Source:

All analytes and matrix materials are obtained and verified by SPEX CertiPrep from pre-qualified vendors as per ISO 9001:2008, ISO 17025:2005, and ISO Guide 34:2009 guidelines. Vendor identifications are proprietary, however sources of all materials used in the preparation and testing of SPEX CertiPrep CRMs are tracked and documented. For further assistance, please contact the Sales Support Department at crmsales@spexcsp.com.

Instructions for Use:

Primary usage of this CRM is in neat form or diluted serially with matrix of a purity at or greater than the purity of the original matrix solution. If dilution is required the diluent must be compatible with all certified analytes and contain stabilizers appropriate for the period of intended use. The CRM can also be used as a spike or with a spike, again with appropriate compatibility considerations. All solutions should be thoroughly mixed, by shaking, prior to use and never pipetted directly from the bottle. All surfaces that come in contact with the solution must be thoroughly cleaned and leached prior to use. Dilutions should be performed only with Class A volumetric glassware.

Method of Preparation:

Clean laboratory procedures and techniques have been used throughout the preparation. All materials, equipment, analytical instrumentation and personnel have been qualified prior to use. The highest purity acids applicable, 18 megohm, double deionized water, acid-leached triple-rinsed bottles (where appropriate), and Class A/calibrated volumetrics have been used in all preparations.

Homogeneity:

The homogeneity of the CRM has been confirmed by procedures consistent with ISO 17025:2005, ISO Guide 34:2009, and ASTM D6362-98 Appendix X2. Random, replicate samples of the final, packaged material have been analyzed to prove homogeneity in accordance with our internal procedure 4600 HOMOGEN 1A. Since the product is highly homogeneous, any sample size taken for analysis would be within the uncertainty budget. This is consistent with the intended use of the CRM.

Statistical Estimator and Confidence Limits:

The certified value 'X' listed on the reverse of this document is at the 95% level of confidence and can be expressed as:

- $X = x \pm U$ where X = certified value, U = expanded uncertainty, x = property value
- $U = ku_c$ where $k = 2$ is the coverage factor at the 95% confidence level
- u_c is obtained by combining the individual element standard uncertainty components u_i and $u_c = \sqrt{\Sigma u_i^2}$

Certification Traveler Report:

All certified values reported were derived from the Traveler Report (SPEX CertiPrep's traceability documentation) identified by the lot number of this CRM. During the stated period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution. For further assistance, please contact the Sales Support Department at crmsales@spexcsp.com.

Legal Notice:

SPEX CertiPrep reference materials are not for any cosmetic, drug or household application and are to be used only by qualified individuals who are trained in appropriate procedures. No claims against SPEX CertiPrep, LLC of any kind whatsoever, whether based on breach of warranty, alleged negligence, or otherwise, with respect to this Reference Material shall be greater than the purchase price. In no event shall SPEX CertiPrep, LLC be liable for any loss of profits or any incidental, special, or consequential damages.

SPEX CertiPrep
Your Science is Our Passion.

203 Norcross Ave, Metuchen, NJ 08840
www.spexcertiprep.com • E-mail: crmsales@spexcsp.com
Phone: 1-800-LAB-SPEX • Fax: 732-603-9647

Accredited to ISO 17025 Guide 34
ISO 17025 ISO Guide 34
Certificate No. 2567.01

SwRI Chem ID: 60136
SwRI Chem ID: 60136
SwRI Chem ID: 60136

Chemical Information Sheet

011863

#61569

Sulfur

Grade:	Analytical
Type:	Commercial Stock
CAS:	7704-34-9
Lot:	J2-S02028
Received:	09/18/2015
Expiration:	09/22/2016
Location:	- No Data -
Current Lab:	Lab 48 Bldg 70
Original Amount:	500 mL
Amount Remaining:	392.5
Supplier:	Inorganic Ventures
Concentration:	1000 mg/L
Project:	- No Data -
PO Number:	H53146K
Internal Lab ID:	- No Data -
Density:	1.000
Storage Requirement:	Ambient
Measuring Device ID:	- No Data -
Date Disposed:	- No Data -
Notes:	TCT Open Date: 09/22/15

Component Table

Compound	Conc/Activity	CAS

INORGANIC VENTURES
[illegible]
Christiansburg, VA 24073 - USA
[illegible]

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 863.01
ACCREDITED Reference Material Producer Certificate 863.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGS1
Lot Number:	J2-S02028
Matrix:	H2O
Value / Analyte(s):	1 000 µg/mL ea: S
Starting Material:	H2SO4
Starting Material Lot#:	X48058
Starting Material Purity:	100.0000%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1001 ± 3 µg/mL

Certified Density: 1.000 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1003 ± 5 µg/mL**
ICP Assay NIST SRM 3154 Lot Number: 892205

Assay Method #2 **1001 ± 2 µg/mL**
Acidimetric NIST SRM 84L Lot Number: 84L

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

SwRI Chem ID: 61569
SwRI Chem ID: 61569
SwRI Chem ID: 61569

Characterization of CRM by two independent methods | Characterization of CRM by one method

SwRI Chem ID: 61569

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2)^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.004003	M	Eu	<	0.006004	O	Na		0.000069	O	Se	<	0.006200	O	Zn	<	0.000400
O	Al	<	0.003000	O	Fe	<	0.001100	M	Nb	<	0.001000	O	Si	<	0.004100	M	Zr	<	0.010008
M	As	<	0.020016	M	Ga	<	0.002001	M	Nd	<	0.004003	M	Sm	<	0.002001				
M	Au	<	0.006004	M	Gd	<	0.002001	O	Ni	<	0.002300	M	Sn	<	0.010008				
O	B	<	0.009900	M	Ge	<	0.012009	n	Os	<		M	Sr	<	0.001000				
M	Ba	<	0.020016	M	Hf	<	0.004003	O	P	<	0.004800	M	Ta	<	0.014011				
O	Be	<	0.002000	O	Hg	<	0.011000	M	Pb	<	0.006004	M	Tb	<	0.000600				
M	Bi	<	0.000800	M	Ho	<	0.001000	M	Pd	<	0.010008	M	Te	<	0.060048				
O	Ca	<	0.003700	M	In	<	0.020016	M	Pr	<	0.000600	M	Th	<	0.002001				
M	Cd	<	0.006004	M	Ir	<	0.010008	M	Pt	<	0.004003	M	Ti	<	0.100080				
M	Ce	<	0.010008	O	K	<	0.001700	M	Rb	<	0.002001	M	Tl	<	0.002001				
M	Co	<	0.006004	M	La	<	0.001000	M	Re	<	0.002001	M	Tm	<	0.000800				
M	Cr	<	0.010008	O	Li	<	0.000160	M	Rh	<	0.002001	M	U	<	0.004003				
M	Cs	<	0.000600	M	Lu	<	0.000800	M	Ru	<	0.004003	M	V	<	0.004003				
M	Cu	<	0.012009	O	Mg	<	0.000040	s	S	<		M	W	<	0.020016				
M	Dy	<	0.012009	M	Mn	<	0.008006	M	Sb	<	0.001000	M	Y	<	0.080064				
M	Er	<	0.010008	M	Mo	<	0.004003	M	Sc	<	0.020016	M	Yb	<	0.002001				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

SwRI Chem ID: 61569

SwRI Chem ID: 61569

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 32.07 +6 6 (O=)2 S(OH)2
Chemical Compatibility -Soluble in HCl, HNO3, H3PO4 and HF aqueous matrices water and NH4OH . Stable with all metals and inorganic anions at low to moderate ppm levels under acidic conditions except Ba and Pb and to a lesser extent Sr, and Ca.
Stability - 2-100 ppb levels- stability unknown- in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in LDPE container.
S Containing Samples (Preparation and Solution) -We most often get questions about the determination of S in Rocks, Silicates and insoluble sulfates (the finely powered sample is fused in a Pt0 crucible with 6 times its weight of Na2CO3 + 0.5 grams KNO3. The fuseate is extracted with water. Any BaSO4 present in the sample is transposed by the carbonate fusion to the BaCO3 which is left behind in the water-insoluble residue. If PbSO4 is present the fuseate should be boiled with a sodium carbonate saturated with CO2 solution for 1 hour or more where the PbSO4 will be transposed to the water insoluble carbonate which can be filtered off. Boiling the fuseate with a saturated carbonate solution is good insurance for samples containing Ba, Sr, and Ca. The Ba, Pb, Sr, Ca, free filtrate can be acidified and measured by ICP.)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 32 amu	30,000 ppt	n/a	16O2, 14N18O, 15N17O, 14N17O1H, 15N16O1H
ICP-OES 143.328 nm	0.4 / 0.035 µg/mL	1	
ICP-OES 166.669nm	0.2 / 0.19 µg/mL	1	Si, B
ICP-OES 182.034 nm	0.3 / 0.024 µg/mL	1	

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

SwRI Chem ID: 61569
SwRI Chem ID: 61569
SwRI Chem ID: 61569

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 25, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **March 25, 2018**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _09/22/15_Exp:__09/22/2016_____

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

SwRI Chem ID: 61569
SwRI Chem ID: 61569
SwRI Chem ID: 61569

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

SwRI Chem ID: 61569
SwRI Chem ID: 61569
SwRI Chem ID: 61569

Chemical Information Sheet

011875

#55933

CCS-1

Grade:	Analytical
Type:	Commercial Stock
CAS:	- No Data -
Lot:	G2-MEB468086
Received:	02/17/2015
Expiration:	02/26/2016
Location:	- No Data -
Current Lab:	Lab 48 Bldg 70
Original Amount:	125 mL
Amount Remaining:	120.28S
Supplier:	Inorganic Ventures
Concentration:	
Project:	- No Data -
PO Number:	H38211E
Internal Lab ID:	- No Data -
Density:	- No Data -
Storage Requirement:	Ambient
Measuring Device ID:	- No Data -
Date Disposed:	03/01/2016
Notes:	TCT Bag Open: 02/26/15

Component Table

Compound	Conc/Activity	CAS
Cerium	100 ug/mL	7440-45-1
Dysprosium	100 ug/mL	7429-91-6
Erbium	100 ug/mL	7440-52-0
Europium	100 ug/mL	7440-53-1
Gadolinium	100 ug/mL	7440-54-2
Holmium	100 ug/mL	12055-62-8
Lanthanum	100 ug/mL	7439-91-0
Lutetium	100 ug/mL	12032-20-1
Neodymium	100 ug/mL	1313-97-9
Praseodymium	100 ug/mL	7440-10-0
Scandium	100 ug/mL	7440-20-2
Samarium	100 ug/mL	7440-19-9
Terbium	100 ug/mL	7440-27-9
Thorium	100 ug/mL	7440-29-1
Thulium	100 ug/mL	7440-30-4
Uranium	100 ug/mL	7440-61-1
Yttrium	100 ug/mL	7440-65-5
Ytterbium	100 ug/mL	7440-64-4

INORGANIC VENTURES™
300 Technology Drive
Christiansburg, VA 24073 • USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 • 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

SwRI Chem ID: 55933

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number (010105).

ACCREDITED Testing Laboratory Certificate 983.01 ACCREDITED Reference Material Producer Certificate 983.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	CCS-1
Lot Number:	G2-MEB499122
Matrix:	7.14% (v/v) HNO3
Value / Analyte(s):	100 µg/mL ea:

Ce,	Dy,	Er,
Eu,	Gd,	Ho,
La,	Lu,	Nd,
Pr,	Sc,	Sm,
Tb,	Th,	Tm,
U,	Y,	Yb

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Cerium	100.0 ± 0.6 µg/mL	Dysprosium	100.0 ± 0.7 µg/mL
Erbium	100.0 ± 0.6 µg/mL	Europium	100.0 ± 0.6 µg/mL
Gadolinium	100.0 ± 0.6 µg/mL	Holmium	100.0 ± 0.7 µg/mL
Lanthanum	100.0 ± 0.7 µg/mL	Lutetium	100.0 ± 0.5 µg/mL
Neodymium	100.0 ± 0.4 µg/mL	Praseodymium	100.0 ± 0.7 µg/mL
Samarium	100.0 ± 0.7 µg/mL	Scandium	100.0 ± 0.8 µg/mL
Terbium	100.0 ± 0.7 µg/mL	Thorium	100.0 ± 0.7 µg/mL
Thulium	100.0 ± 0.7 µg/mL	Uranium	100.0 ± 0.7 µg/mL
Ytterbium	100.0 ± 0.6 µg/mL	Yttrium	100.0 ± 0.7 µg/mL

Certified Density: 1.045 g/mL (measured at 20 ± 1 °C)

Assay Information:

SwRI Chem ID: 55933

SwRI Chem ID: 55933

SwRI Chem ID: 55933

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ce	ICP Assay	3110	890602
Ce	EDTA	928	928
Dy	ICP Assay	3115a	990504
Dy	EDTA	928	928
Er	ICP Assay	3116a	000831
Er	EDTA	928	928
Eu	ICP Assay	3117a	991307
Eu	EDTA	928	928
Gd	ICP Assay	3118a	992004
Gd	EDTA	928	928
Ho	ICP Assay	3123a	790812
Ho	EDTA	928	928
La	ICP Assay	3127a	890402
La	EDTA	928	928
Lu	ICP Assay	3130a	100503
Lu	EDTA	928	928
Nd	ICP Assay	3135a	992803
Nd	EDTA	928	928
Pr	ICP Assay	3142a	990501
Pr	EDTA	928	928
Sc	ICP Assay	3148a	792111
Sc	EDTA	928	928
Sm	ICP Assay	3147a	892911
Sm	EDTA	928	928
Tb	ICP Assay	3157a	891603
Tb	EDTA	928	928
Th	ICP Assay	3159	992912
Th	EDTA	928	928
Tm	ICP Assay	3160a	790912
Tm	EDTA	928	928
U	Calculated		See Sec. 4.2
U	ICP Assay	3164	080521
Y	ICP Assay	3167a	790412
Y	EDTA	928	928
Yb	ICP Assay	3166a	790512
Yb	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Certified Value $(\bar{x}) = \frac{\Sigma x_i}{n}$ ($\bar{x}$) = mean

x_i = individual results

n = number of measurements

Uncertainty (±) = $2\ [\ \Sigma(s_i)^2\ ]^{1/2}$ 2 = the coverage factor.

$[\ \Sigma(s_i)^2\ ]^{1/2}$ = The square root of the sum of the squares of the most common errors (where 's' stands for the standard deviation) from instrumental measurement, density, NIST SRM uncertainty, weighing, dilution to volume, homogeneity, long term stability and short term stability.

No correction has been applied for transpiration that will occur after the CRM/RM bottle has been removed from the sealed aluminized bag. See Sec. 7.0 (Instructions for the Correct Use of this Reference Material) for more information.

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

SwRI Chem ID: 55933

SwRI Chem ID: 55933

SwRI Chem ID: 55933

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

- N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30°C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4°C. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

SwRI Chem ID: 55933

SwRI Chem ID: 55933

SwRI Chem ID: 55933

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

- November 13, 2013

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec. 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Period of Validity

- Sealed TCT Bag Open Date: 2/26/15

- This CRM/RM should not be used longer than one year from the date of opening the sealed TCT bag or after the date given in Sec. 11.3, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

11.3 Lot Expiration Date

- November 13, 2016

- The date after which this CRM/RM should not be used (See Sec. 11.2).

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

SwRI Chem ID: 55933

SwRI Chem ID: 55933

Chemical Information Sheet

011880

#55934

CCS-2

Grade:	Analytical
Type:	Commercial Stock
CAS:	- No Data -
Lot:	G2-MEB500143
Received:	02/17/2015
Expiration:	02/26/2016
Location:	- No Data -
Current Lab:	Lab 48 Bldg 70
Original Amount:	125 mL
Amount Remaining:	120.325
Supplier:	Inorganic Ventures
Concentration:	
Project:	- No Data -
PO Number:	H38211E
Internal Lab ID:	- No Data -
Density:	- No Data -
Storage Requirement:	Ambient
Measuring Device ID:	- No Data -
Date Disposed:	03/01/2016
Notes:	TCT Bag Open: 02/26/15

Component Table

Compound	Conc/Activity	CAS
Gold	100 ug/mL	7440-57-5
Iridium	100 ug/mL	7439-88-5
Palladium	100 ug/mL	7440-05-3
Platinum	100 ug/mL	7440-06-4
Rhodium	100 ug/mL	7440-16-6
Ruthenium	100 ug/mL	7440-18-8

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6729 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

SwRI Chem ID: 55934

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number (010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	CCS-2
Lot Number:	G2-MEB500143
Matrix:	10% (v/v) HCl
Value / Analyte(s):	100 µg/mL ea:

Au, Ir, Pd,
Pt, Rh, Ru

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Gold	100.0 ± 0.5 µg/mL	Iridium	100.0 ± 0.5 µg/mL
Palladium	100.0 ± 0.7 µg/mL	Platinum	100.0 ± 0.5 µg/mL
Rhodium	100.0 ± 0.7 µg/mL	Ruthenium	100.0 ± 0.7 µg/mL

Certified Density: 1.021 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Au	Calculated		See Sec. 4.2
Au	ICP Assay	3121	991806
Ir	ICP Assay		in - house std
Ir	Calculated		See Sec. 4.2
Pd	Calculated		See Sec. 4.2
Pd	ICP Assay	3138	090629
Pt	Calculated		See Sec. 4.2
Pt	ICP Assay	3140	000615
Rh	Calculated		See Sec. 4.2
Rh	ICP Assay	3144	070619
Ru	Calculated		in - house std
Ru	ICP Assay		in - house std

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

SwRI Chem ID: 55934

SwRI Chem ID: 55934

SwRI Chem ID: 55934

Certified Value $(\bar{x}) = \frac{\Sigma x_i}{n}$ ($\bar{x}$) = mean
x_i = individual results
n = number of measurements

Uncertainty (±) = 2 [$\Sigma(s_i)^2$]^{½} 2 = the coverage factor.
[$\Sigma(s_i)^2$]^{½} = The square root of the sum of the squares of the most common errors (where 's' stands for the standard deviation) from instrumental measurement, density, NIST SRM uncertainty, weighing, dilution to volume, homogeneity, long term stability and short term stability.

No correction has been applied for transpiration that will occur after the CRM/RM bottle has been removed from the sealed aluminized bag. See Sec. 7.0 (Instructions for the Correct Use of this Reference Material) for more information.

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

- N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30°C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4°C. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

SwRI Chem ID: 55934

SwRI Chem ID: 55934

SwRI Chem ID: 55934

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

- November 22, 2013

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given In Sec 7.1. This certification is nullified if instructions in Sec. 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Period of Validity

- Sealed TCT Bag Open Date: 2/26/15

- This CRM/RM should not be used longer than one year from the date of opening the sealed TCT bag or after the date given in Sec. 11.3, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

11.3 Lot Expiration Date

- November 22, 2016

- The date after which this CRM/RM should not be used (See Sec. 11.2).

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Christy Shortridge
Product Documentation Technician

Christy Shortridge

Certificate Approved By:

Allyson Guilliams
Quality Control Supervisor

Allyson Guilliams

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

SwRI Chem ID: 55934

SwRI Chem ID: 55934

Chemical Information Sheet

011884
#55936

CCS-4

Grade:	Analytical
Type:	Commercial Stock
CAS:	- No Data -
Lot:	H2-MEB550029
Received:	02/17/2015
Expiration:	02/26/2016
Location:	- No Data -
Current Lab:	Lab 48 Bldg 70
Original Amount:	125 mL
Amount Remaining:	108.14
Supplier:	Inorganic Ventures
Concentration:	
Project:	- No Data -
PO Number:	H38211E
Internal Lab ID:	- No Data -
Density:	1.041 g/mL
Storage Requirement:	Ambient
Measuring Device ID:	- No Data -
Date Disposed:	03/01/2016
Notes:	TCT Bag Open Date: 02-26-15

Component Table

Compound	Conc/Activity	CAS
Aluminum	100 ug/mL	7429-90-5
Arsenic	100 ug/mL	7440-38-2
Barium	100 ug/mL	10022-31-8
Beryllium	100 ug/mL	7440-41-7
Bismuth	100 ug/mL	7440-69-9
Calcium	100 ug/mL	1305-78-8
Cesium	100 ug/mL	7440-46-2
Gallium	100 ug/mL	7440-55-3
Indium	100 ug/mL	7440-74-6
Potassium	100 ug/mL	7440-09-7
Lithium	100 ug/mL	554-13-2
Magnesium	100 ug/mL	7439-95-4
Sodium	100 ug/mL	7440-23-5
Rubidium	100 ug/mL	7440-17-7
Selenium	100 ug/mL	7782-49-2
Strontium	100 ug/mL	7440-24-6

INORGANIC™ VENTURES

300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

tel: 800.669.6799 · 540.585.3030
Fax: 540.585.3012
info@inorganicventures.com

CERTIFICATE OF ANALYSIS

SwRI Chem ID: 55936

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number (010105).

ACCREDITED Testing Laboratory Certificate 883.01 — ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	CCS-4
Lot Number:	H2-MEB550029
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	100 µg/mL ea:

Al,	As,	Ba,
Be,	Bi,	Ca,
Cs,	Ga,	In,
K,	Li,	Mg,
Na,	Rb,	Se,
Sr		

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum	100.0 ± 0.5 µg/mL	Arsenic	100.0 ± 0.8 µg/mL	Barium	100.0 ± 0.5 µg/mL
Beryllium	100.0 ± 0.5 µg/mL	Bismuth	100.0 ± 0.6 µg/mL	Calcium	100.0 ± 0.4 µg/mL
Cesium	100.0 ± 0.5 µg/mL	Gallium	100.0 ± 0.5 µg/mL	Indium	99.9 ± 0.5 µg/mL
Lithium	100.0 ± 0.7 µg/mL	Magnesium	100.0 ± 0.5 µg/mL	Potassium	100.0 ± 0.4 µg/mL
Rubidium	100.0 ± 0.7 µg/mL	Selenium	100.0 ± 0.6 µg/mL	Sodium	100.0 ± 0.4 µg/mL
Strontium	100.0 ± 0.6 µg/mL				

Certified Density: 1.041 g/mL (measured at 20 ± 1 °C)

Assay Information:

SwRI Chem ID: 55936

SwRI Chem ID: 55936

011886

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Al	ICP Assay	3101a	060502
Al	EDTA	928	928
As	Calculated		See Sec. 4.2
As	ICP Assay	3103a	100818
Ba	Gravimetric		See Sec. 4.2
Ba	ICP Assay	3104a	070222
Be	Calculated		See Sec. 4.2
Be	ICP Assay	3105a	090514
Bi	Calculated		See Sec. 4.2
Bi	ICP Assay	3106	991212
Ca	ICP Assay	3109a	050825
Ca	EDTA	928	928
Cs	Gravimetric		See Sec. 4.2
Cs	IC Assay	3111a	050614
Ga	ICP Assay	3119a	890709
Ga	EDTA	928	928
In	ICP Assay	3124a	110516
In	EDTA	928	928
K	Gravimetric		See Sec. 4.2
K	ICP Assay	3141a	051220
Li	Gravimetric		See Sec. 4.2
Li	ICP Assay	3129a	100714
Mg	ICP Assay	3131a	050302
Mg	EDTA	928	928
Na	Gravimetric		See Sec. 4.2
Na	ICP Assay	3152a	120715
Rb	Gravimetric		See Sec. 4.2
Rb	IC Assay	3145a	891203
Se	Calculated		See Sec. 4.2
Se	ICP Assay	3149	100901
Sr	ICP Assay	3153a	990906
Sr	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Certified Value $(\bar{x}) = \frac{\Sigma x_i}{n}$

Uncertainty $(\pm) = 2\,[\,\Sigma(s_i)^2\,]^{1/2}$

($\bar{x}$) = mean
x_i = individual results
n = number of measurements
2 = the coverage factor.
$[\,\Sigma(s_i)^2\,]^{1/2}$ = The square root of the sum of the squares of the most common errors (where 's' stands for the standard deviation) from instrumental measurement, density, NIST SRM uncertainty, weighing, dilution to volume, homogeneity, long term stability and short term stability.

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

SwRI Chem ID: 55936
SwRI Chem ID: 55936
SwRI Chem ID: 55936

011887

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

- N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep tightly sealed when not in use. Store and use at 20 ± 4°C. Do not pipette from the container. Do not return removed aliquots to container.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

October 09, 2014

11.2 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.3. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

11.3 Expiration Date 10-09-2017

SwRI Chem ID: 55936
SwRI Chem ID: 55936
SwRI Chem ID: 55936

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

011888

Certificate Prepared By:

Christy Shortridge
Product Documentation Technician

Christy Shortridge

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

SwRI Chem ID: 55936
SwRI Chem ID: 55936
SwRI Chem ID: 55936

Chemical Information Sheet

011889
#55937

CCS-5

Grade:	Analytical
Type:	Commercial Stock
CAS:	- No Data -
Lot:	H2-MEB556118
Received:	02/17/2015
Expiration:	02/26/2016
Location:	- No Data -
Current Lab:	Lab 48 Bldg 70
Original Amount:	125 mL
Amount Remaining:	111.53
Supplier:	Inorganic Ventures
Concentration:	
Project:	- No Data -
PO Number:	H38211E
Internal Lab ID:	- No Data -
Density:	1.043 g/mL
Storage Requirement:	Ambient
Measuring Device ID:	- No Data -
Date Disposed:	03/01/2016
Notes:	TCT Bag Open Date: 02-26-15

Component Table

Compound	Conc/Activity	CAS
Boron	100 ug/mL	7440-42-8
Germanium	100 ug/mL	7440-56-4
Hafnium	100 ug/mL	7440-58-6
Molybdenum	100 ug/mL	7439-98-7
Niobium	100 ug/mL	7440-03-1
Phosphorus	100 ug/mL	7723-14-0
Rhenium	100 ug/mL	7440-15-5
Sulfur	100 ug/mL	7704-34-9
Antimony	100 ug/mL	7440-36-0
Silicon	100 ug/mL	7440-21-3
Tin	100 ug/mL	7440-31-5
Tantalum	100 ug/mL	7440-25-7
Tungsten	100 ug/mL	7440-33-7
Zirconium	100 ug/mL	7440-67-7
Titanium	100 ug/mL	

011890

INORGANIC VENTURES™
300 Technology Drive
Christiansburg, VA 24073 • USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800 669 6799 • 540 585 3033
fax: 540 585 3012
info@inorganicventures.com

SwRI Chem ID: 55937

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number (010105).

ACCREDITED Testing Laboratory Certificate 883.01 ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	CCS-5
Lot Number:	H2-MEB556118
Matrix:	7.14% (v/v) HNO_3 1.2% (v/v) HF
Value / Analyte(s):	100 µg/mL ea:

B,	Ge,	Hf,
Mo,	Nb,	P,
Re,	S,	Sb,
Si,	Sn,	Ta,
Ti,	W,	Zr

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony	100.1 ± 0.8 µg/mL	Boron	100.1 ± 0.7 µg/mL
Germanium	100.1 ± 0.7 µg/mL	Hafnium	100.1 ± 0.7 µg/mL
Molybdenum	100.1 ± 0.6 µg/mL	Niobium	100.1 ± 0.6 µg/mL
Phosphorus	100.1 ± 0.5 µg/mL	Rhenium	100.1 ± 0.6 µg/mL
Silicon	100.1 ± 0.8 µg/mL	Sulfur	100.1 ± 0.5 µg/mL
Tantalum	100.1 ± 0.5 µg/mL	Tin	100.1 ± 0.5 µg/mL
Titanium	100.1 ± 0.6 µg/mL	Tungsten	100.1 ± 0.6 µg/mL
Zirconium	100.1 ± 0.7 µg/mL		

Certified Density: 1.043 g/mL (measured at 20 ± 1 °C)

Assay Information:

SwRI Chem ID: 55937

SwRI Chem ID: 55937

SwRI Chem ID: 55937

ANALYTE	METHOD	NIST SRM#	SRM LOT#
B	ICP Assay	3107	070514
Ge	Calculated		See Sec. 4.2
Ge	ICP Assay	3120a	080429
Hf	Calculated		See Sec. 4.2
Hf	ICP Assay	3122	080430
Mo	ICP Assay	3134	891307
Nb	Calculated		See Sec. 4.2
Nb	ICP Assay	3137	120629Nb
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
Re	Calculated		See Sec. 4.2
Re	ICP Assay	3143	010816
S	ICP Assay	3154	892205
S	Acidimetric	84L	84L
Sb	Calculated		See Sec. 4.2
Sb	ICP Assay	3102A	061229
Si	Calculated		See Sec. 4.2
Si	ICP Assay	3150	071204
Sn	Calculated		See Sec. 4.2
Sn	ICP Assay	3161a	070330
Ta	Calculated		See Sec. 4.2
Ta	ICP Assay	3155	080502
Ti	Calculated		See Sec. 4.2
Ti	ICP Assay	3162a	060808
W	Calculated		See Sec. 4.2
W	ICP Assay	3163	080331
Zr	Calculated		See Sec. 4.2
Zr	ICP Assay	3169	071226

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Certified Value $(\bar{x}) = \frac{\sum x_i}{n}$ ($\bar{x}$) = mean
x_i = individual results
n = number of measurements

Uncertainty $(\pm) = 2\,[\,\Sigma(s_i)^2\,]^{1/2}$ 2 = the coverage factor.
$[\,\Sigma(s_i)^2\,]^{1/2}$ = The square root of the sum of the squares of the most common errors (where 's' stands for the standard deviation) from instrumental measurement, density, NIST SRM uncertainty, weighing, dilution to volume, homogeneity, long term stability and short term stability.

No correction has been applied for transpiration that will occur after the CRM/RM bottle has been removed from the sealed aluminized bag. See Sec. 7.0 (Instructions for the Correct Use of this Reference Material) for more information.

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

SwRI Chem ID: 55937

SwRI Chem ID: 55937

SwRI Chem ID: 55937

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

- N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30°C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4°C. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**.

- **HF Note:** This standard should not be prepared or stored in glass.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

SwRI Chem ID: 55937

SwRI Chem ID: 55937

SwRI Chem ID: 55937

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

- January 06, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec. 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year from the date of opening the sealed TCT bag or after the date given in Sec. 11.3, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

11.3 Lot Expiration Date

- January 06, 2018

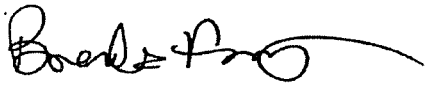
- The date after which this CRM/RM should not be used (See Sec. 11.2).

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

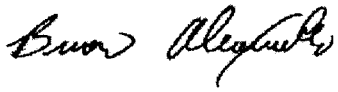
Certificate Prepared By:

Brenda Francis
Product Documentation Technician



Certificate Approved By:

Brian Alexander
PhD., Technical Process Director



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director



SwRI Chem ID: 55937

SwRI Chem ID: 55937

Chemical Information Sheet

011894

#55938

CCS-6

Grade:	Analytical
Type:	Commercial Stock
CAS:	- No Data -
Lot:	H2-MEB526142
Received:	02/17/2015
Expiration:	02/26/2016
Location:	- No Data -
Current Lab:	Lab 48 Bldg 70
Original Amount:	125 mL
Amount Remaining:	112.55
Supplier:	Inorganic Ventures
Concentration:	
Project:	- No Data -
PO Number:	H38211E
Internal Lab ID:	- No Data -
Density:	1.040 g/mL
Storage Requirement:	Ambient
Measuring Device ID:	- No Data -
Date Disposed:	03/01/2016
Notes:	TCT Bag Open Date: 02-26-15

Component Table

Compound	Conc/Activity	CAS
Silver	100 ug/mL	7440-22-4
Cadmium	100 ug/mL	7440-43-9
Cobalt	100 ug/mL	7440-48-4
Chromium	100 ug/mL	7440-47-3
Copper	100 ug/mL	7440-50-8
Iron	100 ug/mL	7439-89-6
Mercury	100 ug/mL	7439-97-6
Manganese	100 ug/mL	7439-96-5
Nickel	100 ug/mL	7440-02-0
Lead	100 ug/mL	10099-74-8
Thallium	100 ug/mL	10102-45-1
Vanadium	100 ug/mL	7647-01-0
Zinc	100 ug/mL	7440-66-6

INORGANIC VENTURES™
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com
tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

CERTIFICATE OF ANALYSIS

SwRI Chem ID: 55938

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number (010105).

ACCREDITED
Testing Laboratory
Certificate 683.01

ACCREDITED
Reference Material Producer
Certificate 683.02

2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution

Catalog Number: CCS-6

Lot Number: H2-MEB526142

Matrix: 7% (v/v) HNO3

Value / Analyte(s): 100 µg/mL ea:

Ag,	Cd,	Co,	Cr3,	Cu,	Fe,
Hg,	Mn,	Ni,	Pb,	Tl,	V,
Zn					

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ELEMENT	CERTIFIED VALUE	ELEMENT	CERTIFIED VALUE	ELEMENT	CERTIFIED VALUE
Cadmium, Cd	99.9 ± 0.5 µg/mL	Chromium+3, Cr3	99.9 ± 0.5 µg/mL	Cobalt, Co	99.9 ± 0.5 µg/mL
Copper, Cu	99.9 ± 0.7 µg/mL	Iron, Fe	99.9 ± 0.5 µg/mL	Lead, Pb	99.9 ± 0.5 µg/mL
Manganese, Mn	99.9 ± 0.4 µg/mL	Mercury, Hg	99.9 ± 0.7 µg/mL	Nickel, Ni	99.9 ± 0.5 µg/mL
Silver, Ag	99.9 ± 0.6 µg/mL	Thallium, Tl	99.9 ± 0.7 µg/mL	Vanadium, V	99.9 ± 0.5 µg/mL
Zinc, Zn	99.9 ± 0.6 µg/mL				

Certified Density: 1.040 g/mL (measured at 20 ± 1 °C)

Assay Information:

SwRI Chem ID: 55938

SwRI Chem ID: 55938

ELEMENT	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	992212
Ag	Volhard	999b	999b
Cd	ICP Assay	3108	060531
Cd	EDTA	928	928
Co	ICP Assay	3113	000630 Co
Co	EDTA	928	928
Cr3	Calculated		See Sec. 4.2
Cr3	ICP Assay	3112a	030730
Cu	ICP Assay	3114	011017
Cu	EDTA	928	928
Fe	ICP Assay	3126a	051031
Fe	EDTA	928	928
Hg	ICP Assay	3133	061204
Hg	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Tl	Calculated		See Sec. 4.2
Tl	ICP Assay	3158	993012
V	ICP Assay	3165	992706
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Certified Value $(\bar{x}) = \frac{\Sigma x_i}{n}$ ($\bar{x}$) = mean

x_i = individual results

n = number of measurements

Uncertainty (±) = $2\ [\ \Sigma(s_i)^2\ ]^{1/2}$ 2 = the coverage factor.

$[\ \Sigma(s_i)^2\ ]^{1/2}$ = The square root of the sum of the squares of the most common errors (where 's' stands for the standard deviation) from instrumental measurement, density, NIST SRM uncertainty, weighing, dilution to volume, homogeneity, long term stability and short term stability.

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep tightly sealed when not in use. Store and use at 20 ± 4°C. Do not pipette from the container. Do not return removed aliquots to container.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

SwRI Chem ID: 55938
SwRI Chem ID: 55938
SwRI Chem ID: 55938

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirments for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 13, 2014

11.2 Expiration Date 06-13-17

11.3 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.2. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Zach Saunders
Product Documentation Technician

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

SwRI Chem ID: 55938
SwRI Chem ID: 55938
SwRI Chem ID: 55938

Chemical Information Sheet

011898
#55935

Tellurium

Grade:	Analytical
Type:	Commercial Stock
CAS:	13494-80-9
Lot:	H2-TE01117R
Received:	02/17/2015
Expiration:	02/26/2016
Location:	- No Data -
Current Lab:	Lab 48 Bldg 70
Original Amount:	125 mL
Amount Remaining:	120.45
Supplier:	Inorganic Ventures
Concentration:	100 ug/mL
Project:	- No Data -
PO Number:	H38211E
Internal Lab ID:	- No Data -
Density:	1.043 g/mL
Storage Requirement:	Ambient
Measuring Device ID:	- No Data -
Date Disposed:	03/01/2016
Notes:	TCT Bag Open Date: 02-26-15

Component Table

Compound	Conc/Activity	CAS

INORGANIC VENTURES™

300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

CERTIFICATE OF ANALYSIS

SwRI Chem ID: 55935

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number (010105).

ACCREDITED Testing Laboratory Certificate 883.01 ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Mass Spec Solution
Catalog Number:	MSTEN-100PPM
Lot Number:	H2-TE01117R
Matrix:	7% HNO3 (v/v)
Value/Analyte(s):	100 µg/mL Tellurium
Starting Material:	Te powder
Starting Material Lot#:	1546
Starting Material Purity:	99.9984%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 100.48 ± 0.68 µg/mL

Certified Density: 1.043 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **99.37 ± 0.80 µg/mL**
ICP Assay NIST SRM 3156 Lot Number: 892901

Assay Method #2
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

SwRI Chem ID: 55935

SwRI Chem ID: 55935

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	< 0.000200	M	Er	< 0.000502	O	Mn	< 0.000030	O	S	< 0.072000	O	V	< 0.000900
O	Al	< 0.003000	M	Eu	< 0.000301	M	Mo	< 0.000200	O	Sb	< 0.050000	M	W	< 0.001004
M	As	< 0.001004	O	Fe	< 0.001500	O	Na	0.000502	M	Sc	< 0.001004	M	Y	< 0.004018
M	Au	< 0.000301	O	Ga	< 0.005000	M	Nb	< 0.000050	O	Se	< 0.050000	M	Yb	< 0.000100
O	B	< 0.000600	O	Gd	< 0.002000	O	Nd	< 0.005000	O	Si	< 0.003400	O	Zn	< 0.000200
M	Ba	< 0.001004	O	Ge	< 0.004000	O	Ni	< 0.003000	M	Sm	< 0.000100	M	Zr	< 0.000502
O	Be	< 0.000200	M	Hf	< 0.000200	n	Os	<	O	Sn	< 0.004000			
M	Bi	0.000121	O	Hg	< 0.011000	O	P	< 0.002500	O	Sr	< 0.000070			
O	Ca	0.000803	M	Ho	< 0.000050	M	Pb	0.000090	M	Ta	< 0.000703			
M	Cd	< 0.000301	O	In	< 0.033000	M	Pd	< 0.000502	M	Tb	< 0.000030			
O	Ce	< 0.006000	M	Ir	< 0.000502	O	Pr	< 0.004000	s	Te	<			
M	Co	< 0.000301	O	K	< 0.001700	O	Pt	< 0.006000	M	Th	< 0.000100			
M	Cr	< 0.000502	M	La	< 0.000050	M	Rb	< 0.000100	M	Ti	< 0.005023			
M	Cs	< 0.000030	O	Li	< 0.000030	M	Re	< 0.000100	M	Tl	< 0.000100			
M	Cu	< 0.000602	M	Lu	< 0.000040	M	Rh	< 0.000100	O	Tm	< 0.001000			
M	Dy	< 0.000602	M	Mg	0.000222	M	Ru	< 0.000200	M	U	< 0.000200			

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

SwRI Chem ID: 55935
SwRI Chem ID: 55935
SwRI Chem ID: 55935

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

SwRI Chem ID: 55935

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep tightly sealed when not in use. Store and use at 20 ± 4°C. Do not pipette from the container. Do not return removed aliquots to container.

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 127.60 +4 6 H_2TeO_3 (HNO_3 matrix), $TeCl_6^{2-}$ (HCl matrix)

Chemical Compatibility -Soluble in HCl, HNO_3,H_3PO_4, H_2SO_4 and HF aqueous matrices and water. It is stable with most inorganic anions and cations. Avoid mixing HCl matrices with elements forming insoluble chlorides such as Ag^+. When fluorinated and/or under acidic conditions precipitation is typically not a problem at moderate to low concentrations.

Stability - 2-100 ppb levels- stable for months alone or mixed with other elements at equivalent levels in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.

Te Containing Samples (Preparation and Solution) -Metal (soluble in solutions of alkali hydroxides or a 1:1:1 mixture of H_2O, H_2SO_4, HNO_3); Oxides (TeO_2 is soluble in HCl and the alkali hydroxides. $TeO_3$is soluble in hot concentrated solutions of the alkali hydroxides.); Minerals and alloys (acid digestion with HNO_3or HNO_3 / HF); Organic Matrices (Vegetable Matter - dry ash 100 g of the well-ground and mixed vegetation into a concentrated solution of 25 g of magnesium nitrate and magnesium oxide. Dry, ignite and muffle until the ash is a uniform gray color.)

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 130 amu	20 ppt	N/A	114Cd16O, 114Sn16O
ICP-OES 170.000 nm	0.04/0.004 µg/mL	1	Sn
ICP-OES 214.281 nm	0.04/0.004 µg/mL	1	Ta, Re, V
ICP-OES 225.902 nm	0.20/0.02 µg/mL	1	Ir, Os W, Ga, Ru, Ta

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

SwRI Chem ID: 55935

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

SwRI Chem ID: 55935

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 01, 2014

11.2 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.3. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

11.3 Expiration Date 12-01-2017

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

SwRI Chem ID: 55935
SwRI Chem ID: 55935
SwRI Chem ID: 55935

Chemical Information Sheet

011903

#47552

Natural Uranium 106RadSol3

Grade:	Analytical
Type:	Working Level Solution
CAS:	- No Data -
Lot:	- No Data -
Received:	10/17/2013
Expiration:	04/07/2016
Location:	- No Data -
Current Lab:	Lab 46 Bldg 70
Original Amount:	100 mL
Amount Remaining:	66.66
Supplier:	- No Data -
Concentration:	
Project:	- No Data -
PO Number:	- No Data -
Internal Lab ID:	- No Data -
Density:	1
Storage Requirement:	Ambient
Measuring Device ID:	- No Data -
Date Disposed:	- No Data -
Notes:	Secondary recertification 120RadSol3 on 04.11.14.

Rad License:	L00775
Rad License Line:	

Sources Table

Mix created by wnaegeli on 10/23/13 9:57:53 PM.

ID	Source	Manufacturer	Lot	Amount
47551	Natural Uranium 104RadSol3			5 ml

Component Table

Compound	Conc/Activity	CAS	Rad License	License Line
Uranium-238	25.012 pCi/ml			
Uranium-235	1.1517 pCi/ml			
Uranium-234	25.2265 pCi/ml			
U238	74.4183 mg/L			
U235	0.5329 mg/L			
U234	0.004054 mg/L			
U-tot	74.9553 mg/L			

011904

SwRI Chem ID: 47500
SwRI Chem ID: 47552

Eckert & Ziegler
Isotope Products

24937 Avenue Tibbitts
Valencia, California 91355

Tel 661•309•1010
Fax 661•257•8303

CERTIFICATE OF CALIBRATION
ALPHA STANDARD SOLUTION

Radionuclide:	U-238 (NAT)	**Customer:**	SOUTHWEST RESEARCH INSTITUTE
Half-life:	(4.468 ± 0.005)E+09 years	**P.O. No.:**	F51871MM
Catalog No.:	7338	**Reference Date:**	1-Nov-13 12:00 PST
Source No.:	1705-8	**Contained Radioactivity:** (Total uranium)	102.8 nCi 3.804 kBq

Physical Description:

A.	Mass of solution:	5.20145 g in 5 mL flame-sealed ampoule
B.	Chemical form:	$UO_2(NO_3)_2$ in dilute HNO_3
C.	Carrier content:	None
D.	Density:	1.040 g/mL @ 20°C

Radioimpurities:

See Technical Data Sheet

Radionuclide Concentration: 19.76 nCi/g, 0.7311 kBq/g

Method of Calibration:

Activity calculations are based upon known specific activity and mass.

SwRI Chem ID: 47500
SwRI Chem ID: 47552

Uncertainty of Measurement:

A.	Type A (random) uncertainty:	± 0.0 %
B.	Type B (systematic) uncertainty:	± 3.0 %
C.	Uncertainty in aliquot weighing:	± 0.0 %
D.	Total uncertainty at the 99% confidence level:	± 3.0 %

Notes:

- See reverse side for leak test(s) performed on this source.
- EZIP participates in a NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (as in NRC Regulatory Guide 4.15).
- Nuclear data was taken from "Table of Radioactive Isotopes", edited by Virginia Shirley, 1986.
- This solution has a working life of 5 years.

Daniel James Van Dalsem
Quality Control

10-OCT-13
Date

EZIP Ref. No.: 1705-8

SwRI Chem ID: 47500
SwRI Chem ID: 47552

011905

Eckert & Ziegler
Isotope Products

24937 Avenue Tibbitts
Valencia, California 91355

Tel 661•309•1010
Fax 661•257•8303

SwRI Chem ID: 47500
SwRI Chem ID: 47552

U-238 Natural Technical Data

The U-238 Natural used to prepare your order was taken from Eckert & Ziegler Isotope Products Lot #4550107
It had the following composition as of 30 Jan 13:

Nuclide	Atom %	Activity %
U-234	0.0055	49.088
U-235	0.7200	2.241
U-238	99.274	48.671

Isotopic composition provided by New Brunswick Laboratory.

If you have any question, please contact Eckert & Ziegler Isotope Products Technical Service: (661) 309-1010

SwRI Chem ID: 47500
SwRI Chem ID: 47552

SwRI Chem ID: 47500
SwRI Chem ID: 47552

011906

Chemical Information Sheet

Natural Uranium 104RadSol3

#47551

SwRI Chem ID: 47552

Grade:	Analytical
Type:	Working Level Solution
CAS:	- No Data -
Lot:	- No Data -
Received:	10/17/2013
Expiration:	10/23/2014
Location:	- No Data -
Current Lab:	Lab 46 Bldg 70
Original Amount:	100 mL
Amount Remaining:	90
Supplier:	- No Data -
Concentration:	100 %
Project:	- No Data -
PO Number:	- No Data -
Internal Lab ID:	- No Data -
Density:	1
Storage Requirement:	Ambient
Measuring Device ID:	- No Data -
Date Disposed:	- No Data -
Notes:	Secondary certification 106RadSol3 CI#47552

Rad License:	L00775
Rad License Line:	

Sources Table

Mix created by wnaegeli on 10/23/13 7:34:47 PM.

ID	Source	Manufacturer	Lot	Amount
47500	Uranium-238	Eckert&Ziegler Isotope Products	1705-8	S.20145 g

SwRI Chem ID: 47552

Component Table

Compound	Conc/Activity	CAS	Rad License	License Line
Uranium-238	5.3470906 ug/L			

SwRI Chem ID: 47552

011907

Chemical Information Sheet

Natural Uranium 106RadSol3

#47552

SwRI Chem ID: 47552

Grade:	Analytical
Type:	Working Level Solution
CAS:	- No Data -
Lot:	- No Data -
Received:	10/17/2013
Expiration:	04/02/2015
Location:	- No Data -
Current Lab:	Lab 46 Bldg 70
Original Amount:	100 mL
Amount Remaining:	80
Supplier:	- No Data -
Concentration:	100 %
Project:	- No Data -
PO Number:	- No Data -
Internal Lab ID:	- No Data -
Density:	1
Storage Requirement:	Ambient
Measuring Device ID:	- No Data -
Date Disposed:	- No Data -
Notes:	Secondary recertification 120RadSol3 on 04.11.14.

Rad License:	L00775
Rad License Line:	

Sources Table

Mix created by wnaegeli on 10/23/13 9:57:53 PM.

ID	Source	Manufacturer	Lot	Amount
47551	Natural Uranium 104RadSol3			5 ml

Component Table

Compound	Conc/Activity	CAS	Rad License	License Line
Uranium-238	0.26735453 ug/L			

SwRI Chem ID: 47552

SwRI Chem ID: 47552

011908

Chemical Information Sheet

Natural Uranium 120RadSol3

#51009

SwRI Chem ID: 47552

Grade:	Analytical
Type:	Working Level Solution
CAS:	- No Data -
Lot:	- No Data -
Received:	04/02/2014
Expiration:	04/02/2015
Location:	- No Data -
Current Lab:	Lab 46 Bldg 70
Original Amount:	100 mL
Amount Remaining:	100
Supplier:	- No Data -
Concentration:	100 %
Project:	- No Data -
PO Number:	- No Data -
Internal Lab ID:	- No Data -
Density:	1
Storage Requirement:	Ambient
Measuring Device ID:	- No Data -
Date Disposed:	- No Data -
Notes:	

Rad License:	00775
Rad License Line:	

Sources Table

Mix created by WNaegeli on 06/03/14 4:15:51 PM.

ID	Source	Manufacturer	Lot	Amount
47552	Natural Uranium 106RadSol3			20 ml

SwRI Chem ID: 47552

Component Table

Compound	Conc/Activity	CAS	Rad License	License Line
Uranium-238	0.053470906 ug/L			

SwRI Chem ID: 47552

SwRI Chem ID: 47552

011909

BOOK / PAGE 03 00120 Book I.D: 10-0406-017

Southwest Research Institute®
6220 Culebra Rd.
San Antonio, Texas 78238

Radioactive Standards Log

Standard : 120RadSOL3

Vendor(s) : Eckert & Ziegler

Radionuclide(s) : Nat. U.
CI 51009

Source I.D. : 1705-8
CI#47552

Dilution : Tertiary

Procedure :

20mL of Nat.U. (CI#47552) was diluted to a final volume of 100ml with 2% nitric acid (CI#49143).

$\frac{20mL \times 25.012 \frac{pCi}{mL} \ U238}{100mL} = 5.0024 \frac{pCi}{mL} \ U238$ ~~U25~~ WAP 04/02/14 RE

$\frac{20mL \times 25.2265 \frac{pCi}{mL} \ U234}{100mL} = 5.0453 \frac{pCi}{mL} \ U234$

$\frac{20mL \times 1.1517 \frac{pCi}{mL} \ U235}{100mL} = 0.23034 \frac{pCi}{mL} \ U235$

Final Activity :	See Above	Reference Date :	1-Nov-2013
Date Prepared :	04/02/14	Certification Date :	04/11/14
Prepared By :	Megan A. Nagel	Re-Certification Date :	04/02/15
Reviewed By :	[signature]	Date: 6/3/14	

FRM-059 (Rev 1/Apr 10)

SwRI Chem ID: 47552
SwRI Chem ID: 47552
SwRI Chem ID: 47552

BOOK / PAGE__03 00121_____ Book I.D:_10-0406-017____

Southwest Research Institute®
6220 Culebra Rd.
San Antonio, Texas 78238

Radioactive Standards Log

Standard Verification(s) :

Standards Verification Form				Analyzed		11-Apr-14	
Am243 112RadSol3				120RadSol3 Natural Uranium			
Tracer				U238 - Standard - Verification			
	Read	TV		Read	Corrected	TV	
ID	pCi	pCi	%R	pCi	pCi	pCi	%R
120A	5182.0	10.7591	21.7%	2419.0	5.0224	5.0024	100.4%
120B	5047.0	10.7591	21.1%	2353.0	5.0181	5.0024	100.3%
120C	5089.0	10.7591	21.3%	2430.0	5.1375	5.0024	102.7%
120D	5306.0	10.7591	22.2%	2516.0	5.1018	5.0024	102.0%
						avg-4	101.3%
						Stdev	1.20%
						Conf Int	1.17%

Wooden-Maresh 06/03/14

WMM 06/03/14

SwRI Chem ID: 47552
SwRI Chem ID: 47552
SwRI Chem ID: 47552

Chemical Information Sheet

011911

#47222

Uranium-236 098RadSol3

Grade:	Research
Type:	Working Level Solution
CAS:	- No Data -
Lot:	- No Data -
Received:	03/07/2012
Expiration:	07/13/2015
Location:	- No Data -
Current Lab:	Lab 47 Bldg 70
Original Amount:	100 mL
Amount Remaining:	100
Supplier:	- No Data -
Concentration:	1616 ug/L
Project:	- No Data -
PO Number:	- No Data -
Internal Lab ID:	- No Data -
Density:	1
Storage Requirement:	Ambient
Measuring Device ID:	- No Data -
Date Disposed:	- No Data -
Notes:	Recertified 07/13/14

Rad License:	L00775
Rad License Line:	

Sources Table

Mix created by WNaegeli on 09/11/13 10:42:46 AM.

ID	Source	Manufacturer	Lot	Amount
47220	Uranium-236 096RadSol3			1 ml

Component Table

Compound	Conc/Activity	CAS	Rad License	License Line
U-236	1616 ug/L	13982-70-2		

Chemical Information Sheet

011912
#61567

Scandium

Grade:	Analytical
Type:	Commercial Stock
CAS:	7440-20-2
Lot:	H2-SC02123
Received:	09/18/2015
Expiration:	09/22/2016
Location:	- No Data -
Current Lab:	Lab 48 Bldg 70
Original Amount:	500 mL
Amount Remaining:	492.6
Supplier:	Inorganic Ventures
Concentration:	1000 mg/L
Project:	- No Data -
PO Number:	H53146K
Internal Lab ID:	- No Data -
Density:	1.038 g/mL
Storage Requirement:	Ambient
Measuring Device ID:	- No Data -
Date Disposed:	- No Data -
Notes:	TCT Open Date: 09/22/15

Component Table

Compound	Conc/Activity	CAS

INORGANIC VENTURES

CERTIFICATE OF ANALYSIS

SwRI Chem ID: 61567

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 683.01

ACCREDITED Reference Material Producer Certificate 683.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGSC1
Lot Number:	H2-SC02123
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Sc
Starting Material:	Sc2O3
Starting Material Lot#:	1745
Starting Material Purity:	99.9883%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 996 ± 5 µg/mL - weighted mean

Certified Density: 1.038 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **994 ± 3 µg/mL**
ICP Assay NIST SRM 3148a Lot Number: 100701

Assay Method #2 **997 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

SwRI Chem ID: 61567

SwRI Chem ID: 61567

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000236	M	Eu	<	0.000236	M	Na		0.005227	M	Se	<	0.118050	M	Zn	0.001546
M	Al		0.001209	O	Fe		0.000518	M	Nb	<	0.000236	O	Si		0.016752	M	Zr	0.005859
M	As	<	0.009444	M	Ga	<	0.000472	M	Nd	<	0.001180	M	Sm	<	0.000236			
M	Au	<	0.000473	M	Gd	<	0.000236	M	Ni	<	0.018888	M	Sn	<	0.002361			
O	B		0.000785	M	Ge	<	0.002597	M	Os	<	0.004726	M	Sr	<	0.001180			
M	Ba	<	0.004722	M	Hf		0.001437	O	P	<	0.056750	M	Ta	<	0.000236			
M	Be	<	0.000236	M	Hg	<	0.002363	M	Pb		0.005619	M	Tb	<	0.000236			
M	Bi	<	0.000236	M	Ho	<	0.000236	M	Pd	<	0.000236	M	Te	<	0.007083			
O	Ca		0.030049	M	In	<	0.000236	M	Pr	<	0.000236	M	Th	<	0.000472			
M	Cd	<	0.000236	M	Ir	<	0.000236	M	Pt	<	0.000472	M	Ti	<	0.009444			
M	Ce	<	0.001889	O	K		0.004816	M	Rb	<	0.002361	M	Tl	<	0.000236			
M	Co	<	0.000472	M	La	<	0.002361	M	Re	<	0.000708	M	Tm	<	0.000236			
O	Cr	<	0.006810	M	Li	<	0.001180	M	Rh	<	0.000236	M	U	<	0.001180			
M	Cs	<	0.000236	M	Lu	<	0.000236	M	Ru	<	0.000236	M	V	<	0.016527			
O	Cu		0.000576	O	Mg		0.000220	O	S		0.124071	M	W	<	0.000236			
M	Dy	<	0.000944	O	Mn		0.000073	M	Sb	<	0.000236	M	Y	<	0.004722			
M	Er	<	0.000236	M	Mo	<	0.000708	s	Sc	<		M	Yb	<	0.000472			

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

SwRI Chem ID: 61567
SwRI Chem ID: 61567
SwRI Chem ID: 61567

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 44.96 +3 6 Sc(H2O)6+2
Chemical Compatibility -Soluble in HCl, H2SO4 and HNO3. Avoid HF, H3PO4 and neutral to basic media. Stable with most metals and inorganic anions forming an insoluble carbonate, oxide, oxalate, and fluoride. Avoid mixing with elements / solutions containing moderate amounts of fluoride. The fluoride is soluble in excess HF forming ScF63- (not recommended for standard preparations).
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 5-10% HNO3 / LDPE container. Small atomic radius increases hydrolysis requiring higher acid levels than other Rare Earths.
Sc Containing Samples (Preparation and Solution) -Metal (Soluble in acids); Oxide (Dissolve by heating in H2O / HNO3); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Dry ash and dissolve in 1:1 H2O / HCl or HNO3), (Aqua Regia or nitric / perchloric / sulfuric acid digestions can be used. Exercise caution when using perchloric acid.)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 45 amu	2.3 ppt	n/a	16O212CH, 29Si16O, 90Zr+2
ICP-OES 335.373 nm	0.004 / 0.00002 µg/mL	1	
ICP-OES 337.215 nm	0.004 / 0.00002 µg/mL	1	Ti, U, Ni, Rh
ICP-OES 424.683 nm	0.003 / 0.00002 µg/mL	1	Ce

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

SwRI Chem ID: 61567
SwRI Chem ID: 61567
SwRI Chem ID: 61567

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 09, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **January 09, 2018**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

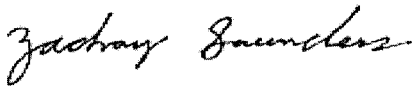
- Sealed TCT Bag Open Date: _09/22/15_Exp:__09/22/2016_____

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

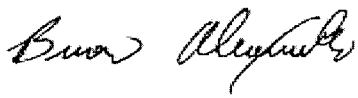
Certificate Prepared By:

Zach Saunders
Product Documentation Technician



Certificate Approved By:

Brian Alexander
PhD., Technical Process Director



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director



SwRI Chem ID: 61567
SwRI Chem ID: 61567
SwRI Chem ID: 61567

Chemical Information Sheet

011917
#57441

Scandium

Grade:	Analytical
Type:	Commercial Stock
CAS:	7440-20-2
Lot:	G2-SC02113
Received:	04/20/2015
Expiration:	04/21/2016
Location:	- No Data -
Current Lab:	Lab 48 Bldg 70
Original Amount:	500 mL
Amount Remaining:	345
Supplier:	Inorganic Ventures
Concentration:	10000 mg/L
Project:	- No Data -
PO Number:	H38528E
Internal Lab ID:	- No Data -
Density:	1.090 g/mL
Storage Requirement:	Ambient
Measuring Device ID:	- No Data -
Date Disposed:	03/28/2016
Notes:	TCT Open Date: 04-21-2015

Component Table

Compound	Conc/Activity	CAS

INORGANIC VENTURES™
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

SwRI Chem ID: 57441

1.0 **INORGANIC VENTURES** is an ISO Guide 34 "General Requirements for the Competence of Reference Material Producers" and ISO 9001 registered manufacturer. Our manufacturing laboratory is accredited to ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories."

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 DESCRIPTION OF CRM **10000 µg/mL Scandium in 7 % (v/v) HNO3**

Catalog Number:	CGSC10-1, CGSC10-2, and CGSC10-5
Lot Number:	**G2-SC02113**
Starting Material:	Sc2O3
Starting Material Purity (%):	99.9917
Starting Material Lot No:	1745
Matrix:	7 % (v/v) HNO3

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Concentration:	9,961 ± 24 µg/mL weighted mean
Certified Density:	1.090 g/mL (measured at 20 ± 1°C)

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence interval using a coverage factor of k = 2.

Characterization of CRM by two independent methods	**Characterization of CRM by one method**
Certified Value, X_{CRM}, where two methods of characterization are used, is the weighted mean of the two results = $[(w_a)(X_a) + (w_b)(X_b)]$ X_a is the mean of Assay Method A with standard uncertainty $U_{char\ a}$. X_b is the mean of Assay Method B with standard uncertainty $U_{char\ b}$. w_a and w_b = The weighting factors for each method calculated using the inverse square of the variance: $w_a = (1/U_{char\ a})^2 / ((1/U_{char\ a})^2 + (1/U_{char\ b})^2))$; $w_b = (1/U_{char\ b})^2 / ((1/U_{char\ a})^2 + (1/U_{char\ b})^2))$ **CRM Expanded Uncertainty (±) = $U_{CRM} = k\ (U^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$** $U_{char\ a\&b} = [(w_a)^2 (U_{char\ a})^2 + (w_b)^2 (U_{char\ b})^2]^{0.5}$; $U_{char\ a}$ and $U_{char\ b}$ are the square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume; k, coverage factor = 2 in all cases at Inorganic Ventures; u_{bb} = bottle to bottle homogeneity standard uncertainty; u_{lts} = long term stability standard uncertainty (storage); u_{sts} = short term stability standard uncertainty (transportation).	Certified Value, X_{CRM}, where one method of characterization is used, is the mean of individual results: X_a = Mean X_a is the mean of Assay Method A with standard uncertainty $U_{char\ a}$. **CRM Expanded Uncertainty (±) = $U_{CRM} = k\ (U^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$** $U_{char\ a}$ is the square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume; k, coverage factor = 2 in all cases at Inorganic Ventures; u_{bb} = bottle to bottle homogeneity standard uncertainty; u_{lts} = long term stability standard uncertainty (storage); u_{sts} = short term stability standard uncertainty (transportation).

4.0 TRACEABILITY TO NIST AND VALUES OBTAINED BY INDEPENDENT METHODS

SwRI Chem ID: 57441

SwRI Chem ID: 57441

· "Property of the result of a measurement or the value of a standard whereby it can be related to stated references, usually national or international standards, through an unbroken chain of comparisons all having stated uncertainties." (ISO VIM, 2nd ed., 1993, definition 6.10)

· This product is Traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRMs are available, the term 'in-house std.' is specified.

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a NIST SRM/RM. See section 4.2 for balance traceability.

4.1 **Assay Method #1** **9973 ± 45 µg/mL**
ICP Assay NIST SRM 3148a Lot Number: 100701

Assay Method #2 **9957 ± 25 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

4.2 **BALANCE CALIBRATION** - All analytical balances are calibrated yearly by an accredited calibration laboratory and are traceable to a class E 2 analytical weight set with NIST Traceability. All balances are checked daily using an in-house procedure. The weights used for testing are annually compared to master weights and are traceable to the National Institute of Standards and Technology (NIST).

4.3 **THERMOMETER CALIBRATION** - All thermometers are NIST traceable through thermometers that are calibrated by an A2LA accredited calibration laboratory.

4.4 **GLASSWARE CALIBRATION** - An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM's.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP/MS AND ICP-OES IN µg/mL

CRM's solutions are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

O	Al	< 0.001000	M	Dy	< 0.001989	O	Li	< 0.007000	M	Pr	< 0.000746	M	Te	< 0.074600
M	Sb	< 0.001243	M	Er	< 0.001243	M	Lu	< 0.000995	M	Re	< 0.002487	M	Tb	< 0.001243
M	As	< 0.007460	M	Eu	< 0.000249	O	Mg	0.004817	M	Rh	< 0.002487	M	Tl	< 0.002487
O	Ba	< 0.005000	M	Gd	< 0.002487	O	Mn	0.001204	M	Rb	< 0.745997	M	Th	0.003993
M	Be	< 0.001741	M	Ga	< 0.001243	O	Hg	< 0.010000	M	Ru	< 0.004973	M	Tm	< 0.000249
M	Bi	< 0.019893	M	Ge	< 0.019893	O	Mo	< 0.007000	M	Sm	< 0.000249	M	Sn	< 0.002487
M	B	< 0.019893	M	Au	< 0.007460	M	Nd	< 0.004973	s	Sc		O	Ti	< 0.030000
M	Cd	< 0.000746	O	Hf	0.010436	O	Ni	< 0.001000	M	Se	< 0.049733	O	W	< 0.020000
O	Ca	0.280976	M	Ho	< 0.000746	M	Nb	< 0.007460	O	Si	0.100349	M	U	< 0.001243
M	Ce	< 0.001243	M	In	< 0.002487	n	Os		M	Ag	< 0.007460	M	V	< 0.007460
M	Cs	< 0.223799	M	Ir	< 0.012433	M	Pd	< 0.012433	O	Na	< 0.100000	M	Yb	< 0.001243
O	Cr	< 0.005000	O	Fe	0.004014	O	P	< 0.100000	M	Sr	< 0.002487	O	Y	< 0.002000
O	Co	< 0.005000	M	La	< 0.022380	M	Pt	< 0.004973	O	S	0.722510	O	Zn	0.080279
O	Cu	0.016056	O	Pb	0.020070	O	K	0.008028	M	Ta	< 0.007460	O	Zr	0.060209

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

For the calibration of analytical instruments including but not limited to the following:
HPLC, IC, TLC, ISE, IR, NMR, UV/VIS, MS, Capillary Eletrophoresis, Potentiometry, Wet Chemistry and Voltammetry
For the validation of analytical methods
For the preparation of "working reference samples"
For interference studies and the determination of correction coefficients
For detection limit and linearity studies
For additional intended uses, contact Technical Staff

This CRM was manufactured using 18 megohm doubly deionized water that has been filtered through a 0.2 micron filter.

SwRI Chem ID: 57441
SwRI Chem ID: 57441
SwRI Chem ID: 57441

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

Storage & Handling - Keep tightly sealed when not in use. Store and use at 20 ± 4°C. Do not pipet from container. Do not return portions removed for pipetting to container.

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 44.95591; +3; 6; Sc(H2O)6+2

Chemical Compatibility - Soluble in HCl, H2SO4 and HNO3. Avoid HF, H3PO4 and neutral to basic media. Stable with most metals and inorganic anions forming an insoluble carbonate, oxide, oxalate, and fluoride. Avoid mixing with elements / solutions containing moderate amounts of fluoride. The fluoride is soluble in excess HF forming ScF63- (not recommended for standard preparations).

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 5-10% HNO3 / LDPE container. Small atomic radius increases hydrolysis requiring higher acid levels than other Rare Earths.

Sc Containing Samples (Preparation and Solution) - Metal (Soluble in acids); Oxide (Dissolve by heating in H2O / HNO3); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Dry ash and dissolve in 1:1 H2O / HCl or HNO3), (Aqua Regia or nitric / perchloric / sulfuric acid digestions can be used. **Exercise caution when using perchloric acid.)**

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Type	Interferences (underlined indicates severe)
ICP-OES 335.373 nm	0.004 / 0.00002 µg/mL	1	ion	
ICP-OES 337.215 nm	0.004 / 0.00002 µg/mL	1	ion	Ti, U, Ni, Rh
ICP-OES 424.683 nm	0.003 / 0.00002 µg/mL	1	ion	Ce
ICP-MS 45 amu	2.3 ppt	n/a	M+	16O212CH, 29Si16O, 90Zr+2

Uranium Note: If uranium is present in this standard, it is natural abundance unless specified in Section 3.0.

8.0 HAZARDOUS INFORMATION - Please refer to the enclosed Material Safety Data sheet for information regarding this CRM.

9.0 HOMOGENEITY - This solution was mixed according to an in house procedure and is guaranteed to be homogeneous. Inorganic Ventures homogeneity data indicate that the end user should take a minimum sample size of 0.2mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 **ISO 9001 Quality Management System Registration**
- SAI Global File Number 010105

10.2 **ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration"**
- Chemical Testing - Accredited A2LA Certificate Number 883.01

10.3 **ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"**
- Reference Materials Production - Accredited A2LA Certificate Number 883.02

10.4 **10CFR50 Appendix B - Nuclear Regulatory Commission**
- Domestic Licensing of Production and Utilization Facilities

10.5 **10CFR21 - Nuclear Regulatory Commission**
- Reporting Defects and Non-Compliance

11.0 DATE OF CERTIFICATION AND PERIOD OF VALIDITY

11.1 Shelf Life - The period of time during which the concentration of the analyte(s) in a properly packaged, unopened, and unused standard stored under environmentally controlled and monitored conditions will remain within the specified uncertainty range. Shelf life is limited primarily by transpiration (loss of water from the solution) and infrequently, by chemical instability.

11.2 Expiration Date - The date after which a CRM should not be used. Routine laboratory use of a CRM increases transpiration losses and the chance of contamination which affect the integrity of the CRM and limit its useful life. Manufacturer concurs with state and federal regulatory agencies' recommendations that solution standards be assigned a one-year expiration date.

11.3 Chemical Stability - Studies have been conducted on this or similar CRMs and it has been demonstrated that this CRM is chemically stable for a period of not less than two years provided the "Storage & Handling" conditions are followed that are described in section 7.0.

Certification Date: December 31, 2013

Expiration Date:TCT Open:4-21-15 = 4-21-16

SwRI Chem ID: 57441
SwRI Chem ID: 57441
SwRI Chem ID: 57441

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:	Donna Senn Product Documentation Technician	Donna Senn
Certificate Approved By:	Brian Alexander PhD., Technical Process Director	Brian Alexander
Certifying Officer:	Paul Gaines PhD., Senior Technical Director	Paul R Gaines

SwRI Chem ID: 57441
SwRI Chem ID: 57441
SwRI Chem ID: 57441

Chemical Information Sheet

011922

#37454

Thorium-229 056RadSol3

Grade:	Analytical
Type:	Working Level Solution
CAS:	15594-54-4
Lot:	- No Data -
Received:	11/10/2011
Expiration:	04/19/2016
Location:	- No Data -
Current Lab:	Lab 46 Bldg 70
Original Amount:	100 mL
Amount Remaining:	100
Supplier:	- No Data -
Concentration:	
Project:	- No Data -
PO Number:	- No Data -
Internal Lab ID:	- No Data -
Density:	1
Storage Requirement:	Ambient
Measuring Device ID:	- No Data -
Date Disposed:	- No Data -
Notes:	

Rad License:	L00775
Rad License Line:	

Sources Table

Mix created by WNaegeli on 01/10/13 4:50:27 PM.

ID	Source	Manufacturer	Lot	Amount
35575	Thorium-229	NIST	4328C	5.1276 g

Component Table

Compound	Conc/Activity	CAS	Rad License	License Line
Thorium-229	0.25328932833204 ug/L	15594-54-4		
Thorium-229	48.857 pCi/mL	15594-54-4		

Chemical Information Sheet

011923

#34289

Thorium-232 022RadSol3

Grade:	Analytical
Type:	Neat
CAS:	- No Data -
Lot:	C2-TH01079
Received:	03/06/2010
Expiration:	04/19/2016
Location:	- No Data -
Current Lab:	Lab 46 Bldg 70
Original Amount:	125 ml
Amount Remaining:	125
Supplier:	Inorganic Ventures
Concentration:	
Project:	- No Data -
PO Number:	- No Data -
Internal Lab ID:	8153
Density:	1
Storage Requirement:	Ambient
Measuring Device ID:	- No Data -
Date Disposed:	- No Data -
Notes:	

Component Table

Compound	Conc/Activity	CAS
Thorium-232	110.10 pCi/mL	