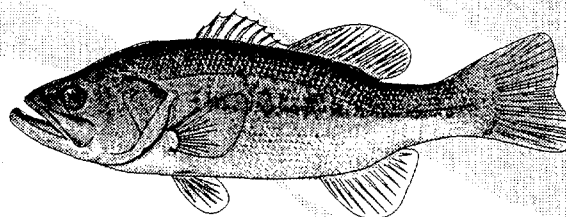
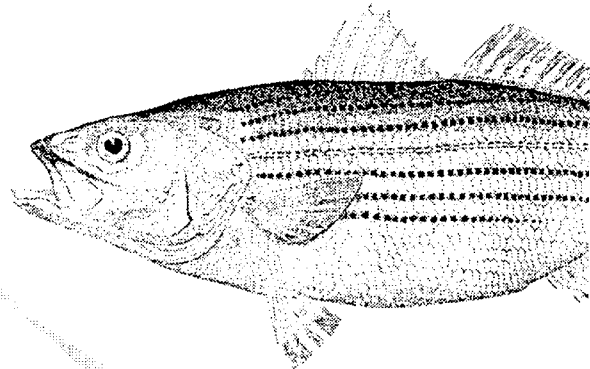
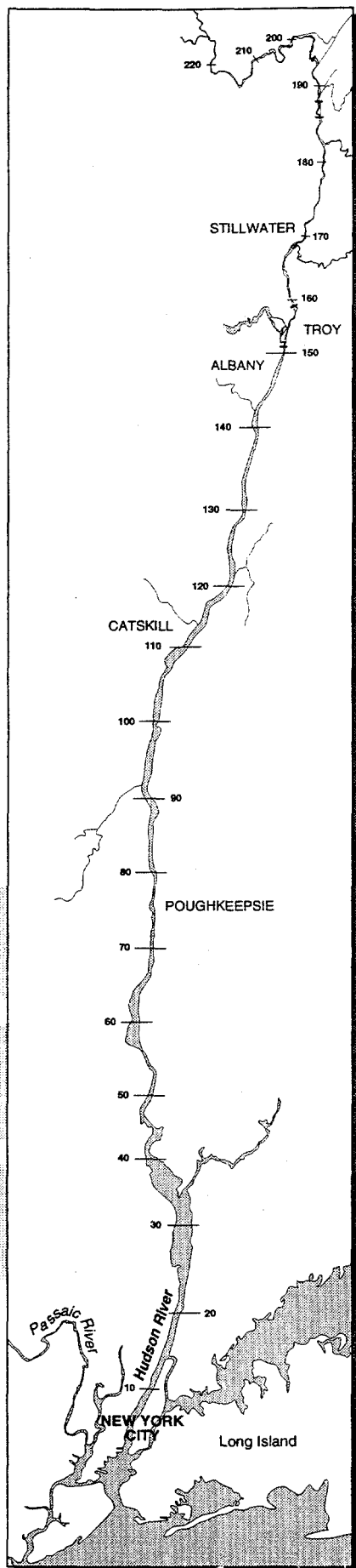


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*Hudson River
Congener-Specific Analysis*

**DATA SUMMARY
AND ANALYSIS
REPORT –
*Appendices***

JULY 1997



PREPARED FOR:



**National Oceanic and
Atmospheric Administration
Damage Assessment Center**

Silver Spring, Maryland

PREPARED BY:



**ENVIRONMENT
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Seattle, Washington

321269

Hudson River Congener-Specific Analysis

DATA SUMMARY AND ANALYSIS REPORT APPENDICES

by

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APPENDIX A

Life Histories of Fish Species

LIFE HISTORIES OF FISH SPECIES

The effect of the life history of each fish species on the exposure of the species to polychlorinated biphenyls (PCBs) must be considered in our analysis of resident species as surrogates for striped bass. We assume that the food web for each fish species is similar at all locations in the river, and changes in concentrations and congener patterns over space reflect only changes in ambient PCBs in water and/or sediment (the source of the PCBs for the fish at that location, via the food web or direct uptake). Differences in PCB concentrations and congener composition among species at the same location may reflect differences in PCB exposure caused by differences in the species' life histories. This appendix provides life history information for the resident species and striped bass.

LARGEMOUTH BASS (*MICROPTERUS SALMOIDES*)

The largemouth bass is a relatively large resident fish that occupies shallow, quiet waters. In the Hudson River, studies have shown that most fish are found at depths of 20 feet or shallower and have small home ranges, generally remaining within 300 feet of spawning areas. They are strongly associated with soft bottoms, stumps, and extensive growth of emergent and submergent vegetation. They have been found in all of the Lock Pools between the dam and Lock 8, most often observed in embayments, stream mouths, and submerged wetland areas. One study found that bass preferentially winter in Cossackie Bay (RM 130), and at the mouths of Catskill (RM 115), Espopus (RM 103), Rondout (RM 92), and Wappinger Creeks (RM 67) (Menzie-Cura & Associates 1994).

Largemouth bass spawn from late spring to midsummer in protected areas among emergent vegetation on soft bottoms (Menzie-Cura & Associates 1994). The species is primarily a fish-eating predator but food type changes with the fish's size, from plankton, to insects, to fish, crayfish, and frogs. Age and growth studies (Great Lakes) have found fish up to an age of fifteen years and a length of 50 cm (Scott and Crossman 1973).

YELLOW PERCH (*PERCA FLAVESCENS*)

The yellow perch is a medium-sized resident fish that occupies habitats similar to that of the largemouth bass (Scott and Crossman 1973). In the Hudson River, the species is most abundant in clear waters with moderate vegetation and sand, gravel, or fine-grained bottoms. They prefer submerged wetland areas, embayments, and stream mouths, but can be found in all types of habitats to some degree. They primarily inhabit the freshwater

portion of the estuary with an apparently even distribution of early life stage abundance from river mile 77 through 153 (Menzie-Cura & Associates 1994).

Yellow perch are among the earliest spring spawners, spawning in shallow vegetated areas from mid-February through March (Menzie-Cura & Associates 1994). The species feeds on insects, larger invertebrates, and fishes; they are opportunistic benthic feeders. Yellow perch are in turn preyed upon by almost all other predatory fishes and aquatic birds. Age and growth studies conducted in the Great Lakes and Canada found fish up to an age of 9 years and a length of 30 cm.

WHITE PERCH (*MORONE AMERICANA*)

The white perch is a medium to large fish, although some Hudson River populations are reportedly stunted (Menzie-Cura & Associates 1994). In Canada, specimens of age 12 and 34 cm have been observed. The species is a highly adaptable benthic predator consuming plankton, aquatic insects, and fish. (Scott and Crossman 1973). The species is semi-anadromous, residing throughout the river estuary (below the dam) and migrating upstream to lower lock pools on the upper river to spawn. They are one of the most abundantly collected species in the region and play a major role in the Hudson River ecosystem. White perch prefer shallow areas and stream mouths, generally staying close to rooted vegetation, but have diurnal and seasonal movements within local areas. During the summer, adults tend to accumulate at depths of 15 to 20 feet during the day and move to depths of 3 feet or less at night. During the winter, white perch are found at depths of 40 to 60 feet. Tagging studies have found that most white perch do not migrate from local geographic regions, particularly if suitable depths for diurnal movements and overwintering habitat exist (Menzie-Cura & Associates 1994).

Spawning in the Hudson River begins in April when water temperatures reach 10 to 12° C and continues through June. White perch prefer shallow areas for spawning such as flats, embankments, and tidal creeks. Spawning is greatest in regions around Albany between river miles 86 and 124 (Menzie-Cura & Associates 1994).

STRIPED BASS (*MORONE SAXATILIS*)

The striped bass is a large anadromous fish with spawning runs in the Hudson River between mid-May and mid-June (Fay et al. 1983). Spawning has been observed up to river mile 114. After spawning, studies suggest that most Hudson River adults out-migrate and spend most of their time within the estuary at salinities between 9 and 30 parts per thousand; only older fish tended to move into fully saline coastal waters (Secor and Houde 1994). Movements of juveniles under the age of 5 years vary widely, but

generally most juveniles remain in the river and estuarine areas where they were spawned. Striped bass are voracious predators feeding on a wide variety of fishes, squid, and crab. The species is a large, long-lived fish; a 30 kg fish is estimated to be between 29 and 31 years old. Historical records report fish in excess of 57 kg (Fay et al 1983).

PCB concentrations in Hudson River striped bass exceeding the U.S. Food and Drug Administration tolerance level of 2 ppm have resulted in the closure of the commercial striped bass fishery since 1976. In addition, several recreational advisories have been issued cautioning recreational fishermen about consuming striped bass in the Hudson River. The loss of commercial and recreational fisheries for this species has resulted in extensive monitoring of the PCB concentrations in Hudson River striped bass populations.

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- Menzie-Cura & Associates, Inc. 1994. Fish profiles for selected species in the Hudson River. Menzie-Cura & Associates, Chelmsford, MA. Draft. 21 p.
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- Fay, C.W., R.J. Neves, and G.B. Pardue. 1983. Species profiles: life histories and environmental requirements of coastal fishes and invertebrates (Mid-Atlantic) -- striped bass. U.S. Fish and Wildlife Service, Division of Biological Services, FWS/OBS-82/11.8. U.S. Army Corps of Engineers, TR EL-82-4. 36pp.

APPENDIX B

Methods: QA/QC, Data Management, and Analytical SOPs

METHODS

QUALITY ASSURANCE/QUALITY CONTROL

A quality assurance evaluation of the congener concentrations measured in the fish tissue samples was performed by EcoChem. Three sample groups (SDG: 55732, 55939, 55943) were submitted for a full validation review. The remaining four sample groups (SDG: 55845, 57268, 58379, 62004) were submitted for a cursory validation review. The full validation review included an evaluation of the raw data for each sample and review of all calculations involved in the reported concentrations. The cursory review involved the evaluation of the data based on the summary data without reviewing the complete raw data set. The overall assessment of the data in all groups concluded that the accuracy and precision of the data were generally acceptable. Qualifiers were assigned as a result of blank contamination, calibration deviation outliers, blank spike results, and deviations in the analysis of standard reference materials. All data, as qualified, were considered acceptable for use. The data validation report submitted by EcoChem is provided in Appendix C.

The dual-column data were merged to form one data set using an algorithm that has been used previously by NOAA. The method used to merge the data is as follows:

1. If a congener is resolved on both columns, the lower value is selected unless quality control problems were noted, and the lower result is qualified as estimated
2. If a congener is resolved on one column and not the other, then the lower of the two values is selected regardless of the resolution of the congener
3. If a congener coelutes on both columns, then the lower value is selected and reported as a coelution

DATA MANAGEMENT

Electronic data were submitted by EcoChem and analyzed in FoxPro® file format (dBase compatible files). The data were manipulated in FoxPro® to match the database format used for the previous Hudson River fish analysis project conducted for NOAA's Hazardous Materials Response and Assessment (Hazmat) Division. The general sample information was stored in a file named SMPFSH.dbf. The results of congener analyses for field samples were stored in PCBFSSH.dbf and results for laboratory QA/QC samples were stored in PCBFSSHQA.dbf. Additional files for the database management system

included STUDY.dbf and STATION.dbf. Previously developed database dictionaries for coding fish species (SPECIES.dbf) and PCBs (PCBLIST.dbf) were reused for this project. The hierarchy of database files is shown in Figure B-1. Details of the database structures are shown in Tables B-1 through B-6.

All samples, including duplicate laboratory samples, matrix spike samples, and matrix spike duplicate samples, were listed in the sample file. Logical (true/false) fields in the file identified whether the sample was a QA/QC sample or a field sample. Field collection information was completed with data supplied by Ron Sloan of NYSDEC. This information included location by river mile, sample collection date, fish species, length and weight of fish, sex (if known), and an age designation of 0 for juveniles and -9 for adults. From the collection date, the season of collection was determined as spring or fall.

The congener result files (PCBFSH.dbf and PCBFSHQA.dbf) include laboratory and data validation qualifiers in two distinct fields ("labqual" and "valqual", respectively). A field identified as "qualifier" field was completed with a "U" qualifier to indicate any samples that the laboratory or validators had designated as a non-detected congener. The values in the concentration field of the database for the "U" qualified results were the sample-specific detection limits.

Initial activities with the database involved calculating a total PCB result for each sample with non-detected congeners treated as zero. Using these totals, the maximum percent contribution to total of each congener and the percentage of time each congener was detected was determined. From these calculations, a subgroup of congeners for detailed study was selected. Forty-six congeners were detected in more than 75 percent of the samples and the maximum percent contribution in any individual sample for the congeners was at least 1 percent.

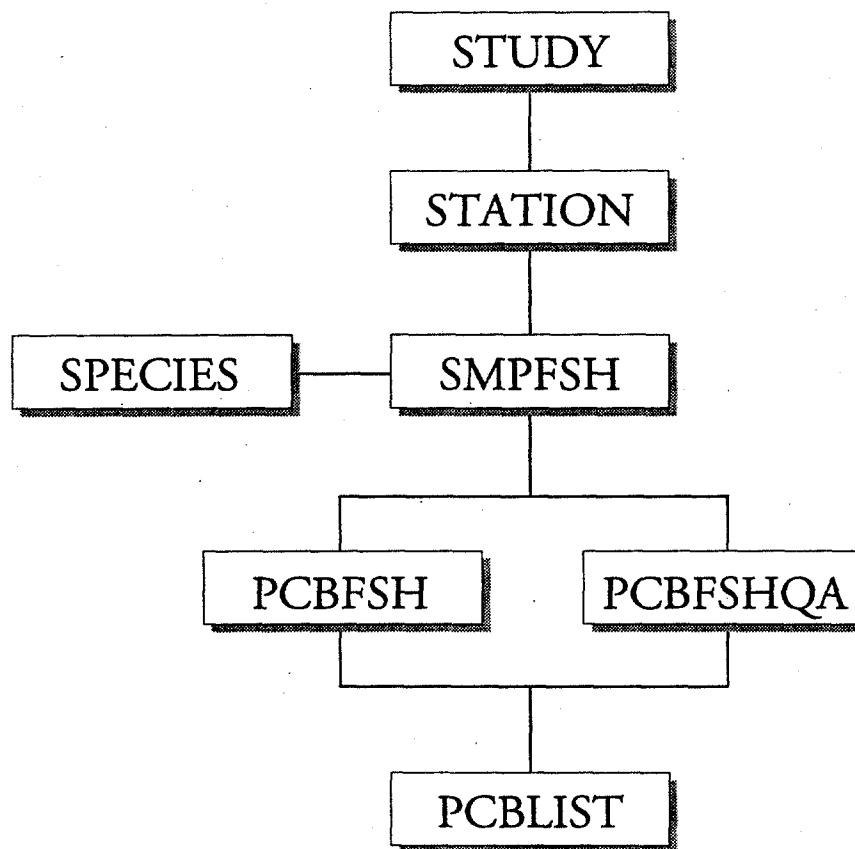


Figure B-1. File relationships for Hudson River PCB database

Table B1. Description of station location

Field name	Field type	Field width	Decimals	Description
SITEID	Char	2	0	Site identifier (21)
STUDYID	Char	4	0	Study identifier (i.e., NDAC)
STUDYNAME	Char	40	0	Study name
LAB	Char	20	0	Laboratory doing analyses
FISHCHEM	Logical	1	0	Fish tissue chemistry results, T or F?
SEDCHEM	Logical	1	0	Sediment chemistry results, T or F?
WATCHEM	Logical	1	0	Water chemistry results, T or F?
BENCHEM	Logical	1	0	Benthic tissue chemistry results, T or F?
SEDTOX	Logical	1	0	Sediment toxicity results, T or F?
HISTOPATH	Logical	1	0	Histopathology results, T or F?
STUDCOMM	Memo	10	0	Study comments

Table B2. Description of station location

Field name	Field type	Field width	Decimals	Description
SITEID	Char	2	0	Site identifier (21)
STUDYID	Char	4	0	Study identifier (i.e., NDAC)
STATIONID	Char	6	0	Station identifier
RMILE	Num	5	1	River mile for location of station
STANAME	Char	30	0	Station name
REACH	Char	5	0	Reach number on river for location of station
REACHNAME	Char	20	0	Reach name on river for location of station
LATDEG	Num	2	0	Degrees latitude for location of station
LATMIN	Num	2	0	Minutes of latitude for location of station
LATSEC	Num	5	2	Seconds of latitude for location of station
LONGDEG	Num	3	0	Degrees longitude for location of station
LONGMIN	Num	2	0	Minutes of longitude for location of station
LONGSEC	Num	5	2	Seconds of longitude for location of station
NORTHING	Num	19	4	Northing value for location of station
EASTING	Num	19	4	Easting value for location of station

Table B3. Description of fish samples

Field name	Field type	Field width	Decimals	Description
SITEID	Char	2	0	Site identifier (21)
STUDYID	Char	4	0	Study identifier (i.e., NDAC)
STATIONID	Char	6	0	Station identifier
SAMPLEID	Char	14	0	Sample identifier
REP	Char	2	0	Replicate identifier
SDG	Char	7	0	Laboratory sample delivery group
SAMPDATE	Char	8	0	Sample collection date
TAGNUM	Char	11	0	Tag number used for sample collection
SPP	Char	5	0	Species of fish sampled
PREP	Char	3	0	Method of sample preparation
NOINCOMP	Char	3	0	Number of fish in composite sample
LENGTH	Num	6	1	Length of fish sample in centimeters

WEIGHT	Num	8	2	Weight of sample in grams
SEX	Char	1	0	Sex of fish sampled
AGE	Num	3	0	Age of fish (e.g., -9 for adults, 0 for juveniles)
PCTLIPID	Num	5	2	Lipid value expressed as a percentage, 0 - 100%
PCBFSH	Logical	1	0	Results for sample analysis stored in file PCBFSH, T or F?
PCBFSHQA	Logical	1	0	Results for sample analysis stored in file PCBFSHQA, T or F?
RMILE	Num	5	0	River mile for location of station
SEASON	Char	4	0	Sample collection season

Table B4. Results of PCB congener analysis of fish samples/quality assurance samples

Field name	Field type	Field width	Decimals	Description
SITEID	Char	2	0	Site identifier (21)
STUDYID	Char	4	0	Study identifier (i.e., NDAC)
STATIONID	Char	6	0	Station identifier
SAMPLEID	Char	14	0	Sample identifier
REP	Char	2	0	Replicate identifier
CHEMCODE	Char	10	0	Code for chemical
CONC	Num	11	5	Detected concentration or detection limit for non-detects
UNITS	Char	10	0	Units of measure
LABQUAL	Char	8	0	Laboratory assigned qualifiers
VALQUAL	Char	8	0	Validation assigned qualifiers
QUALCODE	Char	2	0	Coded with "U" for non-detects based on lab or validation qualifiers
MEASBASIS	Char	2	0	Basis for measured value (eg. dry wt, wet wt)

Table B5. Dictionary of fish species

Field name	Field type	Field width	Decimals	Description
SPP	Char	5	0	Code for fish species
SPECIES	Char	25	0	Common name for fish species

Table B6. Dictionary of polychlorinated biphenyl (PCB) congeners

Field name	Field type	Field width	Decimals	Description
BZNUM	Char	1	0	Ballschmitter-Zell (BZ) number representing the congener
COMPOUND	Char	30	0	Congener name as a BZ number
CHEMCODE	Char	10	0	Code for chemical
NUMCLS	Num	2	0	Number of chlorine atoms
STRUCTURE	Char	25	0	Location of chlorine atoms
ORTHO	Char	1	0	Number of ortho located chlorine atoms
META	Char	1	0	Number of meta located chlorine atoms
PARA	Char	1	0	Number of para located chlorine atoms
COELUTE	Char	8	0	Coeluting congener
CROSSHLOG	Logical	1	0	Coeluting congener has a different number of chlorine atoms, T or F?

ATTACHMENT

Analytical SOPs

**Extraction of PCB Congeners in Biota
Method OR530_IND:EXB
For Industrial Economics**

Approvals and Signatures

QA Officer: Martha E. Roy Date: 11/7/95

GMD Extraction Section Head: Mark Phillips Date: 11/7/95

1.0 Scope and Application

- 1.1 This method describes the extraction and clean-up procedure of biota samples for GC/ECD analysis of PCB congeners.
- 1.2 This method is based on EPA Methods 3540 (soxhlet extraction), 3620A Florisil Clean up.

2.0 Summary of Method

- 2.1 Approximately 2.5 grams of biota sample is dried with baked granular sodium sulfate and soxhlet extracted for 16 hours using hexane. The extract is concentrated 10.0 mL, 2.0 mL is pulled for % lipids determination and the remaining 8.0 mL is eluted through a 10 gram Florisil column. The final extract volume is 1.0 mL.

3.0 Interferences

- 3.1 Electron Capture detector sensitive interferences are of major concern for this extraction procedure since the GC/ECD analysis consists of over 100 target chromatographic peaks eluting during a 80 minute period which may be effected. Method interferences from sample preparation may be caused by contamination of solvents, glassware, or reagents. Common interferences are phthalates which are present in plastics. To minimize interferences, glassware should be cleaned immediately after use, and reagents should be solvent washed periodically. Extraction method blanks are routinely analyzed with samples to monitor

extraction interferences.

4.0 Apparatus and Materials

- 4.1 Soxhlet Extractor - 40 mm ID with 500 mL roundbottom flask.
- 4.2 Kuderna-Danish (K-D) apparatus:
 - 4.2.1 Concentrator tube - 10 mL, graduated (Kontes K-570050-1025 or equivalent).
 - 4.2.2 Evaporation flask - 500 mL (Kontes K-57000-1-500 or equivalent).
 - 4.2.3 Snyder column - Three ball macro (Kontes K-503000-121 or equivalent).
 - 4.2.4 Snyder column - two ball micro (Kontes K-569001-219 or equivalent).
 - 4.2.5 Concentrator tube - 25 mL. Graduated (Kontes 569355-0000 or equivalent).
 - 4.2.6 Snyder column - 3 chamber (Kontes 570050-2526 or equivalent).
- 4.3 Boiling chips - Silicon carbide or equivalent, approximately 10/40 mesh, solvent extracted with hexane for approximately one hour.
- 4.4 Water bath - Heated, with concentric ring cover, capable of temperature control ($\pm 5^{\circ}\text{C}$). The bath should be used in a hood.
- 4.5 Vials - Glass, 2, 7 and 40 mL capacity, with Teflon lined screw caps.
- 4.6 Heating mantle - Rheostat controlled.
- 4.7 Disposable glass pasteur pipette and bulb.
- 4.8 Apparatus for determining percent lipids:
 - 4.8.1 Explosion proof hotplate.
 - 4.8.2 Desiccator.

4.8.3 Disposable aluminum dishes.

- 4.9 Analytical balance - 0.0001 gram Accuracy
Analytical balance - 0.01 gram Accuracy

4.10 Apparatus for Florisil clean-up procedure:

- 4.10.1 Glass chromatographic column, 11 mm ID with Teflon stopcock and reservoir.
- 4.10.2 50 mL beaker.
- 4.10.3 Long glass rod.
- 4.10.4 Glass wool - Solvent rinsed with methylene chloride.

4.11 Stainless steel spatulas.

4.12 Graduated cylinder - 100 and 50 mL capacities.

5.0 Reagents

- 5.1 ASTM Type II Water (ASTM D-1193-77) or equivalent. All references to reagent water in this method refer to ASTM Type II unless otherwise specified.
- 5.2 Sodium sulfate (granular, anhydrous, J.T. Baker, 12-60 Mesh Cat # JT3375-05) prepared by heating at 400°C for four hours in a shallow tray followed by solvent rinsing. The sodium sulfate must be baked every 10 days.
- 5.3 Organic solvents for extraction and clean-up:
- 5.3.1 Acetone - JT Baker, Resi-Analyzed, Cat # JT9254-3.
- 5.3.2 Hexane - JT Baker, Resi-Analyzed, Cat # JT9262-3.
- 5.3.3 Methylene chloride - J.T. Baker, capillary analyzed, Cat # 9128-03.
- 5.4 Florisil - (Supelco, 60/100 mesh) Cat # 2-0280 or equivalent). - Before use, activate each batch at least 16 hours at 130°C in a shallow glass tray. Cool to

room temperature in a desiccator. Add 2.0 mL reagent water to 100.0 grams activated Florisil and tumble for 4 hours.

5.4.1 Florisil Calibration

- ▶ Prepare Florisil column as stated in section 8.2.
- ▶ Add 1.0 mL ICAL 3 (10 ppb) to Florisil column.
- ▶ Elute column with 60 mL hexane.
- ▶ Collect in K-D apparatus.
- ▶ Concentrate extract to 1.0 mL.

5.4.2 Florisil Calibration Acceptance Criteria

- ▶ Should have 80-120% recovery of all PCB congeners.
- ▶ This check should be performed every 10 days.

5.5 PCB Surrogate Standard Spiking Solution

5.5.1 The surrogate standards are added to all samples, blanks, matrix spikes, and calibration standards before extraction. The surrogate compounds are tetrachloro-m-xylene (TCX) and BZ#192.

5.5.2 Prepare the surrogate standard spiking solution at a concentration of 0.2 ug/1.00 mL of each of the two compounds in acetone. Store the spiking solutions at 4°C ($\pm 2^\circ\text{C}$) in Teflon-sealed containers. These solutions must be replaced after six months, or sooner if comparison with quality control check samples indicates a problem.

Caution: Analysts must allow all spiking solutions to equilibrate to room temperature before use.

5.6 PCB Congener Matrix Standard Spiking Solution

5.6.1 Prepare a matrix spike standard solution that contains each of the congeners listed in Table 1 in acetone. Store at 4°C ($\pm$ 2°C) and protect from the light. Stock solutions must be replaced after six months, or sooner if comparison with check standards indicates a problem.

Caution: Each time a vial containing small volumes of solutions is warmed to room temperature and opened, a small volume of solvent in the vial headspace evaporates, significantly effecting concentration. Solutions should be stored with the smallest possible head space, and opening vials should be minimized. Also, the solution must be at room temperature before use.

Table 1: PCB Congener Matrix Spiking Solution

Congener		Conc. (ug/mL)
BZ#8	2,4'-Dichlorobiphenyl	0.2
BZ#18	2,2',5-Trichlorobiphenyl	0.2
BZ#28	2,4,4'-Trichlorobiphenyl	0.2
BZ#44	2,2',3,5'-Tetrachlorobiphenyl	0.2
BZ#52	2,2',5,5'-Tetrachlorobiphenyl	0.2
BZ#66	2,3',4,4'-Tetrachlorobiphenyl	0.2
BZ#77	3,3',4,4'-Tetrachlorobiphenyl	0.2
BZ#101	2,2',4,5,5'-Pentachlorobiphenyl	0.2
BZ#105	2,3,3',4,4'-Pentachlorobiphenyl	0.2
BZ#118	2,3',4,4',5-Pentachlorobiphenyl	0.2
BZ#126	3,3',4,4',5-Pentachlorobiphenyl	0.2
BZ#128	2,2',3,3',4,4'-Hexachlorobiphenyl	0.2
BZ#138	2,2',3,4,4',5'-Hexachlorobiphenyl	0.2

Congener		Conc. (ug/mL)
BZ#153	2,2',4,4',5,5'-Hexachlorobiphenyl	0.2
BZ#170	2,2',3,3',4,4',5-Heptachlorobiphenyl	0.2
BZ#180	2,2',3,4,4',5,5'-Heptachlorobiphenyl	0.2
BZ#187	2,2',3,4',5,5',6-Heptachlorobiphenyl	0.2
BZ#195	2,2',3,3',4,4',5,6-Octachlorobiphenyl	0.2
BZ#206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	0.2
BZ#209	2,2',3,3',4,4',5,5',6,6'-Deacachlorobiphenyl	0.2

6.0 Sample Collection, Preservation and Handling

- 6.1 Sample collection is according to the study protocol and relevant standard operating procedures.
- 6.2 Preservation - In the laboratory, all samples must be kept frozen until grinding and/or sample extraction is requested.

7.0 Sample Extraction

Biota sample is dried with 4 grams granular sodium sulfate, or more if necessary to achieve a dry texture. The sample is quantitatively transferred to a soxhlet extractor and fortified with surrogate. The extraction batch will consist of a method blank, up to 20 samples, a duplicate, matrix spike blank (MSB), and two standard reference materials (SRMs).

- 7.1 Weigh out 2.5 grams of homogenous sample to the nearest 0.01 grams into a 50 mL beaker for extraction.
- 7.2 Add 4 grams of solvent cleaned baked granular Na_2SO_4 to sample in the beaker and mix.
- 7.3 Transfer sample to a soxhlet thimble and place in soxhlet extractor.
- 7.4 Add 1.0 mL 0.2 ug/mL surrogate spike to the blank, all samples, and all quality control samples. This operation must be witnessed.

- 7.5 Add 0.050 mL of 0.2 ug/mL matrix spike solution to the matrix spike blank sample. This operation must be witnessed.
- 7.6 Add 300 mL hexane into 500 mL round bottom.
- 7.7 Extract for 16 hours.
- 7.8 After 16 hours, let cool, transfer to a 500 mL K-D set-up through granular Na_2SO_4 .
- 7.9 Concentrate extract to 10.0 mL. Pull 2.0 mL for % lipids determination. Remaining 8.0 mLs is ready for Florisil column clean up.

8.0 Florisil Clean-Up

The Florisil clean-up is utilized to separate pesticides and other polar contaminants from the PCB congeners.

8.1 Florisil column preparation:

8.1.1 Florisil preparation:

- ▶ Weigh 10 gm of deactivated Florisil in a 50 mL beaker and add enough methylene chloride to cover Florisil.
- ▶ Mix slurry to remove air bubbles.
- ▶ Cover beaker with aluminum foil until ready for use. Do not let methylene chloride evaporate to expose Florisil.

8.1.2 Florisil column preparation:

- ▶ Place a glass wool plug at the bottom of the column.
- ▶ Add an appropriate 10 cm equivalent volume of methylene chloride to the column and with a glass rod, push air bubbles out of glass wool. Drain approximately 2 cm of methylene chloride to release air in stopcock.
- ▶ Add about 2 cm granular sodium sulfate to column.

- ▶ Mix with glass rod to get air bubbles out.
- ▶ Using the methylene chloride squirt bottle, rinse any sodium sulfate that may be stuck to sides of glass. Drain methylene chloride.

Note: Do not let Sodium Sulfate become exposed to air.

- ▶ Using the methylene chloride squirt bottle, rinse Florisil slurry out of the 50 mL beaker into the Florisil column.
- ▶ Open stopcock to let methylene chloride drain out.
- ▶ Rinse walls of column with methylene chloride so all the Florisil will fall into the restricted part of the column.
- ▶ Tap column to settle Florisil.

Note: Do not let Florisil become exposed to air.

- ▶ Add 2 cm granular sodium sulfate to top of Florisil.
- ▶ Drain excess methylene chloride or use a pipette and draw off excess solvent.

Note: Do not let granular Sodium Sulfate become exposed to air.

- ▶ Let sides of Florisil column (exposed to air) dry; then rinse sides of column with hexane and drain to top of granular sodium sulfate.
- ▶ Add 50 mLs hexane to column and drain so hexane layer is just above granular sodium sulfate.
- ▶ Place 500 mL K-D set up below Florisil column to collect post Florisil extract.

8.2 Extract clean-up

- 8.2.1 Transfer the 8 mL extract to the sorbent bed and drain to top of sodium sulfate.

8.2.2 Rinse the extract vial with 1.0 mL hexane and transfer to the Florisil column. Drain the extract to top of sodium sulfate.

8.2.3 Add 60 mL hexane to column and drain to top of sodium sulfate.

8.2.4 Concentrate extract to 1.0 mL.

10.0 Total Extractable Lipid Weight Determination

Many of the tests performed by the laboratory involve compounds which are stored in the fat tissue of organisms (eg fish). For this reason, the amount of lipids in the sample can directly affect the concentration of the compounds (eg PCB's) measured in the sample. Percent lipids can be determined several different ways, but the easiest is to use a small amount of the extract since the lipids are extracted by most procedures used in the lab. Since the extraction solvents boil off at low temperatures, leaving the lipids behind, percent lipids can be determined by using gravimetric procedures and a low temperature oven.

10.1 Pre-weigh an aluminum dish to nearest 0.0001 gram using a four place analytical balance.

10.2 Add the 2.0 mL volume of extract to the dish.

10.3 Evaporate solvent from dish on the hotplate. (Hotplate should be on the lowest temperature setting so the solvent evaporates but lipids do not burn). As an alternative, the 100° C oven can be used.

10.4 Weigh dish and residue to nearest 0.0001 gram.

10.5 Calculate % lipids as shown:

$$\% \text{ Lipids} = \frac{(\text{Residue} + \text{dish}) - \text{dish wt}}{2 \text{ mL extract}} * \frac{10.0 \text{ mL Extract}}{\text{wt of sample extracted}} * 100$$

10.6 Repeat steps 10.3-10.5 until the % deviation of the % lipids is within 10%.

11.0 Quality Controls

For each Sample Delivery Group of 20 or less samples, there will be a minimum quality control which includes a method blank, matrix spike blank sample, duplicate sample and SRM.

- 11.1 Method Blank - A method blank is extracted with every extraction batch, each 20 samples or Sample Delivery Group, whichever is more frequent. The method blank is extracted with the samples to monitor for any interferences introduced to the sample during sample preparation.
- 11.2 Surrogate Spike - All samples, blanks and matrix spike samples will be fortified with tetrachloro-m-xylene and BZ#192 before solvent extraction begins. Surrogates are added to the samples to monitor the quantitative transfer of the organic compounds of interest throughout sample preparation to the gas chromatograph detector. The surrogate spike is nominally 100 ug/Kg in sample.
- 11.3 Matrix Spike Blank - For each 20 samples in a Sample Delivery Group of similar matrix or each 7 day calendar period during which samples are received a matrix spike blank must be extracted. The spiked compounds are used to monitor the quantitative transfer of analytes through the extraction procedure unaffected by any sample matrix interferences. The matrix spike blank is nominally 5 ug/Kg in sample.

**PCB Congener GC/ECD Analysis
For Industrial Economics, Inc
OR530_IND:AN**

Approvals and Signatures

QA Officer:

Martha E. Roy

Date:

11/7/95

GC Section Head:

Gary B. Stuber

Date:

11/7/95

1.0 Scope and Application

- 1.1 This method is used to determine the concentration of 108 of the possible 209 polychlorinated biphenyls (PCBs) congeners using dual fused silica capillary gas chromatography with electron capture detectors in prepared sample extracts.

2.0 Summary of Method

- 2.1 Hexane extracts are analyzed using fused silica capillary columns with electron capture detectors. The instrumentation is set-up with two capillary columns of different polarity in parallel, both used for quantitation. Prior to the analysis of samples, a five point calibration using the individual PCB congeners listed in Table 1 is performed for quantitation. Instrument stability is verified every 10 samples with a mid-level standard.

3.0 Interferences

- 3.1 Electron capture detector sensitive interferences are of major concern for this analysis since over 100 target chromatographic peaks eluting during an 80 minute period may be effected. Interference peaks from septa bleed or solvents are routinely monitored during sample analysis by analyzing instrument blanks.

Sample matrix interferences are also of concern, therefore sample extracts are eluted through a 10 gram Florisil column calibrated specifically for PCB congeners.

4.0 Apparatus and Materials

- 4.1 Gas chromatograph - An analytical system equipped with packed or on-column injection, two electron captures and an auto-sampler.
- 4.2 Data System - The data system must be capable of handling a minimum of 120 chromatographic peaks per detector. Fison's Multi-Chrom version 2.0 will be used for this analysis.
- 4.3 Fused Silica Capillary Columns
 - 4.3.1 Column 2 - 60m x 0.25mm ID, 0.50 micron film thickness, RTX-5, Restek Corp's
 - 4.3.2 Column 4 - 60m x 0.25mm ID, 0.20 micron film thickness, Apiezon L, Restek Corp's

5.0 Reagents and Standards

- 5.1 Solvents
 - 5.1.1 Hexane - JT Baker, Resi-Analyzed, Cat #JT9262-3
 - 5.1.2 Acetone - JT Baker, Resi-Analyzed Cat #JT9254-3
- 5.2 Standards are purchased as individual congener mixes, and combined to make the calibration standards. Standards must be replaced after 12 months.
 - 5.2.1 Stock Standard Solutions - Stock standards are purchased from UltraScientific and AccuStandard as individual standards at 100 ppm or the highest concentration available.
 - 5.2.2 Primary Dilution Standard Solutions. The individual stock standards are combined to make intermediate stock solutions. If additional compounds are needed, an additional standard solution will be used until new standards are formulated.

- 5.2.3 Calibration Standard Solutions - The calibration solutions are prepared at five different concentrations and include the surrogates tetrachloro-m-xylene (TCX) and BZ#192.

ICAL1 - All PCB congeners are at a 1.0 ug/l concentration except the monochlorobiphenyls which are at 5.0 ug/l. The surrogates TCX and BZ#192 are at a 3.0 ug/l concentration.

ICAL2 - All PCB congeners are at a 3.0 ug/l concentration except the monochlorobiphenyls which are at 15.0 ug/l. The surrogates TCX and BZ#192 are at a 9.0 ug/l concentration.

ICAL3 - All PCB congeners are at a 10 ug/l concentration except the monochlorobiphenyls which are at 50 ug/l. The surrogates TCX and BZ#192 are at a 30 ug/l concentration.

ICAL4 - All PCB congeners are at a 30 ug/l concentration except the monochlorobiphenyls which are at 150 ug/l. The surrogates TCX and BZ#192 are at a 90 ug/l concentration.

ICAL5 - All PCB congeners are at a 100 ug/l concentration except the monochlorobiphenyls which are at 500 ug/l. The surrogates TCX and BZ#192 are at a 300 ug/l concentration.

6.0 Instrument Set-Up

- 6.1 Operating Conditions: Hewlett Packard 5890 series II, with packed column injection port and dual electron capture detectors.

- 6.1.1 GC Configuration: A five meter x 0.32 mm ID deactivated guard column is installed into the packed column injection port using a Restek Uniliner. The guard column is connected via a SGE VSIS-2 inlet splitter or glass "Y" to the two analytical columns (RTX-Apiezon L and RTX-5) which are connected to electron captures.

6.1.2 GC Oven Conditions

Initial Temperature -	100°C
Initial Time -	2.0 min
Ramp Rate -	20.0°C
Temperature 2 -	165°C
Time 2 -	0 min
Ramp Rate 2 -	1.5°/min
Temperature 3 -	254°C
Time 3 -	0 min
Ramp Rate 3 -	10°/min
Temperature 4 -	270°C
Time 4 -	7 min

Note: Temperature and flow rates may vary in order to achieve chromatographic resolutions for each column.

6.1.3 Miscellaneous Conditions

Injection port temperature -	225°C
Detector temperatures -	310°C
Injection amount -	3 uL
Carrier gas -	Hydrogen, constant back pressure at 45 psi
ECD make-up -	100 ml/min 5% Argon/methane

7.0 Initial Calibration

- 7.1 In order to calculate the proper concentration for each individual PCB congener, both capillary columns will be used for quantitation. Therefore, both columns must meet the following quality control criteria for calibration.

7.2 The initial calibration sequence is as follows:

<u>ini</u>	<u>Lab ID</u>
1	Aroclor Mix
2	PIBLK##
3	ICAL1
4	ICAL2
5	ICAL3
6	ICAL4
7	ICAL5
8	PIBLK##

7.3 Resolution Criteria - The ICAL-3 standard is used to measure the resolution of peaks.

7.3.1 RTX-5 - should meet the following resolution criteria for the following pair of PCB congeners.

- ▶ BZ #4 + 10 and Tetrachloro-m-xylene should have greater than 25% resolution
- ▶ BZ #31 and BZ #28 should have greater than 25% resolution
- ▶ BZ #84 and BZ #101 should have greater than 50% resolution

7.3.2 RTX-Apiezon L - Should have greater than 25% resolution for the following pairs of PCB congeners.

- ▶ BZ #9 and Tetrachloro-m-xylene
- ▶ Tetrachloro-m-xylene and BZ #7
- ▶ BZ #192 and BZ #193

Calculation for Resolution:

$$\text{Resolution} = \frac{\text{height of smaller peak} - \text{height of valley}}{\text{height of smaller peak}} * 100$$

The height of the smaller peak and valley can be measured with a millimeter ruler to the closest 0.5 millimeter.

7.4 Each compound in the curve must fall within the specified retention time windows using the mean retention time of the five calibration points.

7.4.1 The retention time windows are $\pm 0.5\%$ of the average retention time from the curve for all compounds.

7.5 The correlation coefficient of the five calibration points must be greater than 0.995 using a quadratic equation.

7.6 Instrument Blanks - The instrument blanks must not have any analytes detected above one-half the ICAL-1 standard.

8.0 Continuing Calibration

8.1 The continuing calibration standard must be analyzed every 10 samples and must meet the following quality control criteria. If the quality control criteria are not met, samples between the last passing standard and the failing standard must be reanalyzed.

8.2 A typical run sequence beginning with the ICAL5 standard from the initial calibration is as follows:

<u>inj</u>	<u>Lab ID</u>
7	ICAL5
8	PIBLK##
9-18	Samples
19	PIBLK##
20	OCAL3
21-30	Samples
31	PIBLK##
32	OCAL3

8.3 Percent Difference (%D): The average percent difference of the calculated concentrations must be less than 15% the nominal concentration. No compounds should be above 25% difference.

$$\%D = \frac{\text{calc. amount} - \text{nominal amount}}{\text{nominal amount}} * 100$$

8.4 Retention Times - The retention times of each PCB congener must fall within the required retention time windows discussed in Section 6.4.

8.5 Resolution: The resolution stated in Section 6.2 should be met to continue the analysis.

9.0 Sample Extraction Preservation

9.1 Sample extracts are preserved in a refrigerator at $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$.

Note: Samples must be warmed to room temperature before aliquots are taken from the vial for analysis.

9.2 Sample extracts must be analyzed within 40 days of sample extraction.

10.0 Quality Controls

For each Sample Delivery Group of 20, the minimum quality control which includes a method blank, matrix spike blank sample, two Standard Reference Material (SRM) samples and a duplicate sample.

10.1 Method Blank - A method blank is extracted with every extraction batch, each 20 samples or Sample Delivery Group, whichever is more frequent. The method blank is extracted with the samples to monitor for any interferences introduced to the sample during sample preparation.

10.1.1 An acceptable method blank must not have more than two analytes detected at or above the reporting limit on the primary column or on the confirmation column, unless the analyte is not detected in the associated sample(s) or the analyte concentration in the sample is greater than 10 times the blank value. Due to limited sample volumes, if a method blank fails the quality control limits the quality assurance officer must be notified immediately to discuss corrective action. Corrective action may include re-extraction and re-analysis of all associated samples.

10.2 Surrogate Spike - All samples, blanks and matrix spike samples will be fortified with tetrachloro-m-xylene and BZ #192 before solvent extraction begins. Surrogates are added to the samples to monitor the quantitative transfer of the organic compounds of interest throughout sample preparation to the gas

chromatograph detector.

10.2.1 The advisory recovery limits for TCX and BZ#192 are between 50-125%. If the recovery is outside the QC limits, the sample will be re-analyzed and if needed reextracted.

10.3 Matrix Spike Blank - For each extraction batch a matrix spike blank must be extracted. The spiked compounds are used to monitor the quantitative transfer of analytes through the extraction procedure unaffected by any sample matrix interferences.

10.3.2 The recovery limits are 50-125%. Due to limited sample volumes if a matrix spike blank fails the quality control limits notify, the quality assurance officer must be notified immediately to discuss corrective action. Corrective action may include re-extraction and re-analysis of all associated samples.

10.4 Sample Duplicate - For every 20 samples a sample will be extracted and analyzed in duplicate. The relative percent difference (RPD) between the two samples should be less than 20%.

10.5 Standard Reference Material (SRM) - For every extraction batch an SRM must be extracted. The minimum requirement is one STM per 10 samples. The recovery of specified congeners must be within the quality control limits specified by the vendor.

11.0 Compound List and Limits of Reporting

BZ#	Biota (ug/Kg)	BZ#	Biota (ug/Kg)
1	2.5	29	0.5
3	2.5	31	0.5
4	0.5	33	0.5
5	0.5	37	0.5
6	0.5	40	0.5
7	0.5	41	0.5
8	0.5	42	0.5
9	0.5	44	0.5
10	0.5	45	0.5
12	0.5	47	0.5
15	0.5	49	0.5
16	0.5	52	0.5
17	0.5	53	0.5
18	0.5	56	0.5
19	0.5	59	0.5
20	0.5	66	0.5
22	0.5	70	0.5
25	0.5	72	0.5
26	0.5	74	0.5
27	0.5	75	0.5
28	0.5	77	0.5
82	0.5	135	0.5

BZ#	Biota (ug/Kg)	BZ#	Biota (ug/Kg)
83	0.5	136	0.5
84	0.5	137	0.5
85	0.5	138	0.5
87	0.5	141	0.5
91	0.5	143	0.5
92	0.5	149	0.5
95	0.5	151	0.5
97	0.5	153	0.5
99	0.5	156	0.5
101	0.5	157	0.5
105	0.5	158	0.5
107	0.5	165	0.5
110	0.5	167	0.5
115	0.5	168	0.5
118	0.5	169	0.5
119	0.5	170	0.5
122	0.5	171	0.5
123	0.5	174	0.5
126	0.5	176	0.5
128	0.5	177	0.5
129	0.5	178	0.5
179	0.5	196	0.5
180	0.5	198	0.5

BZ#	Biota (ug/Kg)	BZ#	Biota (ug/Kg)
183	0.5	199	0.5
185	0.5	200	0.5
187	0.5	201	0.5
189	0.5	202	0.5
190	0.5	205	0.5
191	0.5	206	0.5
193	0.5	207	0.5
194	0.5	208	0.5
195	0.5	209	0.5

12.0 Quantitation

12.1 Quantitation of PCB congeners reported on Form I's and diskette files are performed independent of Multichrom software although concentrations of injected amounts appear in chromatograms calculated by Multichrom. The Multichrom software is used to integrate chromatograms, identify PCB congeners, record extract dilution factors, and transfers information of each PCB congener to the Envision software used to generate forms. With this information, an identification sheet is generated for each sample analysis for each column. Each analytical column result will be reported separately and the two columns merged by the data user. All parameters used for quantitation are presented on the form I's. Following is a detailed summary of each step performed for quantitation.

Before quantitation may start, the following must be completed within the confines of the GC multichrom software for both.

- ▶ Initial standards must be labeled as follows: ICAL1, ICAL2, ICAL3, ICAL4, and ICAL5. These standards are defined in section 5.2.3.
- ▶ Continuing calibration standards must be labeled as OCAL3 for the mid-level check standard.
- ▶ Instrument blanks are labeled as PIBLK##, i.e. PIBLKA1.

- ▶ Samples are labeled with the laboratory ID and dilution factors if greater than 1:1. The dilution factor must be presented for a dilution of 50 ul of sample plus 50 ul hexane as 1:2. The number following the colon is the dilution factor used for quantitation.
- ▶ The calibration file must be updated with peak domains, retention times, and identification of target compounds. A peak domain is a chromatographic peak which may contain one or more PCB congeners. A target compound is a PCB congener which is calibrated using individual standards.
- ▶ All standards, blanks and samples must be integrated and identified.

12.2 Integration and Analyte Identification

12.2.1 Integration will be performed to best match the integration of the Aroclor Standard and ICAL standards acquired at the beginning of the analysis.

12.2.2 Analytes are generally identified using a retention time window of ± 0.05 accounting for surrogate retention time drift and pattern recognition.

13.0 Calculations

A quadratic least squares regression model is used to calculate the concentration of congeners in extract. Response is measured by automated peak area measurements from an integrator.

13.1 Biota Samples

The concentration of congeners in biota samples are calculated using the following equation:

$$C_x \text{ (ug/Kg)} = \frac{C_e * V_t}{W_s} * DF$$

Where:

C_x = Concentration of each congener, ug/Kg as received

C_e = Concentration of congener in extract (ug/L)

V_t = Volume of total extract (L) taking into account any dilutions

W_s = Weight of sample extracted (Kg)

DF = Dilution Factor

14.0 Reporting

14.1 In order to report the low concentration of some PCB congeners in the presence of higher concentrated congeners as expected in environmental samples, the range of acceptable reporting limits is extended at both the lower and higher calibration range. The following guidelines are used to give maximum information for each analysis.

- ▶ PCB congeners will be reported down to 0.5 ug/L in extract, 2.5 ug/L in extract for the monochlorobiphenyls.
- ▶ PCB congeners will be reported up to the ICAL5 standard.
- ▶ Matrix spike samples may not be diluted to put spiked compounds below the ICAL5 standard.

Note: Biota sample PCB congener concentrations must be within the ICAL1 - ICAL5 standards. If a dilution greater than 1:10 is needed then a 10 fold more concentrated extract analysis maybe performed.

14.2 The RTx-5 and Apikezon L data will not be merged at the lab. The two columns will be reported separately. The merged results will be performed by the data users.

14.3 Qualifier Definitions used on Form I

- U - Compound was not detected at or above the reporting limit of 1.0 ug/L for all PCB congeners except 5.0 ug/L for the monochlorobiphenyls in extract. The value is the reporting limit.
- J - Compound was detected below the calibration range.
- E - Compound concentration exceeds the calibration range.
- G- Result is an estimate in concentration because analytical interference caused difficulty with quantitation.
- S = &- Surrogate recovery is outside acceptable limits (50-125%).
- N=NCA-Analyte identified on the primary column could not be confirmed because of coelution or analytical interference.

15.0 References

- (1) Fischer, R.; Ballschmiter, K.; Ortho-substituent Correlated Retention of Polychlorinated Biphenyls on a 50% n-octyl-methylpolysilixane Stationary Phase by HRGC/MSD; Fresenius Z Anal. Chem (1988) 332:441-446.
- (2) Fischer, R.; Ballschmiter, K; Congener-specific Identification of Technical PCB Mixtures by Capillary Gas Chromatography on a n-octyl-methyl Silicone Phase (SB-Octyl-50) with Electron Capture-and Mass-Selective Detection; Fresenius Z Anal Chem (1989) 335:457-463. USEPA SW-846, Third Edition.
- (3) Mullen, M.; High-Resolution PCB Analysis: Synthesis and Chromatographic Properties of all 209 PCB Congeners; Environ. Sci. Technol. Vol, 18, No. 6, 1984, 468-475. NYSDEC Analytical Services Protocol, September 1989, 12/91 Revision.
- (4) Schulz, D.; Complete Characterization of Polychlorinated Biphenyl Congeners in Commercial Aroclor and Clophen Mixtures by Multidimensional Gas Chromatography - Electron Capture Detection; Environ. Sci. Technol.;, Vol 23, No. 7, 1989, 852-859.
- (5) USEPA Contract Laboratory Program, Statement of Work for Organics Analysis, Document Number OLM01.8, 8/91.
- (6) Southern California Damage Assessment (SCDA) Guidelines.

APPENDIX C

Data Validation Report



EcoChem, Inc.

ECOCH0001
HR Lib.

Environmental Science and Chemistry

DATA VALIDATION REPORT

PCB Analysis of Fish Tissues Hudson River Project

PREPARED FOR:

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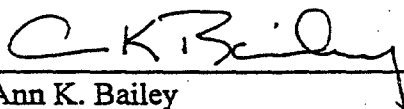
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EcoChem Project Number: 6311-42

November 14, 1996

Approved for Release:


Ann K. Bailey
President/Project Director
EcoChem, Inc.

INTRODUCTION

This report summarizes the quality assurance evaluations performed and data qualifications recommended for 118 fish tissue samples analyzed for the Hudson River project. Refer to the Sample Index (TABLE 1) for sample identifications and type of validation performed.

The tissue samples were analyzed for 107 PCB congeners using a project-specific method, "Congener Specific Determination of Polychlorinated Biphenyls in Hexane Extracts by Capillary Column Gas Chromatography", Appendix A-4 of the *Sampling and Analysis Plan/Quality Assurance Project Plan for the Hudson River PCB Reassessment RI/FS* (October 1993). The analyses were performed by Aquatec Laboratories, 55 South Park Drive, Colchester, Vermont.

The data validation review and secondary technical review were performed by the following EcoChem chemists:

FULL VALIDATION:

Sample Delivery Group (SDG)	Primary Review	Secondary Review
SDG 55732	Bob Olsiewski	Shawna Kennedy
SDG 55939 and 55943	Sheri Wunderlich	Bob Olsiewski

CURSORY VALIDATION:

Sample Delivery Group (SDG)	Primary Review	Secondary Review
SDG 55845	Shawna Kennedy	Bob Olsiewski
SDG 57268	Shawna Kennedy	Bob Olsiewski
SDG 58379	Sheri Wunderlich	Bob Olsiewski
SDG 62004	Bob Olsiewski	Sheri Wunderlich

The data validation review was based on the quality control criteria specified in the analytical method; *Hudson River NRDA PCB Analysis QC Criteria and Corrective Action*. For full validation, raw data and calibration information were reviewed. Cursory validation reviewed the quality control summary information only.

Data validation and reasons for qualification are summarized in each section of the following report. Validation qualifier definitions are listed in TABLE 2. A data summary including data validation qualifiers assigned to sample results is provided in APPENDIX A.

Overall Assessment of Data Quality

The majority of qualifiers were assigned to results within five times the associated blank concentrations, these results were assigned non-detect (U) qualifiers, indicating potential false positives. Other data were flagged as estimated (J) for the following reasons:

- Several percent difference (%D) results (from the true values) for target analytes in the continuing calibration verification (CCV) standards were outside the $\pm 25\%$ control limit for

an individual congener indicating possible bias in the associated results. Consideration should be given when using these results.

- A number of percent recovery (%R) values were outside the acceptance limits for the blank spike congeners, with a few exceptions these outliers were out low indicating a possible low bias for the affected congeners.
- The laboratory precision was acceptable as demonstrated by the laboratory duplicates, with two notable exceptions. Many of the duplicate results for SDG 58379 did not meet the acceptance criteria. Although the associated sample results were qualified as estimated, this may be an isolated analytical incident, since the duplicate results were generally acceptable in the other SDGs. The precision could not be evaluated for SDG 55943 because a sample duplicate analysis was not performed due to insufficient sample volume.
- The results for the Carp-1 SRM analyses were generally acceptable, with two notable exceptions. The results for the co-elution of congeners 5 and 8 on the Rtx-5 column and congener 195 on the Apiezon L column were consistently outside of the acceptance limits, indicating analytical difficulties in the quantitation of these congeners. Caution should be exercised when using results for these congeners.

A positive control sample was extracted and analyzed with each sample batch. Congener results, which exceeded two times the standard deviation from the average concentration reported by the U.S. Fish and Wildlife (Positive Control Carp Tracking, 10/07/93), are noted in the report. As certified values are not available for the control sample, no qualifiers were assigned, but comparisons could be used during data assessment.

Data, as qualified, are acceptable for use.

TABLE 1
SAMPLE INDEX

CLIENT: IEC

PROJECT NAME: HUDSON RIVER PROJECT

ECOCHM PROJECT NO.: C6311-42

Sample Delivery Group 55732	Sample ID	Laboratory ID
Full Validation	HP3523	282155
	HP3524	282156
	HP3525	282157
	HP3526	282158
	HP3527	282159
	HP3550	282160
	HP3551	282161
	HP3552	282162
	HP3553	282163
	HP3554	282164
	HP3556	282165
	HP3556 REP	282165DP
	HP3573	282166
	HP3574	282167
	3T2889	282168
	3T2890	282169
	3T2891	282170
	3T2892	282171
	3T2893	282172
	3T2894	282173
	3T2895	282174
Sample Delivery Group 55943	Sample ID	Laboratory ID
Full Validation	HP3558	284131
	HP3560	284132
	HP3561	284133
	3T2898	284134
	3T2900	284135

Sample Delivery Group 55845	Sample ID	Laboratory ID
Cursory Validation	131541	283137
	131542	283138
	131543	283139
	131544	283140
	131545	283141
	131546	283142
	131547	283143
	131548	283144
	131549	283145
	139351	283146
	139351 REP	283146D2
	4T4901	283127
	4T4902	283128
	4T4903	283129
	4T4904	283130
	4T4905	283131
	4T4926	283132
	4T4927	283133
	4T4928	283134
	4T4929	283135
Sample Delivery Group 57268	Sample ID	Laboratory ID
Cursory Validation	127556	293907
	127565	293908
	127559	293909
	127581	293910
	127608	293911
	127618	293912
	127660	293913
	127662	293914
	127664	293915
	127665	293916
	127669	293917
	127708	293918
	127711	293919
	127723	293920
	127727	293921
	127727REP	293921DP

Sample Delivery Group 55939	Sample ID	Laboratory ID
Full Validation	139440	284070
	139440REP	284070DP
	139352	284071
	139353	284072
	139354	284073
	139355	284074
	139439	284075
	139441	284076
	139442	284077
	139443	284078
	139444	284079
	HP3557	284080
	HP3559	284081
	HP3568	284082
	HP3569	284083
	HP3570	284084
	HP3571	284085
	HP3572	284086
	3T2896	284087
	3T2897	284088
	3T2899	284089

Sample Delivery Group 58379	Sample ID	Laboratory ID
Cursory Validation	127651	300480
	127652	300481
	127655	300482
	127656	300483
	127685	300490
	127687	300491
	127691	300492
	127693	300493
	127699	300494
	127739	300484
	127742	300485
	127743	300486
	127744	300487
	127746	300488
	127799	300495
	127823	300496
	127826	300497
	127828	300498
	127831	300499
	127831REP	300499DP
Sample Delivery Group 62004	Sample ID	Laboratory ID
Cursory Validation	4T4500	309695R1
	4T4494	309696R1
	4T4483	309397R1
	4T4481	309698R1
	4T4484	309699R1
	139282	309700R1
	139288	309701R1
	139290	309702R1
	139286	309703R1
	139285	309704R1
	131509	309705R1
	131507	309706R1
	131508	309707R1
	131510	309708R1
	131501	309709R1
	139416	309710R1
	139404	309711R1
	139401	309712R1
	139410	309713R1
	139410REP	309713R2
	139418	309714R1

REP: Laboratory Replicate

FULL DATA VALIDATION REPORT
PCB Congener Analyses
SDG: 55732, 55939, and 55943

I. DATA PACKAGE COMPLETENESS: ACCEPTABLE/With the following discussion.

All necessary documentation for the full validation of SDG 55732, 55939, and 55943 was provided by the laboratory. It was noted that the chain of custody information for Samples HP3526, HP3527 and HP3550 was incomplete; the laboratory stated that they were instructed to continue with the analysis of these samples. No further action was taken on this basis.

II. SAMPLE HOLDING TIMES: ACCEPTABLE/With the following discussion.

The analysis holding time criterion for PCBs is 40 days from extraction date to date of analysis. All samples were analyzed within the required holding time (from the time of extraction), except for Sample HP3553 in SDG 55732 which was analyzed 41 days after extraction. As the surrogate recovery values were acceptable, and the holding time criterion was exceeded by only one day, no action was taken.

Actual sample holding times are listed in the Data Validation Worksheets.

III. INSTRUMENT PERFORMANCE: ACCEPTABLE/With the following discussion.

All instrument performance criteria were met for these analyses. Adequate chromatographic resolution was evaluated through the measurement of the appropriate peaks and valleys in one initial calibration standard and all continuing calibration verification (CCV) standards. For SDGs 55939 and 55943 the laboratory did not submit resolution summaries for any of the CCVs. The reviewer calculated the percent resolutions. In all three SDGs, the percent resolution results for the TCMX and BZ #7 pairs on the Apiezon L column were not greater than the minimum of 25%. As the quality of the chromatographic conditions, by visual examination of the chromatograms, was judged to be acceptable, no action is recommended. It was noted that instead of using BZ #192 and #193 on the Apiezon L column for the resolution check as documented in the *Hudson River NRDA PCB Analysis QC Criteria and Corrective Action* table, the laboratory used the congeners BZ #187 and #128. This change was adopted in the data validation review; no other action is recommended. The percent resolution for congeners BZ #192 and #193 in SDGs 55939 and 55943 were calculated by the reviewer, and were acceptable (greater than the 25% minimum percent resolution criteria).

For SDG 55732, the retention times of congener BZ #101 on the Rtx-5 column and congener BZ #126 were checked in all standards and found to be acceptable. For SDGs 55939 and 55943, the retention times of congener BZ #22 on the Rtx-5 column and congener BZ #4 on the Apiezon L column were checked in all standards and found to be acceptable.

IV. CALIBRATION: ACCEPTABLE/With the following exceptions.

Qualified Data: See the Data Qualifier Summary Table.

Discussion:

All reported curve correlation coefficients were greater than or equal to 0.9950. The laboratory did not calculate or summarize the percent relative standard concentration error (%RSCE) values of the five calibration points. For each SDG, the %RSCE values of the five calibration points for one congener on each column were calculated by the reviewers. All recalculated %RSCE values met the criteria of less than 15%.

The %D results (from the true values) for all analytes for each continuing calibration verification (CCV) standard were less than the individual congener control limit of 25%, except for the following:

SDG	CCV Analysis Date and Time	Column	Congener	Percent Difference Value
55732	1/10/96 19:51	Apiezon L	209	30%
	1/11/96 07:30		205	30%
			206	30%
			209	30%
	1/12/96 00:54		209	30%
	1/12/96 07:23		205	30%
			206	30%
			209	30%
	1/17/96 15:30		209	30%
	1/18/96 07:02		189	30%
			194	30%
			205	30%
			206	30%
			209	40%
	1/11/96 07:30	Rtx-5	3	32%
	1/18/96 07:02		209	30%
	1/31/96 14:04		119	30%

Associated positive sample results were qualified as estimated (J). Non-detect results were judged to be unaffected.

The %D average for all congeners in a given CCV were less than the control limit of 15% for all CCVs.

V. BLANK ANALYSES: ACCEPTABLE/With the following exceptions.

Qualified Data: See the Data Qualifier Summary Table.

Discussion:

Method blanks were extracted and analyzed at the required frequency of one blank for every batch. Several PCB congeners were detected at low levels by the laboratory in all method blanks. Action levels were established at five times the reported blank concentrations. Associated positive sample results less than the action levels were qualified as not detected (U).

Instrument blanks were analyzed every ten samples and prior to the analysis of the continuing calibration standards, as required. Positive sample results at concentrations less than five times the blank concentration were qualified as not detected (U).

Equipment rinsate blanks were submitted with each batch of samples homogenized by the laboratory in order to evaluate the potential of carryover of PCB contamination from sample to sample during the homogenization procedure. Approximately 150 milliliters of hexane were used to rinse the homogenization equipment; the results from the analysis of this hexane were reported on a $\mu\text{g/L}$ basis, rather than $\mu\text{g/Kg}$ basis, and thus, are not directly comparable to the sample results. A comparison was made by using the smallest sample weight homogenized in the batch to convert the hexane rinse results to $\mu\text{g/Kg}$. In each SDG it was determined that the carryover was minimal and would have an insignificant impact on the sample results. For SDG 58379, an equipment blank was generated at the time of rehomogenization, and reported in $\mu\text{g/Kg}$.

VI. SURROGATE RECOVERY: ACCEPTABLE/With the following discussion.

The %R values of 2,3,3',4,5,5',6-heptachlorobiphenyl (BZ #192) and tetrachloro-m-xylene (TCMX) were within the 50% to 125% control limits in all samples, except for the Rtx-5 TCMX %R value (45%) for Sample HP3573, the Apiezon L BZ #192 %R value for equipment blanks (128%) EB1 in SDG 55732 and (126%) EB in SDG 58379, and the Apiezon L TCMX %R value (148%) for Sample 139443DL in SDG 55939. As the Apiezon L TCMX %R value and BZ #192 %R values for Sample HP3573 were acceptable, the Rtx-5 BZ #192 %R value and the TCMX %R values for EB1 and EB were acceptable, and the Apiezon BZ #192 %R value and the Rtx-5 TCMX %R values were acceptable, no qualifiers were assigned.

VII. BLANK SPIKE SAMPLE ANALYSIS: ACCEPTABLE/With the following exceptions.

Qualified Data: See the Data Qualifier Summary Table.

Discussion:

A blank spike (BS) was extracted and analyzed at the frequency requirement of one per batch. All spiked analyte recovery values were within the control limits of 80% to 120% in SDG 55732,

except for congener BZ #180 (72%) on the Rtx-5 column and the coelution of BZ #126/129/178 (138%) on the Rtx-5 column. All associated BZ #180 results were qualified as estimated (J/UJ), and all associated BZ #126/129/178 results were qualified as estimated (J).

All spiked analyte recovery values were within the control limits of 80% to 120% in SDG 55939, except for the co-elutions of BZ #126/129/178 (60% and 58%) on the Rtx-5 column for Q1-MBS and Q2-MBS, and congener BZ #209 (122%) on the Apiezon L column. Results associated with BS recovery values that were less than control limits were qualified as estimated (J/UJ). Positive results associated with BS recovery values that were outside the control limits were qualified as estimated (J); reporting limits associated with BS recovery values that were less than control limits were qualified as estimated (UJ).

All spiked analyte recovery values were within the control limits of 80% to 120% in SDG 55943, except for the co-elutions of BZ #77/110 (72%) and BZ #126/129/178 (48%) on the Rtx-5 column and congener BZ #126 (70%) on the Apiezon L column. Results associated with BS recovery values that were less than control limits were qualified as estimated (J/UJ).

VIII. SAMPLE DUPLICATE ANALYSIS: ACCEPTABLE/With the following exceptions.

Qualified Data: See the Data Qualifier Summary Table.

Discussion:

One duplicate sample was extracted and analyzed with both SDG 55732 and 55939. All relative percent difference (RPD) values were less than the control limit of 50%, or the difference between the original sample and duplicate sample values was less than five times the reporting limit if either value was less than five times the reporting limit, except for congener BZ #138 on the Rtx-5 column in SDG 55732. Associated sample results were qualified as estimated (J).

No duplicate sample was analyzed with SDG 55943. The lab stated in the case narrative that a duplicate analysis could not be performed because an insufficient sample amount was received by the laboratory.

IX. STANDARD REFERENCE MATERIAL (SRM) ANALYSIS: ACCEPTABLE/With the following exceptions.

Qualified Data: See the Data Qualifier Summary Table.

Discussion:

SRM Carp-1 samples (acquired from National Research Council, Canada) were extracted and analyzed at the required frequency of one per each 10 samples per SDG. All results were within the established acceptance criteria, with the exceptions noted below.

In SDG 55732 the reported result for congener BZ #5/8 on the Rtx-5 in SRMCP1A was less than the acceptance criteria of 0.64 µg/Kg to 7.17 µg/Kg at 0 µg/Kg. All associated results were qualified as estimated (J/UJ). The reported result for congener BZ #195 on the Apiezon L in

SRMCP1B was greater than the acceptance criteria of 2.23 µg/Kg to 6.78 µg/Kg at 7.5 µg/Kg. All associated sample results were qualified as estimated (J).

In SDG 55939 the reported result for congener BZ #5/8 on the Rtx-5 in SRMCP1A was less than the acceptance criteria of 0.64 µg/Kg to 7.17 µg/Kg at 0 µg/Kg. All associated results were qualified as estimated (J/UJ). The reported results for congener BZ #195 on the Apiezon L in SRMCP1A and SRMCP1B were greater than the acceptance criteria of 2.23 µg/Kg to 6.78 µg/Kg at 7.5 µg/Kg and 7.6 µg/Kg, respectively. All associated sample results were qualified as estimated (J).

X. COMPOUND QUANTITATION AND GAS CHROMATOGRAPH/ION TRAP DETECTOR (GC/ITD) CONFIRMATION ANALYSIS: ACCEPTABLE/With the following discussion.

Six samples, two per SDG, were analyzed by GC/ITD to confirm the quantitation of the analytes. For each PCB congener that was at a concentration greater than ten times the reporting limit and did not coelute with other congeners, the result of the GC/ITD confirmation was compared to both the Rtx-5 column result and the Apeizon L column result from the GC/ECD analysis. If the RPD was greater than the control limit of 100%, the chromatograms were reviewed to confirm the identification of the congener.

Trends were seen for two different congeners, 16 and 56. For congener 16 it appears that another analyte co-elutes with 16 on the Rtx-5 column, but not on the Apiezon L column, resulting in higher values for the Rtx-5 column. This interference is also seen in the GC/ITD analysis, indicating that the interference may be another PCB congener. Thus, a conservative approach would suggest using the Apiezon L column result for this congener. Congener 56 is affected in a similar fashion.

XI. COMPOUND IDENTIFICATIONS: ACCEPTABLE/All criteria met.

All surrogate retention times in all samples for these SDGs were checked to determine if they were within the established retention time windows; no outliers were found.

XII. POSITIVE CONTROL SAMPLE ANALYSIS: ACCEPTABLE/With the following discussion.

One positive control sample (Saginaw Bay Carp) was extracted and analyzed with each SDG. Fourteen PCB congeners were selected for evaluation because they were free of co-elutions and had concentrations above the calibrated quantitation limit. The laboratory results for these 14 PCB congeners were compared to the average results provided by U.S. Fish and Wildlife (Positive Control Carp Tracking, 10/07/93). Results of the analysis and evaluation range are summarized in the table below.

PCB Congener	Evaluation Range (µg/Kg)	Sample Result (µg/Kg)	Sample Result (µg/Kg)	Sample Result (µg/Kg)
		SDG 55732	SDG 55939	SDG 55943
		Rtx-5/Apiezon L	Rtx-5/Apiezon L	Rtx-5/Apiezon L
18	64 to 88	71/75	76/75	60/61*
28	53 to 77	81/81*	93/87*	72/72
44	211 to 291	260/280	270/270	220/220
45	20 to 28	23/22	27/22	21/16*
52	357 to 493	370/420	400/410	310/340*
74	145 to 189	200/220*	220/230*	170/180
83	35 to 51	32/33*	36/34*	26/26*
92	69 to 101	57/67*	64/69*	50/55*
97	144 to 192	160/160	160/160	130/130*
99	302 to 402	260/290*	280/280*	210/220*
128	39 to 63	47/46	47/47	37/36*
177	20 to 28	28/35*	29/32*	24/25
180	65 to 85	130/150*	130/150*	99/120*
194	14 to 18	28/30*	28/31*	22/24*

* Outside Evaluation Range

For SDGs 55732 and SDG 55939, the results for eight of the analytes (congeners 28, 74, 83, 92, 99, 177, 180, and 194) were outside plus or minus two times the standard deviation from the average. For SDG 55943, the results for 10 of the analytes (congeners 18, 45, 52, 83, 92, 97, 99, 128, 180, and 194) were outside plus or minus two times the standard deviation from the average. Since the positive control sample results were considered to be informational only, no qualifiers were assigned.

XIII. LIPIDS ANALYSIS: ACCEPTABLE/All criteria met.

Percent lipid values were verified as correctly calculated and reported. All %D values for consecutive weighings were less than the upper control limit of 10%. For SDGs 55732 and 55939 the percent lipid RPD values between the original and duplicate results were less than the control limit of 20% at 15.1% and 2.1%, respectively. No duplicate sample analysis was performed for SDG 55943.

XIV. MOISTURE ANALYSIS: ACCEPTABLE/All criteria met.

Percent moisture values were verified as correctly calculated and reported. The percent moisture RPD values were less than the control limit of 20%. No duplicate sample analysis was performed for SDG 55943.

XV. COMPOUND QUANTITATION AND REPORTED DETECTION LIMITS: ACCEPTABLE/All criteria met.

The reported detection limits were correctly adjusted for dilution factors.

It appears that there may be interferences present on the Rtx-5 column which cause an over estimation of the congener 41 results. For example, the results for Sample HP 3527 in SDG 55732 are presented in the following table:

	Rtx-5 ECD Results	Apiezon L ECD Results	Rtx-5 GC/ITD Results
Congener	µg/Kg	µg/Kg	µg/Kg
40	31	-	26.9
41	150	-	256
40/41	-	41	-

It appears from the Rtx-5 ECD results that the total for congener 40 and 41 should be 181 µg/Kg, yet the Apiezon L results indicate a total of 41 µg/Kg. The GC/ITD results for congener 40 agree well with the Rtx-5. Although the GC/ITD result for congener 41 is 256 µg/Kg (versus 150 µg/Kg for the Rtx-5 ECD result), this detector may be subject to the same interferences as the ECD detector. This interference may be congener 64. Caution should be exercised when using data for congeners 40 and 41.

XVI. OVERALL ASSESSMENT OF THE DATA

Based on this evaluation, the laboratory adhered to the specified method.

Accuracy was generally acceptable, as demonstrated by the %R values of the surrogate, blank spike, and SRM analytes. Of the fourteen analytes which were compared to U.S. Fish and Wildlife results in a positive control sample, eight of the analytes for SDGs 55732 and 55939 and ten for SDG 55943 were more than two standard deviations from the Fish and Wildlife's average reported concentrations.

Precision was generally acceptable, as demonstrated by the RPD values of the sample and laboratory duplicate. Precision could not be evaluated for SDG 55943 because a sample duplicate analysis was not performed.

Qualifiers were assigned due to blank contamination, CCV %D outliers, blank spike results, and SRM Carp-1 results.

All data, as qualified, are acceptable for use.

CURSORY DATA VALIDATION REPORT

PCB Congener Analyses

SDGs: 55845, 57268, 58379 & 62004

I. DATA PACKAGE COMPLETENESS: ACCEPTABLE/With the following discussion.

All necessary documentation for SDG 55845 were provided by the laboratory. All necessary documentation for SDG 57268, 58379 and 62004 were provided by the laboratory with the exception of calibration resolution check summaries. The data were reviewed without the summaries; no further action was taken.

The case narrative for SDG 55845 listed Sample 4T4930 as having low surrogate recovery values in the original extract. The sample was re-extracted to be included in another SDG. All of the samples in SDG 62004 were re-extracted as the original SRM results were not within the acceptance criteria. The case narratives note that the value for extract volumes were rounded to 1 mL on the result summary forms; the actual volume used in concentration calculations was 1.25 mL.

The chain-of-custody (COC) forms for SDGs 57268 and 58379 were not field COC forms and did not list sampling dates. The samples in these SDGs were received at Inchcape Testing Services from Hazleton Labs as homogenates. Sample 127748 was listed on the COC form for SDG 58379, but no results were submitted for this sample.

II. SAMPLE HOLDING TIMES: ACCEPTABLE/All criteria met.

The analysis holding time criterion for PCBs in a solid matrix is 40 days from extraction date to date of analysis. All samples in SDGs 55845, 57268, 58379 and 62004 were analyzed within the required holding time (from the time of extraction). Actual sample holding times are listed in the Data Validation Worksheets for PCB Congeners by GC/ECD.

III. CALIBRATION: ACCEPTABLE/With the following exceptions.

Qualified Data: See the Data Qualifier Summary Table.

Discussion:

For SDGs 55845, 57268, 58379 and 62004, all reported curve correlation coefficients were greater than or equal to 0.9950. The laboratory did not calculate or summarize the percent relative standard concentration error (%RSCE) values of the five calibration points; no action was taken by the reviewer for the omission of %RSCE values.

For SDG 58379, several %D results (from the true values) for target analytes in the CCV standards were outside the $\pm 25\%$ control limit for an individual congener. Associated positive

sample results were qualified as estimated (J). Non-detect results were judged to be unaffected, as outlying negative %D values are not indicative of a loss of sensitivity.

For SDG 57268, several %D results were outside the $\pm 25\%$ control limit for an individual congener. Associated positive sample results were qualified as estimated (J). Non-detect results were judged to be unaffected for %D values less than +50%, as outlying negative %D values are not indicative of a loss of sensitivity. For %D values greater than +50%, not detected results were also estimated (UJ) as reporting limits may be affected. The %D average for all congeners in a given CCV were not calculated by the laboratory. The data reviewer assessed the average results, and all were less than 15% except for the Rtx-5 column CCV analyzed 4/25/96 at 21:46 (Lab File: I09). As the associated data were already qualified because of the individual %D value outliers in this CCV, no further action was necessary.

For SDG 55845 and 62004, the %D results were within the $\pm 25\%$ control limit. The %D average for all congeners in a given CCV were not calculated by the laboratory. The data reviewer assessed the average results, and all were less than 15%.

IV. BLANK ANALYSES: ACCEPTABLE/With the following exceptions.

Qualified Data: See the Data Qualifier Summary Table.

Discussion:

Method blanks were extracted and analyzed at the required frequency of one blank for every batch or 20 samples, whichever is more frequent. For SDGs 55845, 57268, 58379 and 62004 several PCB congeners were detected at low levels by the laboratory. Action levels were established at five times the reported blank concentrations. Associated positive sample results less than the action levels were qualified as not detected (U).

Instrument blanks were analyzed every ten samples and prior to the analysis of the continuing calibration standards as required. Positive sample results at concentrations less than five times the blank concentration were qualified as not detected (U).

V. SURROGATE RECOVERY: ACCEPTABLE/All criteria met.

The %R values of 2,3,3',4,5,5',6-heptachlorobiphenyl (BZ #192) and tetrachloro-m-xylene (TCMX) were within the 50% to 125% control limits, except for the dilution analyses of several samples. No action was taken on this basis.

VI. BLANK SPIKE SAMPLE ANALYSIS: ACCEPTABLE/With the following exceptions.

Qualified Data: See the Data Qualifier Summary Table.

Discussion:

The frequency requirement of one BS for every batch or 20 samples, whichever is more frequent, was met for all SDGs. Several %R values were outside of control limits. The outliers are listed in the Data Validation Worksheet. Positive results in associated samples were qualified as estimated (J); reporting limits for compounds associated with BS results that were less than the lower control limit were qualified as estimated (UJ). For Blank Spike P9-MBS in SDG 55845, 13 congeners (ranging from 42% to 78%) on the Rtx-5 column and 14 congeners (ranging from 70% to 78%) on the Apiezon L column were less than the QC limit. As these results may have been the result of a spiking error, and may not be representative of the accuracy of the results for the associated samples, no data were qualified because of the outliers in Blank Spike P9-MBS.

VII. SAMPLE DUPLICATE ANALYSIS: ACCEPTABLE/With the following exceptions.

Qualified Data: See the Data Qualifier Summary Table.

Discussion:

One duplicate sample was extracted and analyzed with each SDG, as required. Several RPD values were greater than the upper control limit of 50%, or the difference between the original sample and duplicate sample values was greater than five times the reporting limit if either value was less than five times the reporting limit. These outliers are listed in the Data Validation Worksheet. Associated positive sample results were qualified as estimated (J).

VIII. STANDARD REFERENCE MATERIAL (SRM) ANALYSIS: ACCEPTABLE/with the following exceptions.

Qualified Data: See the Data Qualifier Summary Table.

Discussion:

SRM Carp-1 samples (acquired from National Research Council, Canada) were extracted and analyzed at the required frequency of one per each 10 samples per SDG. All results were within the established acceptance criteria, with the following exceptions.

In SDG 55845 the reported results for congeners BZ #5/8 on the Rtx-5 and BZ #8 on the Apiezon L columns for SRMCP1A were less than the acceptance criteria of 0.64 µg/Kg to 7.17 µg/Kg at 0 µg/Kg. All associated results were qualified as estimated (J/UJ). The reported results for congeners BZ #195 (7.8 µg/Kg), and BZ #209 (7.6 µg/Kg) on the Apiezon L column for SRMCP1A were greater than the upper acceptance criteria of 6.78 µg/Kg and 7.05 µg/Kg, respectively. All associated sample results were qualified as estimated (J). The reported result for congener BZ #138/163/164 on the Rtx-5 column for SRMCP1B was less than the acceptance

criteria of 79 µg/Kg to 125 µg/Kg at 71 µg/Kg. All associated results were qualified as estimated (J/UJ).

In SDG 57268 the reported results for congeners BZ #5/8 on the Rtx-5 and BZ #8 on the Apiezon L columns for SRMCP1A and for BZ #5/8 on the Rtx-5 for SRMCP1B were less than the acceptance criteria of 0.64 µg/Kg to 7.17 µg/Kg at 0 µg/Kg. All associated results were qualified as estimated (J/UJ). The reported result for congener BZ #195 (6.8 µg/Kg) on the Apiezon L column for SRMCP1B was greater than the upper acceptance criteria of 6.78 µg/Kg. All associated sample results were qualified as estimated (J).

In SDG 58379 the reported results for congeners BZ #8 on the Apiezon L column for SRMCP1A were less than the acceptance criteria. All associated results were qualified as estimated (J/UJ). The reported result for congener BZ #195 on the Apiezon L column and BZ #5/8 and BZ #195/208 on the Rtx-5 column for SRMCP1A were greater than the upper acceptance criteria. The reported result for congener BZ #180 and BZ #195 on the Apiezon L column for SRMCP1B were also greater than the upper acceptance criteria. All associated sample results were qualified as estimated (J).

In SDG 62004 the reported results for congeners BZ #209 on the Rtx-5 and Apiezon L columns for SRMCP1A were greater than the acceptance criteria. All associated results were qualified as estimated (J). The reported result for the coelutions of congeners BZ #138/163/164 and BZ #170/190 on the Apiezon L column for SRMCP1B were less than the lower acceptance criteria. All associated sample results were qualified as estimated (J/UJ).

IX. POSITIVE CONTROL SAMPLE ANALYSIS: ACCEPTABLE/With the following discussion.

One positive control sample (Saginaw Bay Carp) was extracted and analyzed with each SDG of tissue samples. Fourteen PCB congeners were selected for evaluation because they were free of co-elutions and had concentrations greater than the calibrated quantitation limit. The laboratory results for these 14 PCB congeners were compared to the average results provided by U.S. Fish and Wildlife (Positive Control Carp Tracking, 10/07/93). Results of the analyses and evaluation ranges are summarized in the table on the next page.

PCB Congener	Evaluation Range (µg/Kg)	Sample Results			
		SDG 55845	SDG 57268	SDG 58379	SDG 62004
		Rtx-5/Apiezon L	Rtx-5/Apiezon L	Rtx-5/Apiezon L	Rtx-5/Apiezon L
18	64 to 88	52*/54*	68/72	76/67	56*/47*
28	53 to 77	58/59	83*/81*	80*/77	67/50*
44	211 to 291	190*/190*	270/260	250/240	200*/170*
45	20 to 28	19*/15*	24/21	27/20	19*/16*
52	357 to 493	270*/290*	390/410	360/370	280*/260*
74	145 to 189	140*/160	210*/210*	200*/190*	160/130*
83	35 to 51	26*/23*	29*/29*	38/27*	26*/22*
92	69 to 101	43*/48*	50*/62*	61*/59*	48*/42*
97	144 to 192	100*/110*	160/160	150/140*	120*/100*

PCB Congener	Evaluation Range (µg/Kg)	Sample Results			
		SDG 55845	SDG 57268	SDG 58379	SDG 62004
		Rtx-5/Apiezon L	Rtx-5/Apiezon L	Rtx-5/Apiezon L	Rtx-5/Apiezon L
99	302 to 402	200*/190*	270*/270*	260*/240*	210*/170*
128	39 to 63	33*/32*	41/41	45/39	36*/28*
177	20 to 28	20/23	24/29*	29*/29*	23/20
180	65 to 85	86*/100*	120*/140*	120*/130*	98*/87*
194	14 to 18	19*/20*	25*/25*	31*/24*	21*/17

* Outside Evaluation Range

Several analytes for all of the SDGs were outside plus or minus two times the standard deviation from the average. Since the positive control sample results were considered to be informational only, no qualifiers were assigned.

X. LIPIDS ANALYSIS: ACCEPTABLE/With the following discussion.

For SDG 55845, the RPD value for the duplicate pair was 28%, greater than the 20% upper QC limit. No qualification of data was necessary as the two lipid values were relatively low (the difference was 1%). Also, the SRMs had acceptable RPD values; acceptable laboratory precision was demonstrated.

For SDGs 57268, 58379 and 62004, the RPD value of percent lipid values were less than the upper control limit of 20%.

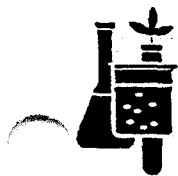
XI. OVERALL ASSESSMENT OF THE DATA

Based on this evaluation, the laboratory adhered to the specified method.

Accuracy was generally acceptable, as demonstrated by the %R values of the surrogate and matrix spiking compounds. Of the fourteen analytes which were compared to U.S. Fish and Wildlife results in a positive control sample, several of the analytes for all SDGs were more than two standard deviations from the Fish and Wildlife's average reported concentrations. As none of the results are certified, no relative accuracy assessment can be made.

Precision was generally acceptable, as demonstrated by the RPD values of the laboratory duplicate set.

All data, as qualified, are acceptable for use.



EcoChem, Inc.

Environmental Science and Chemistry

Appendix A
DATA QUALIFIER SUMMARY TABLE

TABLE 2
DATA VALIDATION QUALIFIER CODES

U	The analyte was analyzed for, but 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. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

DATA QUALIFIER SUMMARY TABLE

6311-43

SDG: 55732

Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
HP3523	282155	SOIL	APIEZON	189	0.88	J	J-5B	UG/KG
HP3523	282155	SOIL	APIEZON	190	5.1		U-7	UG/KG
HP3523	282155	SOIL	APIEZON	194	16		J-5B	UG/KG
HP3523	282155	SOIL	APIEZON	195	5.0		J-14	UG/KG
HP3523	282155	SOIL	APIEZON	205	1.2	J	J-5B	UG/KG
HP3523	282155	SOIL	APIEZON	206	16		J-5B	UG/KG
HP3523	282155	SOIL	APIEZON	209	7.7		J-5B	UG/KG
HP3523	282155	SOIL	APIEZON	5+19	3.7		U-7	UG/KG
HP3524	282156	SOIL	APIEZON	189	2.2	J	J-5B	UG/KG
HP3524	282156	SOIL	APIEZON	190	11		U-7	UG/KG
HP3524	282156	SOIL	APIEZON	194	46		J-5B	UG/KG
HP3524	282156	SOIL	APIEZON	195	14		J-14	UG/KG
HP3524	282156	SOIL	APIEZON	205	3.0		J-5B	UG/KG
HP3524	282156	SOIL	APIEZON	206	56		J-5B	UG/KG
HP3524	282156	SOIL	APIEZON	209	26		J-5B	UG/KG
HP3524	282156	SOIL	APIEZON	5+19	5.5		U-7	UG/KG
HP3525	282157	SOIL	APIEZON	195	5.1		J-14	UG/KG
HP3525	282157	SOIL	APIEZON	4	12	B	U-7	UG/KG
HP3525	282157	SOIL	APIEZON	5+19	5.2		U-7	UG/KG
HP3526	282158	SOIL	APIEZON	165	1.0		U-7	UG/KG
HP3526	282158	SOIL	APIEZON	195	3.5		J-14	UG/KG
HP3526	282158	SOIL	APIEZON	209	2.2		J-5B	UG/KG
HP3526DL	282158D1	SOIL	APIEZON	190	6.1	DJ	U-7	UG/KG
HP3526DL	282158D1	SOIL	APIEZON	194	10	D	J-5B	UG/KG
HP3526DL	282158D1	SOIL	APIEZON	195	4.4	DJ	J-14	UG/KG
HP3526DL	282158D1	SOIL	APIEZON	206	8.4	D	J-5B	UG/KG
HP3550	282160	SOIL	APIEZON	195	4.3	J	J-14	UG/KG
HP3551	282161	SOIL	APIEZON	195	11		J-14	UG/KG
HP3551	282161	SOIL	APIEZON	4	22	B	U-7	UG/KG
HP3552	282162	SOIL	APIEZON	195	7.4		J-14	UG/KG
HP3552	282162	SOIL	APIEZON	4	23	B	U-7	UG/KG
HP3552	282162	SOIL	APIEZON	5+19	18		U-7	UG/KG
HP3553	282163	SOIL	APIEZON	165	1.9		U-7	UG/KG
HP3553	282163	SOIL	APIEZON	195	16		J-14	UG/KG
HP3553DL	282163D1	SOIL	APIEZON	195	18	D	J-14	UG/KG
HP3553DL	282163D1	SOIL	APIEZON	20+31	58	D	U-7	UG/KG
HP3553DL	282163D1	SOIL	APIEZON	28	69	D	U-7	UG/KG
HP3553DL	282163D1	SOIL	APIEZON	4	8.3	DBJ	U-7	UG/KG
HP3553DL	282163D1	SOIL	APIEZON	5+19	7.4	DJ	U-7	UG/KG
HP3554	282164	SOIL	APIEZON	195	5.9		J-14	UG/KG

DATA QUALIFIER SUMMARY TABLE

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Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
HP3554	282164	SOIL	APIEZON	4	11	B	U-7	UG/KG
HP3554	282164	SOIL	APIEZON	5+19	11		U-7	UG/KG
HP3556	282165	SOIL	APIEZON	195	3.6		J-14	UG/KG
HP3556	282165	SOIL	APIEZON	209	6.3		J-5B	UG/KG
HP3573	282166	SOIL	APIEZON	195	2.4		J-14	UG/KG
HP3573	282166	SOIL	APIEZON	209	4.4		J-5B	UG/KG
HP3574	282167	SOIL	APIEZON	195	6.2		J-14	UG/KG
HP3574	282167	SOIL	APIEZON	209	8.0		J-5B	UG/KG
HP3574	282167	SOIL	APIEZON	5+19	6.0	B	U-7	UG/KG
3T2890	282169	SOIL	APIEZON	190	2.6	J	U-7	UG/KG
3T2890	282169	SOIL	APIEZON	206	4.9	J	J-5B	UG/KG
3T2890	282169	SOIL	APIEZON	209	2.9	J	J-5B	UG/KG
3T2891	282170	SOIL	APIEZON	190	3.6	J	U-7	UG/KG
3T2891	282170	SOIL	APIEZON	206	5.2		J-5B	UG/KG
3T2891	282170	SOIL	APIEZON	209	2.6	J	J-5B	UG/KG
3T2892	282171	SOIL	APIEZON	190	6.7		U-7	UG/KG
3T2892	282171	SOIL	APIEZON	195	6.7		J-14	UG/KG
3T2892	282171	SOIL	APIEZON	206	14		J-5B	UG/KG
3T2892	282171	SOIL	APIEZON	209	5.8		J-5B	UG/KG
3T2893	282172	SOIL	APIEZON	190	3.7	J	U-7	UG/KG
3T2893	282172	SOIL	APIEZON	195	3.4	J	J-14	UG/KG
3T2893	282172	SOIL	APIEZON	206	5.9		J-5B	UG/KG
3T2893	282172	SOIL	APIEZON	209	3.0	J	J-5B	UG/KG
3T2894	282173	SOIL	APIEZON	195	5.7		J-14	UG/KG
3T2894	282173	SOIL	APIEZON	206	9.2		J-5B	UG/KG
3T2894	282173	SOIL	APIEZON	209	3.0		J-5B	UG/KG
3T2895	282174	SOIL	APIEZON	190	6.3		U-7	UG/KG
3T2895	282174	SOIL	APIEZON	195	6.5		J-14	UG/KG
3T2895	282174	SOIL	APIEZON	206	14		J-5B	UG/KG
3T2895	282174	SOIL	APIEZON	209	6.1		J-5B	UG/KG
HP3523	282155	SOIL	RTX-5	119	5.1		J-9	UG/KG
HP3523	282155	SOIL	RTX-5	126+129+178	12		J-10	UG/KG
HP3523	282155	SOIL	RTX-5	180	59		J-10	UG/KG
HP3523	282155	SOIL	RTX-5	198	1.1	J	U-7	UG/KG
HP3523	282155	SOIL	RTX-5	209	7.9		J-5B	UG/KG
HP3523	282155	SOIL	RTX-5	3	11		U-7	UG/KG
HP3523	282155	SOIL	RTX-5	5+8	1.4	J	J-14	UG/KG
HP3524	282156	SOIL	RTX-5	119	7.6		J-9	UG/KG
HP3524	282156	SOIL	RTX-5	126+129+178	24		J-10	UG/KG
HP3524	282156	SOIL	RTX-5	180	140		J-10	UG/KG

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SDG: 55732

Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
HP3524	282156	SOIL	RTX-5	198	3.0		U-7	UG/KG
HP3524	282156	SOIL	RTX-5	209	26		J-5B	UG/KG
HP3524	282156	SOIL	RTX-5	5+8	1.8	J	J-14	UG/KG
HP3525	282157	SOIL	RTX-5	126+129+178	13		J-10	UG/KG
HP3525	282157	SOIL	RTX-5	180	76		J-10	UG/KG
HP3525	282157	SOIL	RTX-5	5+8	2.5	U	UJ-14	UG/KG
HP3525	282157	SOIL	RTX-5	6	1.4	BJ	U-7	UG/KG
HP3526	282158	SOIL	RTX-5	119	9.6		J-9	UG/KG
HP3526	282158	SOIL	RTX-5	126+129+178	16		J-10	UG/KG
HP3526	282158	SOIL	RTX-5	165	0.67	J	U-7	UG/KG
HP3526	282158	SOIL	RTX-5	180	52		J-10	UG/KG
HP3526	282158	SOIL	RTX-5	198	0.88	J	U-7	UG/KG
HP3526	282158	SOIL	RTX-5	5+8	9.6		J-14	UG/KG
HP3526	282158	SOIL	RTX-5	6	3.9		U-7	UG/KG
HP3526DL	282158D1	SOIL	RTX-5	119	8.9	D	J-9	UG/KG
HP3526DL	282158D1	SOIL	RTX-5	126+129+178	7.8	D	J-10	UG/KG
HP3526DL	282158D1	SOIL	RTX-5	157+200	4.0	DJ	U-7	UG/KG
HP3526DL	282158D1	SOIL	RTX-5	180	54	D	J-10	UG/KG
HP3526DL	282158D1	SOIL	RTX-5	209	3.9	DJ	J-5B	UG/KG
HP3526DL	282158D1	SOIL	RTX-5	5+8	7.9	D	J-14	UG/KG
HP3527	282159	SOIL	RTX-5	126+129+178	12		J-10	UG/KG
HP3527	282159	SOIL	RTX-5	180	36		J-10	UG/KG
HP3527	282159	SOIL	RTX-5	5+8	6.7		J-14	UG/KG
HP3527	282159	SOIL	RTX-5	6	4.6	J	U-7	UG/KG
HP3550	282160	SOIL	RTX-5	126+129+178	8.7		J-10	UG/KG
HP3550	282160	SOIL	RTX-5	180	51		J-10	UG/KG
HP3550	282160	SOIL	RTX-5	5+8	14		J-14	UG/KG
HP3550	282160	SOIL	RTX-5	6	11	B	U-7	UG/KG
HP3551	282161	SOIL	RTX-5	119	11		J-9	UG/KG
HP3551	282161	SOIL	RTX-5	126+129+178	34		J-10	UG/KG
HP3551	282161	SOIL	RTX-5	180	200		J-10	UG/KG
HP3551	282161	SOIL	RTX-5	5+8	5.0	U	UJ-14	UG/KG
HP3551	282161	SOIL	RTX-5	6	2.8	BJ	U-7	UG/KG
HP3552	282162	SOIL	RTX-5	119	8.5		J-9	UG/KG
HP3552	282162	SOIL	RTX-5	126+129+178	25		J-10	UG/KG
HP3552	282162	SOIL	RTX-5	180	120		J-10	UG/KG
HP3552	282162	SOIL	RTX-5	5+8	5.0	U	UJ-14	UG/KG
HP3553	282163	SOIL	RTX-5	119	41		J-9	UG/KG
HP3553	282163	SOIL	RTX-5	126+129+178	40		J-10	UG/KG
HP3553	282163	SOIL	RTX-5	180	330	E	J-10	UG/KG

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SDG: 55732

Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
HP3553	282163	SOIL	RTX-5	198	1.7		U-7	UG/
HP3553	282163	SOIL	RTX-5	3	17		U-7	UG/KG
HP3553	282163	SOIL	RTX-5	5+8	0.76	J	J-14	UG/KG
HP3553DL	282163D1	SOIL	RTX-5	126+129+178	46	D	J-10	UG/KG
HP3553DL	282163D1	SOIL	RTX-5	16	39	D	U-7	UG/KG
HP3553DL	282163D1	SOIL	RTX-5	180	300	D	J-10	UG/KG
HP3553DL	282163D1	SOIL	RTX-5	26	19	D	U-7	UG/KG
HP3553DL	282163D1	SOIL	RTX-5	31	55	D	U-7	UG/KG
HP3553DL	282163D1	SOIL	RTX-5	5+8	10	U	UJ-14	UG/KG
HP3554	282164	SOIL	RTX-5	119	5.4		J-9	UG/KG
HP3554	282164	SOIL	RTX-5	126+129+178	20		J-10	UG/KG
HP3554	282164	SOIL	RTX-5	180	100		J-10	UG/KG
HP3554	282164	SOIL	RTX-5	5+8	5.0	U	UJ-14	UG/KG
HP3556	282165	SOIL	RTX-5	119	4.2		J-9	UG/KG
HP3556	282165	SOIL	RTX-5	126+129+178	10		J-10	UG/KG
HP3556	282165	SOIL	RTX-5	180	70		J-10	UG/KG
HP3556	282165	SOIL	RTX-5	5+8	2.5	U	UJ-14	UG/KG
HP3556	282165	SOIL	RTX-5	6	2.9	B	U-7	UG/KG
HP3573	282166	SOIL	RTX-5	119	2.9		J-9	UG/KG
HP3573	282166	SOIL	RTX-5	126+129+178	6.0		J-10	UG/KG
HP3573	282166	SOIL	RTX-5	180	47		J-10	UG/
HP3573	282166	SOIL	RTX-5	5+8	0.80	J	J-14	UG/KG
HP3573	282166	SOIL	RTX-5	6	2.3		U-7	UG/KG
HP3574	282167	SOIL	RTX-5	119	1.6	J	J-9	UG/KG
HP3574	282167	SOIL	RTX-5	126+129+178	20		J-10	UG/KG
HP3574	282167	SOIL	RTX-5	180	110		J-10	UG/KG
HP3574	282167	SOIL	RTX-5	5+8	1.4	J	J-14	UG/KG
HP3574	282167	SOIL	RTX-5	6	1.3	BJ	U-7	UG/KG
3T2889	282168	SOIL	RTX-5	126+129+178	8.7		J-10	UG/KG
3T2889	282168	SOIL	RTX-5	180	28		J-10	UG/KG
3T2889	282168	SOIL	RTX-5	3	53	B	U-7	UG/KG
3T2889	282168	SOIL	RTX-5	5+8	4.2		J-14	UG/KG
3T2890	282169	SOIL	RTX-5	126+129+178	8.0		J-10	UG/KG
3T2890	282169	SOIL	RTX-5	180	28		J-10	UG/KG
3T2890	282169	SOIL	RTX-5	5+8	14		J-14	UG/KG
3T2890	282169	SOIL	RTX-5	6	3.9	BJ	U-7	UG/KG
3T2891	282170	SOIL	RTX-5	126+129+178	7.0		J-10	UG/KG
3T2891	282170	SOIL	RTX-5	180	28		J-10	UG/KG
3T2891	282170	SOIL	RTX-5	5+8	8.6		J-14	UG/KG
3T2892	282171	SOIL	RTX-5	126+129+178	17		J-10	UG/KG

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SDG: 55732

Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
3T2892	282171	SOIL	RTX-5	180	77		J-10	UG/KG
3T2892	282171	SOIL	RTX-5	5+8	6.7		J-14	UG/KG
3T2893	282172	SOIL	RTX-5	126+129+178	8.5		J-10	UG/KG
3T2893	282172	SOIL	RTX-5	180	41		J-10	UG/KG
3T2893	282172	SOIL	RTX-5	5+8	6.8		J-14	UG/KG
3T2894	282173	SOIL	RTX-5	119	3.2		J-9	UG/KG
3T2894	282173	SOIL	RTX-5	126+129+178	18		J-10	UG/KG
3T2894	282173	SOIL	RTX-5	180	83		J-10	UG/KG
3T2894	282173	SOIL	RTX-5	5+8	3.0		J-14	UG/KG
3T2895	282174	SOIL	RTX-5	126+129+178	15		J-10	UG/KG
3T2895	282174	SOIL	RTX-5	180	72		J-10	UG/KG
3T2895	282174	SOIL	RTX-5	5+8	15		J-14	UG/KG
3T2895	282174	SOIL	RTX-5	6	3.5	BJ	U-7	UG/KG

DATA QUALIFIER SUMMARY TABLE

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SDG: 55845

Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
4T4901	283127	SOIL	APIEZON	126	4.0	U	UJ-10	UG/KG
4T4901	283127	SOIL	APIEZON	128	24	B	U-7	UG/KG
4T4901	283127	SOIL	APIEZON	158	14	B	U-7	UG/KG
4T4901	283127	SOIL	APIEZON	190	5.7		U-7	UG/KG
4T4901	283127	SOIL	APIEZON	195	4.2		J-14	UG/KG
4T4901	283127	SOIL	APIEZON	209	2.6	J	J-14	UG/KG
4T4901	283127	SOIL	APIEZON	33	3.8	BJ	U-7	UG/KG
4T4901	283127	SOIL	APIEZON	4	11	B	U-7	UG/KG
4T4901	283127	SOIL	APIEZON	8	4.0	U	UJ-14	UG/KG
4T4902	283128	SOIL	APIEZON	126	1.0	U	UJ-10	UG/KG
4T4902	283128	SOIL	APIEZON	128	5.5	B	U-7	UG/KG
4T4902	283128	SOIL	APIEZON	158	3.0	B	U-7	UG/KG
4T4902	283128	SOIL	APIEZON	18	6.2	B	U-7	UG/KG
4T4902	283128	SOIL	APIEZON	190	1.5		U-7	UG/KG
4T4902	283128	SOIL	APIEZON	195	1.3		J-14	UG/KG
4T4902	283128	SOIL	APIEZON	209	0.95	J	J-14	UG/KG
4T4902	283128	SOIL	APIEZON	4	6.2	B	U-7	UG/KG
4T4902	283128	SOIL	APIEZON	8	1.0	U	UJ-14	UG/KG
4T4903	283129	SOIL	APIEZON	126	1.5	U	UJ-10	UG/KG
4T4903	283129	SOIL	APIEZON	128	14	B	U-7	UG/KG
4T4903	283129	SOIL	APIEZON	18	1.0	BJ	U-7	UG/KG
4T4903	283129	SOIL	APIEZON	190	4.5		U-7	UG/KG
4T4903	283129	SOIL	APIEZON	195	3.4		J-14	UG/KG
4T4903	283129	SOIL	APIEZON	209	1.3	J	J-14	UG/KG
4T4903	283129	SOIL	APIEZON	4	1.3	BJ	U-7	UG/KG
4T4903	283129	SOIL	APIEZON	8	1.5	U	UJ-14	UG/KG
4T4904	283130	SOIL	APIEZON	126	5.0	U	UJ-10	UG/KG
4T4904	283130	SOIL	APIEZON	190	14		U-7	UG/KG
4T4904	283130	SOIL	APIEZON	195	9.7		J-14	UG/KG
4T4904	283130	SOIL	APIEZON	209	3.8	J	J-14	UG/KG
4T4904	283130	SOIL	APIEZON	33	3.9	BJ	U-7	UG/KG
4T4904	283130	SOIL	APIEZON	4	9.1	B	U-7	UG/KG
4T4904	283130	SOIL	APIEZON	8	5.0	U	UJ-14	UG/KG
4T4905	283131	SOIL	APIEZON	126	1.0	U	UJ-10	UG/KG
4T4905	283131	SOIL	APIEZON	128	4.4	B	U-7	UG/KG
4T4905	283131	SOIL	APIEZON	158	2.6	B	U-7	UG/KG
4T4905	283131	SOIL	APIEZON	18	5.5	B	U-7	UG/KG
4T4905	283131	SOIL	APIEZON	190	1.4		U-7	UG/KG
4T4905	283131	SOIL	APIEZON	195	1.5		J-14	UG/KG
4T4905	283131	SOIL	APIEZON	209	0.89	J	J-14	UG/KG

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SDG: 55845

Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
4T4905	283131	SOIL	APIEZON	4	1.9	B	U-7	UG/KG
4T4905	283131	SOIL	APIEZON	8	0.66	J	J-14	UG/KG
4T4926	283132	SOIL	APIEZON	126	1.5	U	UJ-10	UG/KG
4T4926	283132	SOIL	APIEZON	128	5.6	B	U-7	UG/KG
4T4926	283132	SOIL	APIEZON	158	4.2	B	U-7	UG/KG
4T4926	283132	SOIL	APIEZON	190	2.0		U-7	UG/KG
4T4926	283132	SOIL	APIEZON	195	1.7		J-14	UG/KG
4T4926	283132	SOIL	APIEZON	209	1.4	J	J-14	UG/KG
4T4926	283132	SOIL	APIEZON	33	2.9	B	U-7	UG/KG
4T4926	283132	SOIL	APIEZON	8	2.1		J-14	UG/KG
4T4927	283133	SOIL	APIEZON	126	2.5	U	UJ-10	UG/KG
4T4927	283133	SOIL	APIEZON	128	12	B	U-7	UG/KG
4T4927	283133	SOIL	APIEZON	158	9.9	B	U-7	UG/KG
4T4927	283133	SOIL	APIEZON	190	4.5		U-7	UG/KG
4T4927	283133	SOIL	APIEZON	195	3.7		J-14	UG/KG
4T4927	283133	SOIL	APIEZON	209	3.1		J-14	UG/KG
4T4927	283133	SOIL	APIEZON	33	2.8	B	U-7	UG/KG
4T4927	283133	SOIL	APIEZON	8	1.5	J	J-14	UG/KG
4T4928	283134	SOIL	APIEZON	126	1.5	U	UJ-10	UG/KG
4T4928	283134	SOIL	APIEZON	128	4.8	B	U-7	UG/KG
4T4928	283134	SOIL	APIEZON	158	3.6	B	U-7	UG/KG
4T4928	283134	SOIL	APIEZON	190	1.8		U-7	UG/KG
4T4928	283134	SOIL	APIEZON	195	1.6		J-14	UG/KG
4T4928	283134	SOIL	APIEZON	209	1.1	J	J-14	UG/KG
4T4928	283134	SOIL	APIEZON	33	3.4	B	U-7	UG/KG
4T4928	283134	SOIL	APIEZON	8	2.4		J-14	UG/KG
4T4929	283135	SOIL	APIEZON	126	2.0	U	UJ-10	UG/KG
4T4929	283135	SOIL	APIEZON	128	9.0	B	U-7	UG/KG
4T4929	283135	SOIL	APIEZON	158	5.6	B	U-7	UG/KG
4T4929	283135	SOIL	APIEZON	190	3.3		U-7	UG/KG
4T4929	283135	SOIL	APIEZON	195	3.0		J-14	UG/KG
4T4929	283135	SOIL	APIEZON	209	2.9		J-14	UG/KG
4T4929	283135	SOIL	APIEZON	33	1.5	BJ	U-7	UG/KG
4T4929	283135	SOIL	APIEZON	8	2.0	U	UJ-14	UG/KG
131541	283137	SOIL	APIEZON	126	4.0	U	UJ-10	UG/KG
131541	283137	SOIL	APIEZON	128	30		U-7	UG/KG
131541	283137	SOIL	APIEZON	158	19		U-7	UG/KG
131541	283137	SOIL	APIEZON	190	7.2		U-7	UG/KG
131541	283137	SOIL	APIEZON	195	6.2		J-14	UG/KG
131541	283137	SOIL	APIEZON	209	4.2		J-14	UG/KG

DATA QUALIFIER SUMMARY TABLE

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Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
131541	283137	SOIL	APIEZON	33	14		U-7	UG/KG
131541	283137	SOIL	APIEZON	8	17		J-14	UG/KG
131542	283138	SOIL	APIEZON	126	5.0	U	UJ-10	UG/KG
131542	283138	SOIL	APIEZON	158	27		U-7	UG/KG
131542	283138	SOIL	APIEZON	190	16		U-7	UG/KG
131542	283138	SOIL	APIEZON	195	16		J-14	UG/KG
131542	283138	SOIL	APIEZON	209	18		J-14	UG/KG
131542	283138	SOIL	APIEZON	33	7.8		U-7	UG/KG
131542	283138	SOIL	APIEZON	8	20		J-14	UG/KG
131543	283139	SOIL	APIEZON	126	5.0	U	UJ-10	UG/KG
131543	283139	SOIL	APIEZON	190	22		U-7	UG/KG
131543	283139	SOIL	APIEZON	195	19		J-14	UG/KG
131543	283139	SOIL	APIEZON	209	15		J-14	UG/KG
131543	283139	SOIL	APIEZON	33	7.3		U-7	UG/KG
131543	283139	SOIL	APIEZON	8	18		J-14	UG/KG
131544	283140	SOIL	APIEZON	126	4.0	U	UJ-10	UG/KG
131544	283140	SOIL	APIEZON	128	22		U-7	UG/KG
131544	283140	SOIL	APIEZON	158	11		U-7	UG/KG
131544	283140	SOIL	APIEZON	190	4.8		U-7	UG/KG
131544	283140	SOIL	APIEZON	195	4.3		J-14	UG/KG
131544	283140	SOIL	APIEZON	209	3.2	J	J-14	UG/KG
131544	283140	SOIL	APIEZON	33	8.4		U-7	UG/KG
131544	283140	SOIL	APIEZON	8	21		J-14	UG/KG
131545	283141	SOIL	APIEZON	126	5.0	U	UJ-10	UG/KG
131545	283141	SOIL	APIEZON	128	46		U-7	UG/KG
131545	283141	SOIL	APIEZON	158	21		U-7	UG/KG
131545	283141	SOIL	APIEZON	190	12		U-7	UG/KG
131545	283141	SOIL	APIEZON	195	11		J-14	UG/KG
131545	283141	SOIL	APIEZON	209	12		J-14	UG/KG
131545	283141	SOIL	APIEZON	33	7.3		U-7	UG/KG
131545	283141	SOIL	APIEZON	8	22		J-14	UG/KG
131546	283142	SOIL	APIEZON	126	2.0	U	UJ-10	UG/KG
131546	283142	SOIL	APIEZON	190	5.1		U-7	UG/KG
131546	283142	SOIL	APIEZON	195	4.0		J-14	UG/KG
131546	283142	SOIL	APIEZON	209	3.8		J-14	UG/KG
131546	283142	SOIL	APIEZON	33	4.8		U-7	UG/KG
131546	283142	SOIL	APIEZON	8	7.4		J-14	UG/KG
131547	283143	SOIL	APIEZON	126	2.5	U	UJ-10	UG/KG
131547	283143	SOIL	APIEZON	128	19		U-7	UG/KG
131547	283143	SOIL	APIEZON	158	12		U-7	UG/KG

DATA QUALIFIER SUMMARY TABLE

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SDG: 55845

Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
131547	283143	SOIL	APIEZON	18	16		U-7	UG/KG
131547	283143	SOIL	APIEZON	190	5.4		U-7	UG/KG
131547	283143	SOIL	APIEZON	195	4.1		J-14	UG/KG
131547	283143	SOIL	APIEZON	209	2.4	J	J-14	UG/KG
131547	283143	SOIL	APIEZON	33	3.5		U-7	UG/KG
131547	283143	SOIL	APIEZON	8	4.6		J-14	UG/KG
131548	283144	SOIL	APIEZON	126	0.44	J	J-10	UG/KG
131548	283144	SOIL	APIEZON	165	0.61	B	U-7	UG/KG
131548	283144	SOIL	APIEZON	195	8.8		J-14	UG/KG
131548	283144	SOIL	APIEZON	209	6.3		J-14	UG/KG
131548	283144	SOIL	APIEZON	8	20		J-14	UG/KG
131548DL	283144D1	SOIL	APIEZON	126	7.5	U	UJ-10	UG/KG
131548DL	283144D1	SOIL	APIEZON	128	64	D	U-7	UG/KG
131548DL	283144D1	SOIL	APIEZON	158	34	D	U-7	UG/KG
131548DL	283144D1	SOIL	APIEZON	190	13	D	U-7	UG/KG
131548DL	283144D1	SOIL	APIEZON	195	9.0	D	J-14	UG/KG
131548DL	283144D1	SOIL	APIEZON	209	7.2	DJ	J-14	UG/KG
131548DL	283144D1	SOIL	APIEZON	33	23	D	U-7	UG/KG
131548DL	283144D1	SOIL	APIEZON	8	21	D	J-14	UG/KG
131549	283145	SOIL	APIEZON	126	2.5	U	UJ-10	UG/KG
131549	283145	SOIL	APIEZON	128	22		U-7	UG/KG
131549	283145	SOIL	APIEZON	158	12		U-7	UG/KG
131549	283145	SOIL	APIEZON	190	4.2		U-7	UG/KG
131549	283145	SOIL	APIEZON	195	4.3		J-14	UG/KG
131549	283145	SOIL	APIEZON	209	4.3		J-14	UG/KG
131549	283145	SOIL	APIEZON	33	8.8		U-7	UG/KG
131549	283145	SOIL	APIEZON	8	10		J-14	UG/KG
139351	283146	SOIL	APIEZON	126	0.64		J-10	UG/KG
139351	283146	SOIL	APIEZON	165	1.6	B	U-7	UG/KG
139351	283146	SOIL	APIEZON	195	5.9		J-14	UG/KG
139351	283146	SOIL	APIEZON	209	1.7		J-14	UG/KG
139351	283146	SOIL	APIEZON	8	17		J-14	UG/KG
139351DL	283146D1	SOIL	APIEZON	126	7.5	U	UJ-10	UG/KG
139351DL	283146D1	SOIL	APIEZON	128	57	D	U-7	UG/KG
139351DL	283146D1	SOIL	APIEZON	158	29	D	U-7	UG/KG
139351DL	283146D1	SOIL	APIEZON	190	8.1	D	U-7	UG/KG
139351DL	283146D1	SOIL	APIEZON	195	6.5	DJ	J-14	UG/KG
139351DL	283146D1	SOIL	APIEZON	33	11	D	U-7	UG/KG
139351DL	283146D1	SOIL	APIEZON	8	18	D	J-14	UG/KG
4T4901	283127	SOIL	RTX-5	105+168	77		J-10	UG/KG

DATA QUALIFIER SUMMARY TABLE

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SDG: 55845

Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
4T4901	283127	SOIL	RTX-5	118	160		J-10	UG/KG
4T4901	283127	SOIL	RTX-5	126+129+178	16	B	J-10	UG/KG
4T4901	283127	SOIL	RTX-5	128	25	B	U-7	UG/KG
4T4901	283127	SOIL	RTX-5	138	170		J-14	UG/KG
4T4901	283127	SOIL	RTX-5	5+8	4.0	U	UJ-14	UG/KG
4T4901	283127	SOIL	RTX-5	66+95	260		J-10	UG/KG
4T4901	283127	SOIL	RTX-5	72	7.7	B	U-7	UG/KG
4T4901	283127	SOIL	RTX-5	77+110	230		J-10	UG/KG
4T4902	283128	SOIL	RTX-5	105+168	16		J-10	UG/KG
4T4902	283128	SOIL	RTX-5	118	30		J-10	UG/KG
4T4902	283128	SOIL	RTX-5	126+129+178	3.4	B	J-10	UG/KG
4T4902	283128	SOIL	RTX-5	128	5.6	B	U-7	UG/KG
4T4902	283128	SOIL	RTX-5	138	37		J-14	UG/KG
4T4902	283128	SOIL	RTX-5	3	5.5	B	U-7	UG/KG
4T4902	283128	SOIL	RTX-5	5+8	1.0	U	UJ-14	UG/KG
4T4902	283128	SOIL	RTX-5	66+95	54		J-10	UG/KG
4T4902	283128	SOIL	RTX-5	72	2.5	B	U-7	UG/KG
4T4902	283128	SOIL	RTX-5	77+110	48		J-10	UG/KG
4T4903	283129	SOIL	RTX-5	105+168	42		J-10	UG/KG
4T4903	283129	SOIL	RTX-5	118	88		J-10	UG/KG
4T4903	283129	SOIL	RTX-5	126+129+178	11	B	J-10	UG/KG
4T4903	283129	SOIL	RTX-5	138	110		J-14	UG/KG
4T4903	283129	SOIL	RTX-5	157+200	3.0		U-7	UG/KG
4T4903	283129	SOIL	RTX-5	26	1.8	B	U-7	UG/KG
4T4903	283129	SOIL	RTX-5	3	7.1	JB	U-7	UG/KG
4T4903	283129	SOIL	RTX-5	5+8	1.5	U	UJ-14	UG/KG
4T4903	283129	SOIL	RTX-5	66+95	98		J-10	UG/KG
4T4903	283129	SOIL	RTX-5	72	3.1	B	U-7	UG/KG
4T4903	283129	SOIL	RTX-5	77+110	110		J-10	UG/KG
4T4904	283130	SOIL	RTX-5	105+168	150		J-10	UG/KG
4T4904	283130	SOIL	RTX-5	118	340		J-10	UG/KG
4T4904	283130	SOIL	RTX-5	126+129+178	35	B	J-10	UG/KG
4T4904	283130	SOIL	RTX-5	138	420		J-14	UG/KG
4T4904	283130	SOIL	RTX-5	5+8	5.0	U	UJ-14	UG/KG
4T4904	283130	SOIL	RTX-5	66+95	480		J-10	UG/KG
4T4904	283130	SOIL	RTX-5	72	16	B	U-7	UG/KG
4T4904	283130	SOIL	RTX-5	77+110	460		J-10	UG/KG
4T4905	283131	SOIL	RTX-5	105+168	14		J-10	UG/KG
4T4905	283131	SOIL	RTX-5	118	20		J-10	UG/KG
4T4905	283131	SOIL	RTX-5	126+129+178	3.2	B	UJ-7,10	UG/KG

DATA QUALIFIER SUMMARY TABLE

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Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
4T4905	283131	SOIL	RTX-5	128	4.9	B	U-7	UG/KG
4T4905	283131	SOIL	RTX-5	138	29		J-14	UG/KG
4T4905	283131	SOIL	RTX-5	3	4.6	JB	U-7	UG/KG
4T4905	283131	SOIL	RTX-5	5+8	1.0	U	UJ-14	UG/KG
4T4905	283131	SOIL	RTX-5	66+95	37		J-10	UG/KG
4T4905	283131	SOIL	RTX-5	72	1.1	B	U-7	UG/KG
4T4905	283131	SOIL	RTX-5	77+110	35		J-10	UG/KG
4T4926	283132	SOIL	RTX-5	105+168	22		J-10	UG/KG
4T4926	283132	SOIL	RTX-5	118	50		J-10	UG/KG
4T4926	283132	SOIL	RTX-5	126+129+178	3.8	B	UJ-7,10	UG/KG
4T4926	283132	SOIL	RTX-5	128	5.8	B	U-7	UG/KG
4T4926	283132	SOIL	RTX-5	138	52		J-14	UG/KG
4T4926	283132	SOIL	RTX-5	5+8	1.4	JB	UJ-7,14	UG/KG
4T4926	283132	SOIL	RTX-5	66+95	89		J-10	UG/KG
4T4926	283132	SOIL	RTX-5	72	2.4	B	U-7	UG/KG
4T4926	283132	SOIL	RTX-5	77+110	72		J-10	UG/KG
4T4927	283133	SOIL	RTX-5	105+168	45		J-10	UG/KG
4T4927	283133	SOIL	RTX-5	118	91		J-10	UG/KG
4T4927	283133	SOIL	RTX-5	126+129+178	12	B	J-10	UG/KG
4T4927	283133	SOIL	RTX-5	128	13	B	U-7	UG/KG
4T4927	283133	SOIL	RTX-5	138	120		J-14	UG/KG
4T4927	283133	SOIL	RTX-5	5+8	2.5	U	UJ-14	UG/KG
4T4927	283133	SOIL	RTX-5	66+95	170		J-10	UG/KG
4T4927	283133	SOIL	RTX-5	72	5.7	B	U-7	UG/KG
4T4927	283133	SOIL	RTX-5	77+110	160		J-10	UG/KG
4T4928	283134	SOIL	RTX-5	105+168	19		J-10	UG/KG
4T4928	283134	SOIL	RTX-5	118	38		J-10	UG/KG
4T4928	283134	SOIL	RTX-5	126+129+178	4.0	B	UJ-7,10	UG/KG
4T4928	283134	SOIL	RTX-5	128	5.3	B	U-7	UG/KG
4T4928	283134	SOIL	RTX-5	138	45		J-14	UG/KG
4T4928	283134	SOIL	RTX-5	5+8	1.1	JB	UJ-7,14	UG/KG
4T4928	283134	SOIL	RTX-5	66+95	76		J-10	UG/KG
4T4928	283134	SOIL	RTX-5	72	1.8	B	U-7	UG/KG
4T4928	283134	SOIL	RTX-5	77+110	66		J-10	UG/KG
4T4929	283135	SOIL	RTX-5	105+168	30		J-10	UG/KG
4T4929	283135	SOIL	RTX-5	118	60		J-10	UG/KG
4T4929	283135	SOIL	RTX-5	126+129+178	7.3	B	J-10	UG/KG
4T4929	283135	SOIL	RTX-5	128	9.5	B	U-7	UG/KG
4T4929	283135	SOIL	RTX-5	138	77		J-14	UG/KG
4T4929	283135	SOIL	RTX-5	5+8	2.0	U	UJ-14	UG/KG

DATA QUALIFIER SUMMARY TABLE

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SDG: 55845

Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
4T4929	283135	SOIL	RTX-5	66+95	120		J-10	UG/KG
4T4929	283135	SOIL	RTX-5	72	3.1	B	U-7	UG/KG
4T4929	283135	SOIL	RTX-5	77+110	100		J-10	UG/KG
131541	283137	SOIL	RTX-5	105+168	100		J-10	UG/KG
131541	283137	SOIL	RTX-5	118	200		J-10	UG/KG
131541	283137	SOIL	RTX-5	126+129+178	19		J-10	UG/KG
131541	283137	SOIL	RTX-5	138	220		J-14	UG/KG
131541	283137	SOIL	RTX-5	157+200	5.3		U-7	UG/KG
131541	283137	SOIL	RTX-5	3	13	JB	U-7	UG/KG
131541	283137	SOIL	RTX-5	5+8	15		J-14	UG/KG
131541	283137	SOIL	RTX-5	66+95	290		J-10	UG/KG
131541	283137	SOIL	RTX-5	72	7.4		U-7	UG/KG
131541	283137	SOIL	RTX-5	77+110	270		J-10	UG/KG
131542	283138	SOIL	RTX-5	105+168	110		J-10	UG/KG
131542	283138	SOIL	RTX-5	118	200		J-10	UG/KG
131542	283138	SOIL	RTX-5	126+129+178	43		J-10	UG/KG
131542	283138	SOIL	RTX-5	138	420		J-14	UG/KG
131542	283138	SOIL	RTX-5	157+200	15		U-7	UG/KG
131542	283138	SOIL	RTX-5	198	2.7	J	U-7	UG/KG
131542	283138	SOIL	RTX-5	5+8	17		UJ-7,14	UG/KG
131542	283138	SOIL	RTX-5	66+95	380		J-10	UG/K
131542	283138	SOIL	RTX-5	72	8.5		U-7	UG/KG
131542	283138	SOIL	RTX-5	77+110	420		J-10	UG/KG
131543	283139	SOIL	RTX-5	105+168	150		J-10	UG/KG
131543	283139	SOIL	RTX-5	118	290		J-10	UG/KG
131543	283139	SOIL	RTX-5	126+129+178	58		J-10	UG/KG
131543	283139	SOIL	RTX-5	138	620	E	J-14	UG/KG
131543	283139	SOIL	RTX-5	198	3.2	J	U-7	UG/KG
131543	283139	SOIL	RTX-5	5+8	15		UJ-7,14	UG/KG
131543	283139	SOIL	RTX-5	66+95	480		J-10	UG/KG
131543	283139	SOIL	RTX-5	72	15		U-7	UG/KG
131543	283139	SOIL	RTX-5	77+110	610		J-10	UG/KG
131544	283140	SOIL	RTX-5	105+168	50		J-10	UG/KG
131544	283140	SOIL	RTX-5	118	130		J-10	UG/KG
131544	283140	SOIL	RTX-5	126+129+178	9.3		UJ-7,10	UG/KG
131544	283140	SOIL	RTX-5	128	24		U-7	UG/KG
131544	283140	SOIL	RTX-5	138	140		J-14	UG/KG
131544	283140	SOIL	RTX-5	157+200	2.9	J	U-7	UG/KG
131544	283140	SOIL	RTX-5	3	28	B	U-7	UG/KG
131544	283140	SOIL	RTX-5	5+8	21		J-14	UG/KG

DATA QUALIFIER SUMMARY TABLE

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SDG: 55845

Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
131544	283140	SOIL	RTX-5	66+95	200		J-10	UG/KG
131544	283140	SOIL	RTX-5	72	6.0		U-7	UG/KG
131544	283140	SOIL	RTX-5	77+110	180		J-10	UG/KG
131545	283141	SOIL	RTX-5	105+168	91		J-10	UG/KG
131545	283141	SOIL	RTX-5	118	190		J-10	UG/KG
131545	283141	SOIL	RTX-5	126+129+178	29		J-10	UG/KG
131545	283141	SOIL	RTX-5	138	310		J-14	UG/KG
131545	283141	SOIL	RTX-5	157+200	10		U-7	UG/KG
131545	283141	SOIL	RTX-5	5+8	19		J-14	UG/KG
131545	283141	SOIL	RTX-5	66+95	320		J-10	UG/KG
131545	283141	SOIL	RTX-5	72	6.6		U-7	UG/KG
131545	283141	SOIL	RTX-5	77+110	340		J-10	UG/KG
131546	283142	SOIL	RTX-5	105+168	62		J-10	UG/KG
131546	283142	SOIL	RTX-5	118	130		J-10	UG/KG
131546	283142	SOIL	RTX-5	126+129+178	14		J-10	UG/KG
131546	283142	SOIL	RTX-5	138	150		J-14	UG/KG
131546	283142	SOIL	RTX-5	157+200	2.7		U-7	UG/KG
131546	283142	SOIL	RTX-5	3	7.4	JB	U-7	UG/KG
131546	283142	SOIL	RTX-5	5+8	6.5		UJ-7,14	UG/KG
131546	283142	SOIL	RTX-5	66+95	160		J-10	UG/KG
131546	283142	SOIL	RTX-5	72	3.9		U-7	UG/KG
131546	283142	SOIL	RTX-5	77+110	140		J-10	UG/KG
131547	283143	SOIL	RTX-5	105+168	68		J-10	UG/KG
131547	283143	SOIL	RTX-5	118	130		J-10	UG/KG
131547	283143	SOIL	RTX-5	126+129+178	14		J-10	UG/KG
131547	283143	SOIL	RTX-5	138	140		J-14	UG/KG
131547	283143	SOIL	RTX-5	157+200	3.5		U-7	UG/KG
131547	283143	SOIL	RTX-5	5+8	2.9		UJ-7,14	UG/KG
131547	283143	SOIL	RTX-5	66+95	180		J-10	UG/KG
131547	283143	SOIL	RTX-5	72	3.9		U-7	UG/KG
131547	283143	SOIL	RTX-5	77+110	160		J-10	UG/KG
131548	283144	SOIL	RTX-5	105+168	210	E	J-10	UG/KG
131548	283144	SOIL	RTX-5	118	460	E	J-10	UG/KG
131548	283144	SOIL	RTX-5	126+129+178	35		J-10	UG/KG
131548	283144	SOIL	RTX-5	138	390	E	J-14	UG/KG
131548	283144	SOIL	RTX-5	165	0.48	JB	U-7	UG/KG
131548	283144	SOIL	RTX-5	198	1.6		U-7	UG/KG
131548	283144	SOIL	RTX-5	3	2.2	JB	U-7	UG/KG
131548	283144	SOIL	RTX-5	5+8	17		J-14	UG/KG
131548	283144	SOIL	RTX-5	66+95	630	E	J-10	UG/KG

DATA QUALIFIER SUMMARY TABLE

6311-43

SDG: 55845

Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
131548	283144	SOIL	RTX-5	77+110	520	E	J-10	UG/KG
131548DL	283144D1	SOIL	RTX-5	105+168	200	D	J-10	UG/KG
131548DL	283144D1	SOIL	RTX-5	118	390	D	J-10	UG/KG
131548DL	283144D1	SOIL	RTX-5	126+129+178	33	D	J-10	UG/KG
131548DL	283144D1	SOIL	RTX-5	138	400	D	J-14	UG/KG
131548DL	283144D1	SOIL	RTX-5	157+200	5.8	DJ	U-7	UG/KG
131548DL	283144D1	SOIL	RTX-5	5+8	16	D	UJ-7,14	UG/KG
131548DL	283144D1	SOIL	RTX-5	66+95	620	D	J-10	UG/KG
131548DL	283144D1	SOIL	RTX-5	72	14	D	U-7	UG/KG
131548DL	283144D1	SOIL	RTX-5	77+110	490	D	J-10	UG/KG
131549	283145	SOIL	RTX-5	105+168	62		J-10	UG/KG
131549	283145	SOIL	RTX-5	118	120		J-10	UG/KG
131549	283145	SOIL	RTX-5	126+129+178	11		J-10	UG/KG
131549	283145	SOIL	RTX-5	138	140		J-14	UG/KG
131549	283145	SOIL	RTX-5	157+200	2.4	J	U-7	UG/KG
131549	283145	SOIL	RTX-5	5+8	8.4		UJ-7,14	UG/KG
131549	283145	SOIL	RTX-5	66+95	210		J-10	UG/KG
131549	283145	SOIL	RTX-5	72	5.8		U-7	UG/KG
131549	283145	SOIL	RTX-5	77+110	180		J-10	UG/KG
139351	283146	SOIL	RTX-5	105+168	280	E	J-10	UG/KG
139351	283146	SOIL	RTX-5	118	540	E	J-10	UG/KG
139351	283146	SOIL	RTX-5	126+129+178	30		J-10	UG/KG
139351	283146	SOIL	RTX-5	138	350	E	J-14	UG/KG
139351	283146	SOIL	RTX-5	165	0.84	B	U-7	UG/KG
139351	283146	SOIL	RTX-5	198	0.96		U-7	UG/KG
139351	283146	SOIL	RTX-5	3	7.0	B	U-7	UG/KG
139351	283146	SOIL	RTX-5	5+8	15		J-14	UG/KG
139351	283146	SOIL	RTX-5	66+95	690	E	J-10	UG/KG
139351	283146	SOIL	RTX-5	77+110	550	E	J-10	UG/KG
139351DL	283146D1	SOIL	RTX-5	105+168	250	D	J-10	UG/KG
139351DL	283146D1	SOIL	RTX-5	118	490	D	J-10	UG/KG
139351DL	283146D1	SOIL	RTX-5	126+129+178	28	D	J-10	UG/KG
139351DL	283146D1	SOIL	RTX-5	138	330	D	J-14	UG/KG
139351DL	283146D1	SOIL	RTX-5	157+200	5.7	DJ	U-7	UG/KG
139351DL	283146D1	SOIL	RTX-5	5+8	13	D	UJ-7,14	UG/KG
139351DL	283146D1	SOIL	RTX-5	66+95	860	D	J-10	UG/KG
139351DL	283146D1	SOIL	RTX-5	72	22	D	U-7	UG/KG
139351DL	283146D1	SOIL	RTX-5	77+110	530	D	J-10	UG/KG

DATA QUALIFIER SUMMARY TABLE

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SDG: 55939

Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
139440	284070	SOIL	APIEZON	195	4.2		J-14	UG/KG
139440	284070	SOIL	APIEZON	209	1.3	J	J-10	UG/KG
139440DL	284070D1	SOIL	APIEZON	190	7.6	DJ	U-7	UG/KG
139352	284071	SOIL	APIEZON	190	2.2	J	U-7	UG/KG
139353	284072	SOIL	APIEZON	195	2.7		J-14	UG/KG
139353	284072	SOIL	APIEZON	209	0.80	J	J-10	UG/KG
139353DL	284072D1	SOIL	APIEZON	190	5.1	DJ	U-7	UG/KG
139354	284073	SOIL	APIEZON	195	2.6		J-14	UG/KG
139354	284073	SOIL	APIEZON	209	0.79	J	J-10	UG/KG
139354DL	284073D1	SOIL	APIEZON	4	54	DB	U-7	UG/KG
139355	284074	SOIL	APIEZON	190	1.8	J	U-7	UG/KG
139439	284075	SOIL	APIEZON	195	4.9		J-14	UG/KG
139439	284075	SOIL	APIEZON	209	1.4	J	J-10	UG/KG
139441	284076	SOIL	APIEZON	195	2.5		J-14	UG/KG
139441	284076	SOIL	APIEZON	209	0.96	J	J-10	UG/KG
139442	284077	SOIL	APIEZON	195	9.1		J-14	UG/KG
139442	284077	SOIL	APIEZON	209	2.5		J-10	UG/KG
139443	284078	SOIL	APIEZON	165	8.7		U-7	UG/KG
139443	284078	SOIL	APIEZON	195	14		J-14	UG/KG
139443	284078	SOIL	APIEZON	209	2.2	J	J-10	UG/KG
139444	284079	SOIL	APIEZON	165	4.8		U-7	UG/KG
139444	284079	SOIL	APIEZON	195	4.8		J-14	UG/KG
HP3557	284080	SOIL	APIEZON	15	0.89	BJ	U-7	UG/KG
HP3557	284080	SOIL	APIEZON	190	1.6		U-7	UG/KG
HP3557	284080	SOIL	APIEZON	195	0.90	J	J-14	UG/KG
HP3557	284080	SOIL	APIEZON	209	0.80	J	J-10	UG/KG
HP3557	284080	SOIL	APIEZON	4	2.5	B	U-7	UG/KG
HP3559	284081	SOIL	APIEZON	15	0.66	JB	U-7	UG/KG
HP3559	284081	SOIL	APIEZON	190	1.4		U-7	UG/KG
HP3559	284081	SOIL	APIEZON	195	0.80	J	J-14	UG/KG
HP3559	284081	SOIL	APIEZON	209	0.76	J	J-10	UG/KG
HP3559	284081	SOIL	APIEZON	4	2.4	B	U-7	UG/KG
HP3568	284082	SOIL	APIEZON	190	1.2		U-7	UG/KG
HP3568	284082	SOIL	APIEZON	195	1.0		J-14	UG/KG
HP3568	284082	SOIL	APIEZON	209	1.4		J-10	UG/KG
HP3568	284082	SOIL	APIEZON	4	1.3	B	U-7	UG/KG
HP3569	284083	SOIL	APIEZON	15	0.68	B	U-7	UG/KG
HP3569	284083	SOIL	APIEZON	190	1.1		U-7	UG/KG
HP3569	284083	SOIL	APIEZON	195	0.88		J-14	UG/KG
HP3569	284083	SOIL	APIEZON	209	0.91		J-10	UG/KG

DATA QUALIFIER SUMMARY TABLE

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SDG: 55939

Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
HP3569	284083	SOIL	APIEZON	4	1.4	B	U-7	UG/K
HP3570	284084	SOIL	APIEZON	15	0.35	JB	U-7	UG/KG
HP3570	284084	SOIL	APIEZON	190	1.2		U-7	UG/KG
HP3570	284084	SOIL	APIEZON	195	0.94		J-14	UG/KG
HP3570	284084	SOIL	APIEZON	209	1.2		J-10	UG/KG
HP3570	284084	SOIL	APIEZON	4	1.2	B	U-7	UG/KG
HP3571	284085	SOIL	APIEZON	190	1.1		U-7	UG/KG
HP3571	284085	SOIL	APIEZON	195	0.94		J-14	UG/KG
HP3571	284085	SOIL	APIEZON	209	1.1		J-10	UG/KG
HP3571	284085	SOIL	APIEZON	4	0.91	B	U-7	UG/KG
HP3572	284086	SOIL	APIEZON	15	0.26	JB	U-7	UG/KG
HP3572	284086	SOIL	APIEZON	195	0.75		J-14	UG/KG
HP3572	284086	SOIL	APIEZON	209	0.95		J-10	UG/KG
HP3572	284086	SOIL	APIEZON	4	0.98	B	U-7	UG/KG
3T2896	284087	SOIL	APIEZON	15	11	B	U-7	UG/KG
3T2897	284088	SOIL	APIEZON	15	0.89	JB	U-7	UG/KG
3T2897	284088	SOIL	APIEZON	195	0.59	J	J-14	UG/KG
3T2897	284088	SOIL	APIEZON	209	0.67	J	J-10	UG/KG
3T2899	284089	SOIL	APIEZON	15	2.1	B	U-7	UG/KG
139440	284070	SOIL	RTX-5	126+129+178	27		J-10	UG/KG
139440	284070	SOIL	RTX-5	198	0.90	J	U-7	UG/K
139440	284070	SOIL	RTX-5	3	11	B	U-7	UG/KG
139440	284070	SOIL	RTX-5	5+8	190		J-14	UG/KG
139440DL	284070D1	SOIL	RTX-5	119	27	DB	U-7	UG/KG
139440DL	284070D1	SOIL	RTX-5	126+129+178	15	D	J-10	UG/KG
139440DL	284070D1	SOIL	RTX-5	128	48	DB	U-7	UG/KG
139440DL	284070D1	SOIL	RTX-5	5+8	200	D	J-14	UG/KG
139352	284071	SOIL	RTX-5	119	7.4	B	U-7	UG/KG
139352	284071	SOIL	RTX-5	126+129+178	5.6		J-10	UG/KG
139352	284071	SOIL	RTX-5	5+8	12		J-14	UG/KG
139353	284072	SOIL	RTX-5	126+129+178	16		J-10	UG/KG
139353	284072	SOIL	RTX-5	3	4.5	JB	U-7	UG/KG
139353	284072	SOIL	RTX-5	5+8	18		J-14	UG/KG
139353DL	284072D1	SOIL	RTX-5	119	14	DB	U-7	UG/KG
139353DL	284072D1	SOIL	RTX-5	126+129+178	11	D	J-10	UG/KG
139353DL	284072D1	SOIL	RTX-5	5+8	16	D	J-14	UG/KG
139354	284073	SOIL	RTX-5	126+129+178	16		J-10	UG/KG
139354	284073	SOIL	RTX-5	3	4.6	JB	U-7	UG/KG
139354	284073	SOIL	RTX-5	5+8	11		J-14	UG/KG
139354DL	284073D1	SOIL	RTX-5	119	12	DB	U-7	UG/K

DATA QUALIFIER SUMMARY TABLE

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SDG: 55939

Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
139354DL	284073D1	SOIL	RTX-5	126+129+178	10	D	J-10	UG/KG
139354DL	284073D1	SOIL	RTX-5	5+8	5.2	DJ	J-14	UG/KG
139355	284074	SOIL	RTX-5	119	5.4	B	U-7	UG/KG
139355	284074	SOIL	RTX-5	126+129+178	5.3		J-10	UG/KG
139355	284074	SOIL	RTX-5	3	53	B	U-7	UG/KG
139355	284074	SOIL	RTX-5	5+8	2.7	J	J-14	UG/KG
139439	284075	SOIL	RTX-5	126+129+178	30		J-10	UG/KG
139439	284075	SOIL	RTX-5	3	23	B	U-7	UG/KG
139439	284075	SOIL	RTX-5	5+8	110		J-14	UG/KG
139439DL	284075D1	SOIL	RTX-5	119	25	DB	U-7	UG/KG
139439DL	284075D1	SOIL	RTX-5	126+129+178	21	D	J-10	UG/KG
139439DL	284075D1	SOIL	RTX-5	5+8	110	D	J-14	UG/KG
139441	284076	SOIL	RTX-5	126+129+178	14		J-10	UG/KG
139441	284076	SOIL	RTX-5	3	5.9	B	U-7	UG/KG
139441	284076	SOIL	RTX-5	5+8	77		J-14	UG/KG
139441DL	284076D1	SOIL	RTX-5	119	13	DB	U-7	UG/KG
139441DL	284076D1	SOIL	RTX-5	126+129+178	7.9	DJ	J-10	UG/KG
139441DL	284076D1	SOIL	RTX-5	128	25	DB	U-7	UG/KG
139441DL	284076D1	SOIL	RTX-5	5+8	85	D	J-14	UG/KG
139442	284077	SOIL	RTX-5	126+129+178	42		J-10	UG/KG
139442	284077	SOIL	RTX-5	3	7.9	JB	U-7	UG/KG
139442	284077	SOIL	RTX-5	5+8	120		J-14	UG/KG
139442DL	284077D1	SOIL	RTX-5	119	28	DB	U-7	UG/KG
139442DL	284077D1	SOIL	RTX-5	126+129+178	24	DJ	J-10	UG/KG
139442DL	284077D1	SOIL	RTX-5	128	71	DB	U-7	UG/KG
139442DL	284077D1	SOIL	RTX-5	5+8	120	D	J-14	UG/KG
139443	284078	SOIL	RTX-5	126+129+178	89		J-10	UG/KG
139443	284078	SOIL	RTX-5	3	32	B	U-7	UG/KG
139443	284078	SOIL	RTX-5	5+8	200		J-14	UG/KG
139443DL	284078D1	SOIL	RTX-5	119	57	D	U-7	UG/KG
139443DL	284078D1	SOIL	RTX-5	126+129+178	53	D	J-10	UG/KG
139443DL	284078D1	SOIL	RTX-5	128	120	D	U-7	UG/KG
139443DL	284078D1	SOIL	RTX-5	5+8	190	D	J-14	UG/KG
139444	284079	SOIL	RTX-5	126+129+178	37		J-10	UG/KG
139444	284079	SOIL	RTX-5	157+200	9.0		U-7	UG/KG
139444	284079	SOIL	RTX-5	5+8	230		J-14	UG/KG
139444DL	284079D1	SOIL	RTX-5	119	33	DB	U-7	UG/KG
139444DL	284079D1	SOIL	RTX-5	126+129+178	18	DJ	J-10	UG/KG
139444DL	284079D1	SOIL	RTX-5	128	57	DB	U-7	UG/KG
139444DL	284079D1	SOIL	RTX-5	5+8	230	D	J-14	UG/KG

DATA QUALIFIER SUMMARY TABLE

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SDG: 55939

Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
HP3557	284080	SOIL	RTX-5	126+129+178	2.6		J-10	UG/KG
HP3557	284080	SOIL	RTX-5	3	7.9	B	U-7	UG/KG
HP3557	284080	SOIL	RTX-5	5+8	1.5	U	UJ-14	UG/KG
HP3559	284081	SOIL	RTX-5	126+129+178	2.5		J-10	UG/KG
HP3559	284081	SOIL	RTX-5	3	4.0	JB	U-7	UG/KG
HP3559	284081	SOIL	RTX-5	5+8	1.6		J-14	UG/KG
HP3568	284082	SOIL	RTX-5	126+129+178	1.7		J-10	UG/KG
HP3568	284082	SOIL	RTX-5	157+200	0.73	J	U-7	UG/KG
HP3568	284082	SOIL	RTX-5	3	3.2	JB	U-7	UG/KG
HP3568	284082	SOIL	RTX-5	5+8	1.4		J-14	UG/KG
HP3569	284083	SOIL	RTX-5	126+129+178	3.1		J-10	UG/KG
HP3569	284083	SOIL	RTX-5	157+200	1.1		U-7	UG/KG
HP3569	284083	SOIL	RTX-5	3	2.2	JB	U-7	UG/KG
HP3569	284083	SOIL	RTX-5	5+8	2.6		J-14	UG/KG
HP3570	284084	SOIL	RTX-5	126+129+178	2.3		J-10	UG/KG
HP3570	284084	SOIL	RTX-5	157+200	0.88		U-7	UG/KG
HP3570	284084	SOIL	RTX-5	3	3.4	B	U-7	UG/KG
HP3570	284084	SOIL	RTX-5	5+8	1.4		J-14	UG/KG
HP3571	284085	SOIL	RTX-5	126+129+178	1.8		J-10	UG/KG
HP3571	284085	SOIL	RTX-5	157+200	0.74		U-7	UG/KG
HP3571	284085	SOIL	RTX-5	3	13	B	U-7	UG/KG
HP3571	284085	SOIL	RTX-5	5+8	1.5		J-14	UG/KG
HP3572	284086	SOIL	RTX-5	126+129+178	1.4		J-10	UG/KG
HP3572	284086	SOIL	RTX-5	5+8	3.6		J-14	UG/KG
3T2896	284087	SOIL	RTX-5	126+129+178	2.8		J-10	UG/KG
3T2896	284087	SOIL	RTX-5	5+8	2.4	J	J-14	UG/KG
3T2897	284088	SOIL	RTX-5	126+129+178	2.6		J-10	UG/KG
3T2897	284088	SOIL	RTX-5	5+8	1.0	U	UJ-14	UG/KG
3T2899	284089	SOIL	RTX-5	126+129+178	2.3		J-10	UG/KG
3T2899	284089	SOIL	RTX-5	3	8.0	B	U-7	UG/KG
3T2899	284089	SOIL	RTX-5	5+8	1.9		J-14	UG/KG

DATA QUALIFIER SUMMARY TABLE

Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
HP3558	284131	SOIL	APIEZON	126	1.2	U	UJ-10	UG/KG
HP3558	284131	SOIL	APIEZON	4	1.8	B	U-7	UG/KG
HP3560	284132	SOIL	APIEZON	126	1.1	U	UJ-10	UG/KG
HP3560	284132	SOIL	APIEZON	4	1.8	B	U-7	UG/KG
HP3561	284133	SOIL	APIEZON	126	1.6	U	UJ-10	UG/KG
HP3561	284133	SOIL	APIEZON	4	2.8	B	U-7	UG/KG
3T2898	284134	SOIL	APIEZON	126	0.51	U	UJ-10	UG/KG
3T2898	284134	SOIL	APIEZON	165	0.33	JB	U-7	UG/KG
3T2900	284135	SOIL	APIEZON	126	1.0	U	UJ-10	UG/KG
HP3558	284131	SOIL	RTX-5	119	2.9	B	U-7	UG/KG
HP3558	284131	SOIL	RTX-5	126+129+178	2.2		J-10	UG/KG
HP3558	284131	SOIL	RTX-5	3	16	B	U-7	UG/KG
HP3558	284131	SOIL	RTX-5	77+110	52		J-10	UG/KG
HP3560	284132	SOIL	RTX-5	119	3.1	B	U-7	UG/KG
HP3560	284132	SOIL	RTX-5	126+129+178	2.3		J-10	UG/KG
HP3560	284132	SOIL	RTX-5	3	10	B	U-7	UG/KG
HP3560	284132	SOIL	RTX-5	77+110	56		J-10	UG/KG
HP3561	284133	SOIL	RTX-5	119	2.4	B	U-7	UG/KG
HP3561	284133	SOIL	RTX-5	126+129+178	1.3	J	J-10	UG/KG
HP3561	284133	SOIL	RTX-5	3	9.7	B	U-7	UG/KG
HP3561	284133	SOIL	RTX-5	77+110	45		J-10	UG/KG
3T2898	284134	SOIL	RTX-5	126+129+178	2.4		J-10	UG/KG
3T2898	284134	SOIL	RTX-5	3	4.2	B	U-7	UG/KG
3T2898	284134	SOIL	RTX-5	77+110	32		J-10	UG/KG
3T2900	284135	SOIL	RTX-5	126+129+178	2.1		J-10	UG/KG
3T2900	284135	SOIL	RTX-5	77+110	50		J-10	UG/KG

DATA QUALIFIER SUMMARY TABLE

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SDG: 57268

Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
127556	293907	SOIL	APIEZON	126	2.0	U	UJ-10	UG/K
127556	293907	SOIL	APIEZON	138+178	110		J-9	UG/KG
127556	293907	SOIL	APIEZON	165	1.2	JB	U-7	UG/KG
127556	293907	SOIL	APIEZON	195	1.8	J	J-14	UG/KG
127556	293907	SOIL	APIEZON	8	2.0	U	UJ-14	UG/KG
127556	293907	SOIL	APIEZON	84+91	22		J-9	UG/KG
127556	293907	SOIL	APIEZON	85+110	92		J-9	UG/KG
127565	293908	SOIL	APIEZON	126	2.5	U	UJ-10	UG/KG
127565	293908	SOIL	APIEZON	138+178	180		J-9	UG/KG
127565	293908	SOIL	APIEZON	195	1.6	J	J-14	UG/KG
127565	293908	SOIL	APIEZON	4	3.4	B	U-7	UG/KG
127565	293908	SOIL	APIEZON	8	2.5	U	UJ-14	UG/KG
127565	293908	SOIL	APIEZON	84+91	28		J-9	UG/KG
127565	293908	SOIL	APIEZON	85+110	130		J-9	UG/KG
127559	293909	SOIL	APIEZON	126	5.0	U	UJ-10	UG/KG
127559	293909	SOIL	APIEZON	138+178	180		J-9	UG/KG
127559	293909	SOIL	APIEZON	195	5.8		J-14	UG/KG
127559	293909	SOIL	APIEZON	4	9.5	B	U-7	UG/KG
127559	293909	SOIL	APIEZON	8	5.0	U	UJ-14	UG/KG
127559	293909	SOIL	APIEZON	84+91	42		J-9	UG/KG
127559	293909	SOIL	APIEZON	85+110	37		J-9	UG/KG
127581	293910	SOIL	APIEZON	126	2.5	U	UJ-10	UG/KG
127581	293910	SOIL	APIEZON	138+178	160		J-9	UG/KG
127581	293910	SOIL	APIEZON	195	2.3	J	J-14	UG/KG
127581	293910	SOIL	APIEZON	4	16	B	U-7	UG/KG
127581	293910	SOIL	APIEZON	8	2.5	U	UJ-14	UG/KG
127581	293910	SOIL	APIEZON	84+91	27		J-9	UG/KG
127581	293910	SOIL	APIEZON	85+110	130		J-9	UG/KG
127608	293911	SOIL	APIEZON	126	1.5	U	UJ-10	UG/KG
127608	293911	SOIL	APIEZON	138+178	55		J-9	UG/KG
127608	293911	SOIL	APIEZON	195	0.91	J	J-14	UG/KG
127608	293911	SOIL	APIEZON	4	8.9	B	U-7	UG/KG
127608	293911	SOIL	APIEZON	8	1.5	U	UJ-14	UG/KG
127608	293911	SOIL	APIEZON	84+91	13		J-9	UG/KG
127608	293911	SOIL	APIEZON	85+110	50		J-9	UG/KG
127618	293912	SOIL	APIEZON	126	2.5	U	UJ-10	UG/KG
127618	293912	SOIL	APIEZON	138+178	130		J-9	UG/KG
127618	293912	SOIL	APIEZON	195	2.1	J	J-14	UG/KG
127618	293912	SOIL	APIEZON	28	12	B	U-7	UG/KG
127618	293912	SOIL	APIEZON	4	5.0	B	U-7	UG/KG

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Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
127618	293912	SOIL	APIEZON	8	2.5	U	UJ-14	UG/KG
127618	293912	SOIL	APIEZON	84+91	19		J-9	UG/KG
127618	293912	SOIL	APIEZON	85+110	80		J-9	UG/KG
127660	293913	SOIL	APIEZON	126	5.0	U	UJ-10	UG/KG
127660	293913	SOIL	APIEZON	138+178	390		J-9	UG/KG
127660	293913	SOIL	APIEZON	195	8.4		J-14	UG/KG
127660	293913	SOIL	APIEZON	8	4.9	J	J-14	UG/KG
127660	293913	SOIL	APIEZON	84+91	100		J-9	UG/KG
127660	293913	SOIL	APIEZON	85+110	340		J-9	UG/KG
127662	293914	SOIL	APIEZON	126	4.5		J-10	UG/KG
127662	293914	SOIL	APIEZON	138+178	530	E	J-9	UG/KG
127662	293914	SOIL	APIEZON	165	1.5	B	U-7	UG/KG
127662	293914	SOIL	APIEZON	195	12		J-14	UG/KG
127662	293914	SOIL	APIEZON	8	2.8		J-14	UG/KG
127662	293914	SOIL	APIEZON	84+91	86		J-9	UG/KG
127662	293914	SOIL	APIEZON	85+110	340	E	J-9	UG/KG
127662DL	293914D1	SOIL	APIEZON	126	10	U	UJ-10	UG/KG
127662DL	293914D1	SOIL	APIEZON	138+178	480	D	J-9	UG/KG
127662DL	293914D1	SOIL	APIEZON	195	12	D	J-14	UG/KG
127662DL	293914D1	SOIL	APIEZON	8	10	U	UJ-14	UG/KG
127662DL	293914D1	SOIL	APIEZON	84+91	86	D	J-9	UG/KG
127662DL	293914D1	SOIL	APIEZON	85+110	340	D	J-9	UG/KG
127664	293915	SOIL	APIEZON	126	5.0	U	UJ-10	UG/KG
127664	293915	SOIL	APIEZON	138+178	270		J-9	UG/KG
127664	293915	SOIL	APIEZON	195	6.0		J-14	UG/KG
127664	293915	SOIL	APIEZON	8	6.0		J-14	UG/KG
127664	293915	SOIL	APIEZON	84+91	26		J-9	UG/KG
127664	293915	SOIL	APIEZON	85+110	150		J-9	UG/KG
127665	293916	SOIL	APIEZON	126	0.66	J	J-10	UG/KG
127665	293916	SOIL	APIEZON	138+178	480	E	J-9	UG/KG
127665	293916	SOIL	APIEZON	165	0.88	JB	U-7	UG/KG
127665	293916	SOIL	APIEZON	195	7.4		J-14	UG/KG
127665	293916	SOIL	APIEZON	8	8.2		J-14	UG/KG
127665	293916	SOIL	APIEZON	84+91	100		J-9	UG/KG
127665	293916	SOIL	APIEZON	85+110	350	E	J-9	UG/KG
127665DL	293916D1	SOIL	APIEZON	126	10	U	UJ-10	UG/KG
127665DL	293916D1	SOIL	APIEZON	138+178	460	D	J-9	UG/KG
127665DL	293916D1	SOIL	APIEZON	195	7.4	DJ	J-14	UG/KG
127665DL	293916D1	SOIL	APIEZON	8	7.3	DJ	J-14	UG/KG
127665DL	293916D1	SOIL	APIEZON	84+91	100	D	J-9	UG/KG

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Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
127665DL	293916D1	SOIL	APIEZON	85+110	370	D	J-9	UG/KG
127669	293917	SOIL	APIEZON	126	1.6		J-10	UG/KG
127669	293917	SOIL	APIEZON	138+178	780	E	J-9	UG/KG
127669	293917	SOIL	APIEZON	165	2.2	B	U-7	UG/KG
127669	293917	SOIL	APIEZON	195	13		J-14	UG/KG
127669	293917	SOIL	APIEZON	8	7.2		J-14	UG/KG
127669	293917	SOIL	APIEZON	84+91	160		J-9	UG/KG
127669	293917	SOIL	APIEZON	85+110	550	E	J-9	UG/KG
127669DL	293917D1	SOIL	APIEZON	126	10	U	UJ-10	UG/KG
127669DL	293917D1	SOIL	APIEZON	138+178	700	D	J-9	UG/KG
127669DL	293917D1	SOIL	APIEZON	195	14	D	J-14	UG/KG
127669DL	293917D1	SOIL	APIEZON	8	5.6	DJ	J-14	UG/KG
127669DL	293917D1	SOIL	APIEZON	84+91	160	D	J-9	UG/KG
127669DL	293917D1	SOIL	APIEZON	85+110	610	D	J-9	UG/KG
127708	293918	SOIL	APIEZON	126	2.5	U	UJ-10	UG/KG
127708	293918	SOIL	APIEZON	138+178	90		J-9	UG/KG
127708	293918	SOIL	APIEZON	195	1.6	J	J-14	UG/KG
127708	293918	SOIL	APIEZON	4	12	B	U-7	UG/KG
127708	293918	SOIL	APIEZON	8	2.5	U	UJ-14	UG/KG
127708	293918	SOIL	APIEZON	84+91	16		J-9	UG/KG
127708	293918	SOIL	APIEZON	85+110	66		J-9	UG/KG
127711	293919	SOIL	APIEZON	126	2.5	U	UJ-10	UG/KG
127711	293919	SOIL	APIEZON	138+178	81		J-9	UG/KG
127711	293919	SOIL	APIEZON	28	4.0	B	U-7	UG/KG
127711	293919	SOIL	APIEZON	4	12	B	U-7	UG/KG
127711	293919	SOIL	APIEZON	47+59	9.0		U-6	UG/KG
127711	293919	SOIL	APIEZON	8	2.5	U	UJ-14	UG/KG
127711	293919	SOIL	APIEZON	84+91	5.4		J-9	UG/KG
127711	293919	SOIL	APIEZON	85+110	36		J-9	UG/KG
127723	293920	SOIL	APIEZON	126	2.5	U	UJ-10	UG/KG
127723	293920	SOIL	APIEZON	138+178	110		J-9	UG/KG
127723	293920	SOIL	APIEZON	195	1.7	J	J-14	UG/KG
127723	293920	SOIL	APIEZON	8	2.5	U	UJ-14	UG/KG
127723	293920	SOIL	APIEZON	84+91	26		J-9	UG/KG
127723	293920	SOIL	APIEZON	85+110	95		J-9	UG/KG
127727	293921	SOIL	APIEZON	126	2.5	U	UJ-10	UG/KG
127727	293921	SOIL	APIEZON	138+178	32		J-9	UG/KG
127727	293921	SOIL	APIEZON	195	2.1	J	J-14	UG/KG
127727	293921	SOIL	APIEZON	8	2.5	U	UJ-14	UG/KG
127727	293921	SOIL	APIEZON	84+91	14		J-9	UG/KG

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Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
127727	293921	SOIL	APIEZON	85+110	17		J-9	UG/KG
127556	293907	SOIL	RTX-5	126+129+178	8.7		J-10	UG/KG
127556	293907	SOIL	RTX-5	156	7.5	B	U-7	UG/KG
127556	293907	SOIL	RTX-5	157+200	3.6		U-7	UG/KG
127556	293907	SOIL	RTX-5	206	3.9		U-7	UG/KG
127556	293907	SOIL	RTX-5	3	79	B	U-7	UG/KG
127556	293907	SOIL	RTX-5	5+8	2.7		J-14	UG/KG
127556	293907	SOIL	RTX-5	66+95	97		J-10	UG/KG
127556	293907	SOIL	RTX-5	77+110	98		J-10	UG/KG
127565	293908	SOIL	RTX-5	126+129+178	8.8		J-10	UG/KG
127565	293908	SOIL	RTX-5	156	12	B	U-7	UG/KG
127565	293908	SOIL	RTX-5	157+200	4.8		U-7	UG/KG
127565	293908	SOIL	RTX-5	206	3.6		U-7	UG/KG
127565	293908	SOIL	RTX-5	5+8	2.5	U	UJ-14	UG/KG
127565	293908	SOIL	RTX-5	66+95	110		J-10	UG/KG
127565	293908	SOIL	RTX-5	77+110	140		J-10	UG/KG
127559	293909	SOIL	RTX-5	105+168	78		U-6	UG/KG
127559	293909	SOIL	RTX-5	126+129+178	18		J-10	UG/KG
127559	293909	SOIL	RTX-5	156	20	B	U-7	UG/KG
127559	293909	SOIL	RTX-5	157+200	5.6		U-7	UG/KG
127559	293909	SOIL	RTX-5	206	10		U-7	UG/KG
127559	293909	SOIL	RTX-5	5+8	5.0	U	UJ-14	UG/KG
127559	293909	SOIL	RTX-5	66+95	160		J-10	UG/KG
127559	293909	SOIL	RTX-5	77+110	190		J-10	UG/KG
127581	293910	SOIL	RTX-5	126+129+178	11		J-10	UG/KG
127581	293910	SOIL	RTX-5	157+200	3.6		U-7	UG/KG
127581	293910	SOIL	RTX-5	206	4.6		U-7	UG/KG
127581	293910	SOIL	RTX-5	5+8	2.5	U	UJ-14	UG/KG
127581	293910	SOIL	RTX-5	66+95	100		J-10	UG/KG
127581	293910	SOIL	RTX-5	77+110	140		J-10	UG/KG
127608	293911	SOIL	RTX-5	105+168	21		U-6	UG/KG
127608	293911	SOIL	RTX-5	126+129+178	4.2		J-10	UG/KG
127608	293911	SOIL	RTX-5	156	3.0	B	U-7	UG/KG
127608	293911	SOIL	RTX-5	157+200	1.1	J	U-7	UG/KG
127608	293911	SOIL	RTX-5	206	1.8		U-7	UG/KG
127608	293911	SOIL	RTX-5	3	47	B	U-7	UG/KG
127608	293911	SOIL	RTX-5	5+8	1.7		J-14	UG/KG
127608	293911	SOIL	RTX-5	66+95	47		J-10	UG/KG
127608	293911	SOIL	RTX-5	77+110	58		J-10	UG/KG
127618	293912	SOIL	RTX-5	105+168	36		U-6	UG/KG

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Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
127618	293912	SOIL	RTX-5	126+129+178	10		J-10	UG/K
127618	293912	SOIL	RTX-5	156	7.0	B	U-7	UG/KG
127618	293912	SOIL	RTX-5	157+200	3.7		U-7	UG/KG
127618	293912	SOIL	RTX-5	206	4.5		U-7	UG/KG
127618	293912	SOIL	RTX-5	5+8	1.7	J	J-14	UG/KG
127618	293912	SOIL	RTX-5	66+95	71		J-10	UG/KG
127618	293912	SOIL	RTX-5	77+110	87		J-10	UG/KG
127660	293913	SOIL	RTX-5	126+129+178	33		J-10	UG/KG
127660	293913	SOIL	RTX-5	156	30	B	U-7	UG/KG
127660	293913	SOIL	RTX-5	157+200	10		U-7	UG/KG
127660	293913	SOIL	RTX-5	206	14		U-7	UG/KG
127660	293913	SOIL	RTX-5	5+8	3.0	J	J-14	UG/KG
127660	293913	SOIL	RTX-5	66+95	330		J-10	UG/KG
127660	293913	SOIL	RTX-5	77+110	340		J-10	UG/KG
127662	293914	SOIL	RTX-5	107	35		J-5B	UG/KG
127662	293914	SOIL	RTX-5	118	360	E	J-5B	UG/KG
127662	293914	SOIL	RTX-5	119	20		J-5B	UG/KG
127662	293914	SOIL	RTX-5	126+129+178	37		J-10	UG/KG
127662	293914	SOIL	RTX-5	158	38		J-5B	UG/KG
127662	293914	SOIL	RTX-5	174	26		J-5B	UG/K
127662	293914	SOIL	RTX-5	179	18		J-5B	UG/KL
127662	293914	SOIL	RTX-5	198	1.7		U-7	UG/KG
127662	293914	SOIL	RTX-5	201	39		J-5B	UG/KG
127662	293914	SOIL	RTX-5	3	5.0	U	UJ-5B	UG/KG
127662	293914	SOIL	RTX-5	5+8	2.7		J-14	UG/KG
127662	293914	SOIL	RTX-5	66+95	310	E	J-10	UG/KG
127662	293914	SOIL	RTX-5	70	140	E	J-5B	UG/KG
127662	293914	SOIL	RTX-5	77+110	380	E	J-10	UG/KG
127662DL	293914D1	SOIL	RTX-5	105+168	140	D	U-6	UG/KG
127662DL	293914D1	SOIL	RTX-5	126+129+178	39	D	J-10	UG/KG
127662DL	293914D1	SOIL	RTX-5	156	39	D	U-7	UG/KG
127662DL	293914D1	SOIL	RTX-5	157+200	13	D	U-6	UG/KG
127662DL	293914D1	SOIL	RTX-5	206	17	DB	U-7	UG/KG
127662DL	293914D1	SOIL	RTX-5	3	50	U	UJ-5B	UG/KG
127662DL	293914D1	SOIL	RTX-5	5+8	10	U	UJ-14	UG/KG
127662DL	293914D1	SOIL	RTX-5	66+95	310	D	J-10	UG/KG
127662DL	293914D1	SOIL	RTX-5	77+110	360	D	J-10	UG/KG
127664	293915	SOIL	RTX-5	105+168	63		U-6	UG/KG
127664	293915	SOIL	RTX-5	126+129+178	16		J-10	UG/KG
127664	293915	SOIL	RTX-5	156	21		U-7	UG/K

DATA QUALIFIER SUMMARY TABLE

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Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
127664	293915	SOIL	RTX-5	157+200	7.5		U-6	UG/KG
127664	293915	SOIL	RTX-5	206	11	B	U-7	UG/KG
127664	293915	SOIL	RTX-5	3	25	U	UJ-5B	UG/KG
127664	293915	SOIL	RTX-5	5+8	4.2	J	J-14	UG/KG
127664	293915	SOIL	RTX-5	66+95	100		J-10	UG/KG
127664	293915	SOIL	RTX-5	77+110	150		J-10	UG/KG
127665	293916	SOIL	RTX-5	107	43		J-5B	UG/KG
127665	293916	SOIL	RTX-5	118	300	E	J-5B	UG/KG
127665	293916	SOIL	RTX-5	119	14		J-5B	UG/KG
127665	293916	SOIL	RTX-5	126+129+178	28		J-10	UG/KG
127665	293916	SOIL	RTX-5	157+200	12		U-7	UG/KG
127665	293916	SOIL	RTX-5	158	28		J-5B	UG/KG
127665	293916	SOIL	RTX-5	174	22		J-5B	UG/KG
127665	293916	SOIL	RTX-5	179	13		J-5B	UG/KG
127665	293916	SOIL	RTX-5	198	1.3		U-7	UG/KG
127665	293916	SOIL	RTX-5	199	1.1		J-5B	UG/KG
127665	293916	SOIL	RTX-5	201	26		J-5B	UG/KG
127665	293916	SOIL	RTX-5	3	5.3	B	UJ-7,5B	UG/KG
127665	293916	SOIL	RTX-5	5+8	7.4		J-14	UG/KG
127665	293916	SOIL	RTX-5	66+95	320	E	J-10	UG/KG
127665	293916	SOIL	RTX-5	70	140	E	J-5B	UG/KG
127665	293916	SOIL	RTX-5	77+110	360	E	J-10	UG/KG
127665DL	293916D1	SOIL	RTX-5	105+168	81	D	U-6	UG/KG
127665DL	293916D1	SOIL	RTX-5	126+129+178	31	D	J-10	UG/KG
127665DL	293916D1	SOIL	RTX-5	156	32	D	U-7	UG/KG
127665DL	293916D1	SOIL	RTX-5	157+200	11	D	U-6	UG/KG
127665DL	293916D1	SOIL	RTX-5	206	12	DB	U-7	UG/KG
127665DL	293916D1	SOIL	RTX-5	3	50	U	UJ-5B	UG/KG
127665DL	293916D1	SOIL	RTX-5	5+8	10	U	UJ-14	UG/KG
127665DL	293916D1	SOIL	RTX-5	66+95	360	D	J-10	UG/KG
127665DL	293916D1	SOIL	RTX-5	77+110	400	D	J-10	UG/KG
127669	293917	SOIL	RTX-5	107	67		J-5B	UG/KG
127669	293917	SOIL	RTX-5	118	490	E	J-5B	UG/KG
127669	293917	SOIL	RTX-5	119	19		J-5B	UG/KG
127669	293917	SOIL	RTX-5	126+129+178	36		J-10	UG/KG
127669	293917	SOIL	RTX-5	158	35		J-5B	UG/KG
127669	293917	SOIL	RTX-5	174	25		J-5B	UG/KG
127669	293917	SOIL	RTX-5	179	16		J-5B	UG/KG
127669	293917	SOIL	RTX-5	198	1.4		U-7	UG/KG
127669	293917	SOIL	RTX-5	201	35		J-5B	UG/KG

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Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
127669	293917	SOIL	RTX-5	3	5.0	U	UJ-5B	UG/KG
127669	293917	SOIL	RTX-5	5+8	6.1		J-14	UG/KG
127669	293917	SOIL	RTX-5	66+95	510	E	J-10	UG/KG
127669	293917	SOIL	RTX-5	70	270	E	J-5B	UG/KG
127669	293917	SOIL	RTX-5	77+110	570	E	J-10	UG/KG
127669DL	293917D1	SOIL	RTX-5	126+129+178	39	D	J-10	UG/KG
127669DL	293917D1	SOIL	RTX-5	156	40	D	U-7	UG/KG
127669DL	293917D1	SOIL	RTX-5	157+200	12	D	U-6	UG/KG
127669DL	293917D1	SOIL	RTX-5	206	14	DB	U-7	UG/KG
127669DL	293917D1	SOIL	RTX-5	3	50	U	UJ-5B	UG/KG
127669DL	293917D1	SOIL	RTX-5	5+8	10	U	UJ-14	UG/KG
127669DL	293917D1	SOIL	RTX-5	66+95	490	D	J-10	UG/KG
127669DL	293917D1	SOIL	RTX-5	77+110	540	D	J-10	UG/KG
127708	293918	SOIL	RTX-5	105+168	27		U-6	UG/KG
127708	293918	SOIL	RTX-5	126+129+178	4.2		J-10	UG/KG
127708	293918	SOIL	RTX-5	156	5.0		U-7	UG/KG
127708	293918	SOIL	RTX-5	157+200	1.5	J	U-6	UG/KG
127708	293918	SOIL	RTX-5	206	2.6	B	U-7	UG/KG
127708	293918	SOIL	RTX-5	3	12	U	UJ-5B	UG/KG
127708	293918	SOIL	RTX-5	5+8	2.5	U	UJ-14	UG/KG
127708	293918	SOIL	RTX-5	66+95	59		J-10	UG/KG
127708	293918	SOIL	RTX-5	77+110	65		J-10	UG/KG
127711	293919	SOIL	RTX-5	105+168	19		U-6	UG/KG
127711	293919	SOIL	RTX-5	126+129+178	5.2		J-10	UG/KG
127711	293919	SOIL	RTX-5	156	5.1		U-7	UG/KG
127711	293919	SOIL	RTX-5	157+200	2.4	J	U-6	UG/KG
127711	293919	SOIL	RTX-5	206	2.4	JB	U-7	UG/KG
127711	293919	SOIL	RTX-5	3	12	U	UJ-5B	UG/KG
127711	293919	SOIL	RTX-5	47+75	9.2		U-6	UG/KG
127711	293919	SOIL	RTX-5	5+8	2.5	U	UJ-14	UG/KG
127711	293919	SOIL	RTX-5	66+95	26		J-10	UG/KG
127711	293919	SOIL	RTX-5	77+110	36		J-10	UG/KG
127723	293920	SOIL	RTX-5	105+168	36		U-6	UG/KG
127723	293920	SOIL	RTX-5	126+129+178	8.7		J-10	UG/KG
127723	293920	SOIL	RTX-5	156	5.8		U-7	UG/KG
127723	293920	SOIL	RTX-5	157+200	3.0		U-6	UG/KG
127723	293920	SOIL	RTX-5	206	3.8	B	U-7	UG/KG
127723	293920	SOIL	RTX-5	3	12	U	UJ-5B	UG/KG
127723	293920	SOIL	RTX-5	5+8	2.2	J	J-14	UG/KG
127723	293920	SOIL	RTX-5	66+95	92		J-10	UG/KG

DATA QUALIFIER SUMMARY TABLE

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SDG: 57268

Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
127723	293920	SOIL	RTX-5	77+110	110		J-10	UG/KG
127727	293921	SOIL	RTX-5	126+129+178	9.2		J-10	UG/KG
127727	293921	SOIL	RTX-5	157+200	2.2	J	U-6	UG/KG
127727	293921	SOIL	RTX-5	206	4.4	B	U-7	UG/KG
127727	293921	SOIL	RTX-5	3	12	U	UJ-5B	UG/KG
127727	293921	SOIL	RTX-5	5+8	1.6	J	J-14	UG/KG
127727	293921	SOIL	RTX-5	66+95	98		J-10	UG/KG
127727	293921	SOIL	RTX-5	77+110	130		J-10	UG/KG

DATA QUALIFIER SUMMARY TABLE

6311-43

SDG: 58379

Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
127651	300480	SOIL	APIEZON	15	1.2	B	U-7	UG/KG
127651	300480	SOIL	APIEZON	195	1.5		J-14	UG/KG
127651	300480	SOIL	APIEZON	4	10	B	U-7	UG/KG
127651	300480	SOIL	APIEZON	75	12		J-5B	UG/KG
127651	300480	SOIL	APIEZON	8	1.0	U	UJ-14	UG/KG
127652	300481	SOIL	APIEZON	15	1.7	B	U-7	UG/KG
127652	300481	SOIL	APIEZON	195	1.7		J-14	UG/KG
127652	300481	SOIL	APIEZON	4	14	B	U-7	UG/KG
127652	300481	SOIL	APIEZON	75	2.5		J-5B	UG/KG
127652	300481	SOIL	APIEZON	8	0.58	J	J-14	UG/KG
127655	300482	SOIL	APIEZON	195	1.9		J-14	UG/KG
127655	300482	SOIL	APIEZON	4	44	B	U-7	UG/KG
127655	300482	SOIL	APIEZON	75	3.6		J-5B	UG/KG
127655	300482	SOIL	APIEZON	8	2.6		J-14	UG/KG
127656	300483	SOIL	APIEZON	15	0.58	JB	U-7	UG/KG
127656	300483	SOIL	APIEZON	195	0.96	J	J-14	UG/KG
127656	300483	SOIL	APIEZON	4	14	B	U-7	UG/KG
127656	300483	SOIL	APIEZON	8	1.0	U	UJ-14	UG/KG
127739	300484	SOIL	APIEZON	15	1.3	B	U-7	UG/KG
127739	300484	SOIL	APIEZON	195	1.3		J-14	UG/KG
127739	300484	SOIL	APIEZON	4	6.1	B	U-7	UG/KG
127739	300484	SOIL	APIEZON	40+41	1.7		U-7	UG/KG
127739	300484	SOIL	APIEZON	75	1.4		J-5B	UG/KG
127739	300484	SOIL	APIEZON	8	1.0	U	UJ-14	UG/KG
127742	300485	SOIL	APIEZON	15	0.73	JB	U-7	UG/KG
127742	300485	SOIL	APIEZON	195	1.1		J-14	UG/KG
127742	300485	SOIL	APIEZON	4	20	B	U-7	UG/KG
127742	300485	SOIL	APIEZON	75	8.3		J-5B	UG/KG
127742	300485	SOIL	APIEZON	8	1.0	U	UJ-14	UG/KG
127743	300486	SOIL	APIEZON	195	1.6		J-14	UG/KG
127743	300486	SOIL	APIEZON	4	5.6	B	U-7	UG/KG
127743	300486	SOIL	APIEZON	75	3.6		J-5B	UG/KG
127743	300486	SOIL	APIEZON	8	1.5	U	UJ-14	UG/KG
127744	300487	SOIL	APIEZON	15	1.3	B	U-7	UG/KG
127744	300487	SOIL	APIEZON	195	1.9		J-14	UG/KG
127744	300487	SOIL	APIEZON	4	10	B	U-7	UG/KG
127744	300487	SOIL	APIEZON	8	1.0	U	UJ-14	UG/KG
127746	300488	SOIL	APIEZON	15	3.2	B	U-7	UG/KG
127746	300488	SOIL	APIEZON	195	1.5		J-14	UG/KG
127746	300488	SOIL	APIEZON	4	19	B	U-7	UG/KG

DATA QUALIFIER SUMMARY TABLE

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SDG: 58379

Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
127746	300488	SOIL	APIEZON	8	1.5	U	UJ-14	UG/KG
127685	300490	SOIL	APIEZON	118+122	100		J-10	UG/KG
127685	300490	SOIL	APIEZON	18	76		J-10	UG/KG
127685	300490	SOIL	APIEZON	180	62		J-14	UG/KG
127685	300490	SOIL	APIEZON	195	3.3		J-14	UG/KG
127685	300490	SOIL	APIEZON	44	63		J-10	UG/KG
127687	300491	SOIL	APIEZON	118+122	200		J-10	UG/KG
127687	300491	SOIL	APIEZON	18	69		J-10	UG/KG
127687	300491	SOIL	APIEZON	44	84		J-10	UG/KG
127691	300492	SOIL	APIEZON	118+122	60		J-10	UG/KG
127691	300492	SOIL	APIEZON	18	17		J-10	UG/KG
127691	300492	SOIL	APIEZON	180	47		J-14	UG/KG
127691	300492	SOIL	APIEZON	195	3.1		J-14	UG/KG
127691	300492	SOIL	APIEZON	44	43		J-10	UG/KG
127693	300493	SOIL	APIEZON	118+122	220		J-10	UG/KG
127693	300493	SOIL	APIEZON	18	74		J-10	UG/KG
127693	300493	SOIL	APIEZON	180	120		J-14	UG/KG
127693	300493	SOIL	APIEZON	195	6.3		J-14	UG/KG
127693	300493	SOIL	APIEZON	44	170		J-10	UG/KG
127699	300494	SOIL	APIEZON	118+122	150		J-10	UG/KG
127699	300494	SOIL	APIEZON	18	49		J-10	UG/KG
127699	300494	SOIL	APIEZON	180	92		J-14	UG/KG
127699	300494	SOIL	APIEZON	195	6.8		J-14	UG/KG
127699	300494	SOIL	APIEZON	44	90		J-10	UG/KG
127799	300495	SOIL	APIEZON	118+122	64		J-10	UG/KG
127799	300495	SOIL	APIEZON	18	8.4		J-10	UG/KG
127799	300495	SOIL	APIEZON	180	37		J-14	UG/KG
127799	300495	SOIL	APIEZON	195	1.8	J	J-14	UG/KG
127799	300495	SOIL	APIEZON	44	17		J-10	UG/KG
127823	300496	SOIL	APIEZON	118+122	27		J-10	UG/KG
127823	300496	SOIL	APIEZON	18	6.6		J-10	UG/KG
127823	300496	SOIL	APIEZON	180	14		J-14	UG/KG
127823	300496	SOIL	APIEZON	44	12		J-10	UG/KG
127826	300497	SOIL	APIEZON	118+122	49		J-10	UG/KG
127826	300497	SOIL	APIEZON	18	10		J-10	UG/KG
127826	300497	SOIL	APIEZON	180	30		J-14	UG/KG
127826	300497	SOIL	APIEZON	195	1.6		J-14	UG/KG
127826	300497	SOIL	APIEZON	44	19		J-10	UG/KG
127828	300498	SOIL	APIEZON	118+122	56		J-10	UG/KG
127828	300498	SOIL	APIEZON	15	0.56	JB	U-7	UG/KG

DATA QUALIFIER SUMMARY TABLE

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SDG: 58379

Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
127828	300498	SOIL	APIEZON	18	8.3		J-10	UG/KG
127828	300498	SOIL	APIEZON	180	26		J-14	UG/KG
127828	300498	SOIL	APIEZON	190	1.5		U-7	UG/KG
127828	300498	SOIL	APIEZON	195	1.2		J-14	UG/KG
127828	300498	SOIL	APIEZON	209	1.1		J-5B	UG/KG
127828	300498	SOIL	APIEZON	4	2.7	B	U-7	UG/KG
127828	300498	SOIL	APIEZON	44	16		J-10	UG/KG
127831	300499	SOIL	APIEZON	101	51		J-9	UG/KG
127831	300499	SOIL	APIEZON	105	10		J-9	UG/KG
127831	300499	SOIL	APIEZON	118+122	41		J-10	UG/KG
127831	300499	SOIL	APIEZON	128	8.3		J-9	UG/KG
127831	300499	SOIL	APIEZON	135+151	18		J-9	UG/KG
127831	300499	SOIL	APIEZON	138+178	64		J-9	UG/KG
127831	300499	SOIL	APIEZON	141+153	75		J-9	UG/KG
127831	300499	SOIL	APIEZON	143+149	37		J-9	UG/KG
127831	300499	SOIL	APIEZON	15	1.5	B	U-7	UG/KG
127831	300499	SOIL	APIEZON	174+183+185	13		J-9	UG/KG
127831	300499	SOIL	APIEZON	18	8.3		J-10	UG/KG
127831	300499	SOIL	APIEZON	180	25		J-9,14	UG/KG
127831	300499	SOIL	APIEZON	187	27		J-9	UG/KG
127831	300499	SOIL	APIEZON	190	1.7		U-7	UG/KG
127831	300499	SOIL	APIEZON	195	1.4		J-14	UG/KG
127831	300499	SOIL	APIEZON	209	1.4		J-5B	UG/KG
127831	300499	SOIL	APIEZON	4	1.9	B	U-7	UG/KG
127831	300499	SOIL	APIEZON	44	14		J-10	UG/KG
127831	300499	SOIL	APIEZON	49	24		J-9	UG/KG
127831	300499	SOIL	APIEZON	52	30		J-9	UG/KG
127831	300499	SOIL	APIEZON	66	20		J-9	UG/KG
127831	300499	SOIL	APIEZON	72+95	29		J-9	UG/KG
127831	300499	SOIL	APIEZON	74	10		J-9	UG/KG
127831	300499	SOIL	APIEZON	84+91	13		J-9	UG/KG
127831	300499	SOIL	APIEZON	85+110	48		J-9	UG/KG
127831	300499	SOIL	APIEZON	87+119	61		J-9	UG/KG
127831	300499	SOIL	APIEZON	92	8.9		J-9	UG/KG
127831	300499	SOIL	APIEZON	97	12		J-9	UG/KG
127831	300499	SOIL	APIEZON	99	34		J-9	UG/KG
127651	300480	SOIL	RTX-5	126+129+178	6.7		J-10	UG/KG
127651	300480	SOIL	RTX-5	157+200	3.4		U-7	UG/KG
127651	300480	SOIL	RTX-5	18	4.0		J-10	UG/KG
127651	300480	SOIL	RTX-5	195+208	2.1		J-5B,10,14	UG/KG

DATA QUALIFIER SUMMARY TABLE

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SDG: 58379

Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
127651	300480	SOIL	RTX-5	198	0.51	J	U-7	UG/KG
127651	300480	SOIL	RTX-5	44	8.5		J-10	UG/KG
127651	300480	SOIL	RTX-5	5+8	72	B	UJ-7,14	UG/KG
127651	300480	SOIL	RTX-5	6	8.9	B	U-7	UG/KG
127652	300481	SOIL	RTX-5	126+129+178	7.0		J-10	UG/KG
127652	300481	SOIL	RTX-5	157+200	3.2		U-7	UG/KG
127652	300481	SOIL	RTX-5	18	11		J-10	UG/KG
127652	300481	SOIL	RTX-5	195+208	2.7		J-5B,10,14	UG/KG
127652	300481	SOIL	RTX-5	44	17		J-10	UG/KG
127652	300481	SOIL	RTX-5	5+8	95	B	UJ-7,14	UG/KG
127652	300481	SOIL	RTX-5	6	16	B	U-7	UG/KG
127655	300482	SOIL	RTX-5	126+129+178	7.9		J-10	UG/KG
127655	300482	SOIL	RTX-5	18	15		J-10	UG/KG
127655	300482	SOIL	RTX-5	195+208	3.0		J-5B,10,14	UG/KG
127655	300482	SOIL	RTX-5	198	0.53	J	U-7	UG/KG
127655	300482	SOIL	RTX-5	44	30		J-10	UG/KG
127655	300482	SOIL	RTX-5	5+8	210	EB	UJ-7,14	UG/KG
127655	300482	SOIL	RTX-5	6	25	B	U-7	UG/KG
127656	300483	SOIL	RTX-5	126+129+178	4.2		J-10	UG/KG
127656	300483	SOIL	RTX-5	157+200	1.9		U-7	UG/KG
127656	300483	SOIL	RTX-5	18	8.1		J-10	UG/KG
127656	300483	SOIL	RTX-5	195+208	2.6		J-5B,10,14	UG/KG
127656	300483	SOIL	RTX-5	44	10		J-10	UG/KG
127656	300483	SOIL	RTX-5	5+8	21	B	UJ-7,14	UG/KG
127656	300483	SOIL	RTX-5	6	5.4	B	U-7	UG/KG
127739	300484	SOIL	RTX-5	126+129+178	5.3		J-10	UG/KG
127739	300484	SOIL	RTX-5	157+200	2.7		U-7	UG/KG
127739	300484	SOIL	RTX-5	18	3.0		J-10	UG/KG
127739	300484	SOIL	RTX-5	195+208	2.3		J-5B,10,14	UG/KG
127739	300484	SOIL	RTX-5	44	10		J-10	UG/KG
127739	300484	SOIL	RTX-5	5+8	78	B	UJ-7,14	UG/KG
127739	300484	SOIL	RTX-5	6	8.6	B	U-7	UG/KG
127742	300485	SOIL	RTX-5	126+129+178	6.7		J-10	UG/KG
127742	300485	SOIL	RTX-5	157+200	2.4		U-7	UG/KG
127742	300485	SOIL	RTX-5	18	12		J-10	UG/KG
127742	300485	SOIL	RTX-5	195+208	1.4		J-5B,10,14	UG/KG
127742	300485	SOIL	RTX-5	3	6.8	B	U-7	UG/KG
127742	300485	SOIL	RTX-5	44	23		J-10	UG/KG
127742	300485	SOIL	RTX-5	5+8	12	B	UJ-7,14	UG/KG
127742	300485	SOIL	RTX-5	6	3.6	B	U-7	UG/KG

DATA QUALIFIER SUMMARY TABLE

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SDG: 58379

Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
127743	300486	SOIL	RTX-5	126+129+178	6.8		J-10	UG/KG
127743	300486	SOIL	RTX-5	157+200	3.6		U-7	UG/KG
127743	300486	SOIL	RTX-5	18	12		J-10	UG/KG
127743	300486	SOIL	RTX-5	195+208	2.4		J-5B,10,14	UG/KG
127743	300486	SOIL	RTX-5	3	18	B	U-7	UG/KG
127743	300486	SOIL	RTX-5	44	32		J-10	UG/KG
127743	300486	SOIL	RTX-5	5+8	23	B	UJ-7,14	UG/KG
127743	300486	SOIL	RTX-5	6	6.1	B	U-7	UG/KG
127744	300487	SOIL	RTX-5	126+129+178	7.0		J-10	UG/KG
127744	300487	SOIL	RTX-5	157+200	3.6		U-7	UG/KG
127744	300487	SOIL	RTX-5	18	5.5		J-10	UG/KG
127744	300487	SOIL	RTX-5	189	1.4		J-5B	UG/KG
127744	300487	SOIL	RTX-5	194	5.6		J-5B	UG/KG
127744	300487	SOIL	RTX-5	195+208	3.2		J-5B,10,14	UG/KG
127744	300487	SOIL	RTX-5	198	0.62	J	U-7	UG/KG
127744	300487	SOIL	RTX-5	205	0.52	J	J-5B	UG/KG
127744	300487	SOIL	RTX-5	206	3.4		J-5B	UG/KG
127744	300487	SOIL	RTX-5	3	4.7	JB	U-7	UG/KG
127744	300487	SOIL	RTX-5	44	12		J-10	UG/KG
127744	300487	SOIL	RTX-5	5+8	67	B	UJ-7,14	UG/KG
127744	300487	SOIL	RTX-5	6	12	B	U-7	UG/KG
127746	300488	SOIL	RTX-5	126+129+178	8.5		J-10	UG/KG
127746	300488	SOIL	RTX-5	157+200	4.9		U-7	UG/KG
127746	300488	SOIL	RTX-5	18	10		J-10	UG/KG
127746	300488	SOIL	RTX-5	189	0.96	J	J-5B	UG/KG
127746	300488	SOIL	RTX-5	194	5.4		J-5B	UG/KG
127746	300488	SOIL	RTX-5	195+208	4.8		J-5B,10,14	UG/KG
127746	300488	SOIL	RTX-5	206	5.9		J-5B	UG/KG
127746	300488	SOIL	RTX-5	3	18	B	U-7	UG/KG
127746	300488	SOIL	RTX-5	44	14		J-10	UG/KG
127746	300488	SOIL	RTX-5	5+8	150	B	UJ-7,14	UG/KG
127746	300488	SOIL	RTX-5	6	14	B	U-7	UG/KG
127685	300490	SOIL	RTX-5	101	130		J-10	UG/KG
127685	300490	SOIL	RTX-5	105+168	58		J-10	UG/KG
127685	300490	SOIL	RTX-5	118	130		J-10	UG/KG
127685	300490	SOIL	RTX-5	126+129+178	16		J-10	UG/KG
127685	300490	SOIL	RTX-5	128	26		J-10	UG/KG
127685	300490	SOIL	RTX-5	138	190		J-10	UG/KG
127685	300490	SOIL	RTX-5	153	200		J-10	UG/KG
127685	300490	SOIL	RTX-5	157+200	6.4		U-7	UG/KG

DATA QUALIFIER SUMMARY TABLE

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SDG: 58379

Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
127685	300490	SOIL	RTX-5	187	60		J-10	UG/KG
127685	300490	SOIL	RTX-5	194	9.5		J-5B	UG/KG
127685	300490	SOIL	RTX-5	195+208	6.7		J-5B	UG/KG
127685	300490	SOIL	RTX-5	206	8.2		J-5B	UG/KG
127685	300490	SOIL	RTX-5	5+8	480	B	J-10	UG/KG
127685	300490	SOIL	RTX-5	66+95	140		J-10	UG/KG
127685	300490	SOIL	RTX-5	77+110	140		J-10	UG/KG
127687	300491	SOIL	RTX-5	101	260		J-10	UG/KG
127687	300491	SOIL	RTX-5	105+168	100		J-10	UG/KG
127687	300491	SOIL	RTX-5	118	270		J-10	UG/KG
127687	300491	SOIL	RTX-5	126+129+178	30		J-10	UG/KG
127687	300491	SOIL	RTX-5	128	54		J-10	UG/KG
127687	300491	SOIL	RTX-5	138	400		J-10	UG/KG
127687	300491	SOIL	RTX-5	153	440		J-10	UG/KG
127687	300491	SOIL	RTX-5	157+200	15		U-7	UG/KG
127687	300491	SOIL	RTX-5	187	140		J-10	UG/KG
127687	300491	SOIL	RTX-5	189	5.6		J-5B	UG/KG
127687	300491	SOIL	RTX-5	194	26		J-5B	UG/KG
127687	300491	SOIL	RTX-5	195+208	18		J-5B	UG/KG
127687	300491	SOIL	RTX-5	206	19		J-5B	UG/KG
127687	300491	SOIL	RTX-5	5+8	220	B	J-10	UG/KG
127687	300491	SOIL	RTX-5	66+95	230		J-10	UG/KG
127687	300491	SOIL	RTX-5	77+110	250		J-10	UG/KG
127691	300492	SOIL	RTX-5	101	88		J-10	UG/KG
127691	300492	SOIL	RTX-5	105+168	35		J-10	UG/KG
127691	300492	SOIL	RTX-5	118	77		J-10	UG/KG
127691	300492	SOIL	RTX-5	126+129+178	10		J-10	UG/KG
127691	300492	SOIL	RTX-5	128	16		J-10	UG/KG
127691	300492	SOIL	RTX-5	138	110		J-10	UG/KG
127691	300492	SOIL	RTX-5	153	120		J-10	UG/KG
127691	300492	SOIL	RTX-5	157+200	4.6		U-7	UG/KG
127691	300492	SOIL	RTX-5	187	40		J-10	UG/KG
127691	300492	SOIL	RTX-5	194	9.7		J-5B	UG/KG
127691	300492	SOIL	RTX-5	195+208	6.4		J-5B	UG/KG
127691	300492	SOIL	RTX-5	206	8.2		J-5B	UG/KG
127691	300492	SOIL	RTX-5	3	11	B	U-7	UG/KG
127691	300492	SOIL	RTX-5	5+8	310	EB	J-10	UG/KG
127691	300492	SOIL	RTX-5	66+95	98		J-10	UG/KG
127691	300492	SOIL	RTX-5	77+110	96		J-10	UG/KG
127693	300493	SOIL	RTX-5	101	340		J-10	UG/KG

DATA QUALIFIER SUMMARY TABLE

Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
127693	300493	SOIL	RTX-5	105+168	130		J-10	UG/KG
127693	300493	SOIL	RTX-5	118	290		J-10	UG/KG
127693	300493	SOIL	RTX-5	126+129+178	29		J-10	UG/KG
127693	300493	SOIL	RTX-5	128	56		J-10	UG/KG
127693	300493	SOIL	RTX-5	138	370		J-10	UG/KG
127693	300493	SOIL	RTX-5	153	370		J-10	UG/KG
127693	300493	SOIL	RTX-5	157+200	11		U-7	UG/KG
127693	300493	SOIL	RTX-5	187	100		J-10	UG/KG
127693	300493	SOIL	RTX-5	194	17		J-5B	UG/KG
127693	300493	SOIL	RTX-5	195+208	8.5		J-5B	UG/KG
127693	300493	SOIL	RTX-5	206	11		J-5B	UG/KG
127693	300493	SOIL	RTX-5	5+8	350	B	J-10	UG/KG
127693	300493	SOIL	RTX-5	66+95	410		J-10	UG/KG
127693	300493	SOIL	RTX-5	77+110	370		J-10	UG/KG
127699	300494	SOIL	RTX-5	101	180		J-10	UG/KG
127699	300494	SOIL	RTX-5	105+168	80		J-10	UG/KG
127699	300494	SOIL	RTX-5	118	190		J-10	UG/KG
127699	300494	SOIL	RTX-5	126+129+178	18		J-10	UG/KG
127699	300494	SOIL	RTX-5	128	29		J-10	UG/KG
127699	300494	SOIL	RTX-5	138	200		J-10	UG/KG
127699	300494	SOIL	RTX-5	153	210		J-10	UG/KG
127699	300494	SOIL	RTX-5	157+200	6.8		U-7	UG/KG
127699	300494	SOIL	RTX-5	187	68		J-10	UG/KG
127699	300494	SOIL	RTX-5	194	19		J-5B	UG/KG
127699	300494	SOIL	RTX-5	195+208	11		J-5B	UG/KG
127699	300494	SOIL	RTX-5	206	11		J-5B	UG/KG
127699	300494	SOIL	RTX-5	5+8	250	B	J-10	UG/KG
127699	300494	SOIL	RTX-5	66+95	210		J-10	UG/KG
127699	300494	SOIL	RTX-5	77+110	210		J-10	UG/KG
127799	300495	SOIL	RTX-5	101	61		J-10	UG/KG
127799	300495	SOIL	RTX-5	105+168	22		J-10	UG/KG
127799	300495	SOIL	RTX-5	118	65		J-10	UG/KG
127799	300495	SOIL	RTX-5	126+129+178	6.2		J-10	UG/KG
127799	300495	SOIL	RTX-5	128	11		J-10	UG/KG
127799	300495	SOIL	RTX-5	138	85		J-10	UG/KG
127799	300495	SOIL	RTX-5	153	100		J-10	UG/KG
127799	300495	SOIL	RTX-5	157+200	3.7		U-7	UG/KG
127799	300495	SOIL	RTX-5	187	33		J-10	UG/KG
127799	300495	SOIL	RTX-5	194	6.1		J-5B	UG/KG
127799	300495	SOIL	RTX-5	195+208	2.0	J	J-5B	UG/KG

DATA QUALIFIER SUMMARY TABLE

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SDG: 58379

Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
127799	300495	SOIL	RTX-5	206	3.9		J-5B	UG/KG
127799	300495	SOIL	RTX-5	5+8	28	B	J-10	UG/KG
127799	300495	SOIL	RTX-5	66+95	38		J-10	UG/KG
127799	300495	SOIL	RTX-5	77+110	54		J-10	UG/KG
127823	300496	SOIL	RTX-5	101	28		J-10	UG/KG
127823	300496	SOIL	RTX-5	105+168	12		J-10	UG/KG
127823	300496	SOIL	RTX-5	118	34		J-10	UG/KG
127823	300496	SOIL	RTX-5	126+129+178	2.6		J-10	UG/KG
127823	300496	SOIL	RTX-5	128	5.8		J-10	UG/KG
127823	300496	SOIL	RTX-5	138	38		J-10	UG/KG
127823	300496	SOIL	RTX-5	153	48		J-10	UG/KG
127823	300496	SOIL	RTX-5	157+200	1.8		U-7	UG/KG
127823	300496	SOIL	RTX-5	187	14		J-10	UG/KG
127823	300496	SOIL	RTX-5	194	2.7		J-5B	UG/KG
127823	300496	SOIL	RTX-5	206	1.6		J-5B	UG/KG
127823	300496	SOIL	RTX-5	3	18	B	U-7	UG/KG
127823	300496	SOIL	RTX-5	5+8	11	B	J-10	UG/KG
127823	300496	SOIL	RTX-5	66+95	31		J-10	UG/KG
127823	300496	SOIL	RTX-5	77+110	33		J-10	UG/KG
127826	300497	SOIL	RTX-5	101	70		J-10	UG/KG
127826	300497	SOIL	RTX-5	105+168	26		J-10	UG/KG
127826	300497	SOIL	RTX-5	118	64		J-10	UG/KG
127826	300497	SOIL	RTX-5	126+129+178	9.1		J-10	UG/KG
127826	300497	SOIL	RTX-5	128	12		J-10	UG/KG
127826	300497	SOIL	RTX-5	138	85		J-10	UG/KG
127826	300497	SOIL	RTX-5	153	110		J-10	UG/KG
127826	300497	SOIL	RTX-5	157+200	4.4		U-7	UG/KG
127826	300497	SOIL	RTX-5	187	37		J-10	UG/KG
127826	300497	SOIL	RTX-5	194	6.2		J-5B	UG/KG
127826	300497	SOIL	RTX-5	195+208	3.1		J-5B	UG/KG
127826	300497	SOIL	RTX-5	206	4.3		J-5B	UG/KG
127826	300497	SOIL	RTX-5	3	34	B	U-7	UG/KG
127826	300497	SOIL	RTX-5	5+8	42	B	J-10	UG/KG
127826	300497	SOIL	RTX-5	66+95	61		J-10	UG/KG
127826	300497	SOIL	RTX-5	77+110	81		J-10	UG/KG
127828	300498	SOIL	RTX-5	101	53		J-10	UG/KG
127828	300498	SOIL	RTX-5	105+168	20		J-10	UG/KG
127828	300498	SOIL	RTX-5	118	56		J-10	UG/KG
127828	300498	SOIL	RTX-5	126+129+178	4.8		UJ-7,10	UG/KG
127828	300498	SOIL	RTX-5	128	8.5		J-10	UG/KG

DATA QUALIFIER SUMMARY TABLE

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SDG: 58379

Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
127828	300498	SOIL	RTX-5	138	65		J-10	UG/KG
127828	300498	SOIL	RTX-5	153	80		J-10	UG/KG
127828	300498	SOIL	RTX-5	157+200	1.9		U-7	UG/KG
127828	300498	SOIL	RTX-5	187	26		J-10	UG/KG
127828	300498	SOIL	RTX-5	5+8	33	B	U-7	UG/KG
127828	300498	SOIL	RTX-5	6	6.0	B	U-7	UG/KG
127828	300498	SOIL	RTX-5	66+95	44		J-10	UG/KG
127828	300498	SOIL	RTX-5	77+110	49		J-10	UG/KG
127828	300498	SOIL	RTX-5	85	5.7		U-7	UG/KG
127831	300499	SOIL	RTX-5	101	44		J-9,10	UG/KG
127831	300499	SOIL	RTX-5	105+168	17		J-9,10	UG/KG
127831	300499	SOIL	RTX-5	107	6.8		J-9	UG/KG
127831	300499	SOIL	RTX-5	118	41		J-9,10	UG/KG
127831	300499	SOIL	RTX-5	123+149	31		J-9	UG/KG
127831	300499	SOIL	RTX-5	126+129+178	5.0		UJ-7,10	UG/KG
127831	300499	SOIL	RTX-5	128	7.3		J-9,10	UG/KG
127831	300499	SOIL	RTX-5	135	7.9		J-9	UG/KG
127831	300499	SOIL	RTX-5	138	53		J-9,10	UG/KG
127831	300499	SOIL	RTX-5	151	10		J-9	UG/KG
127831	300499	SOIL	RTX-5	153	67		J-9,10	UG/KG
127831	300499	SOIL	RTX-5	157+200	1.7		U-7	UG/KG
127831	300499	SOIL	RTX-5	170+190	7.6		J-9	UG/KG
127831	300499	SOIL	RTX-5	171+202	6.7		J-9	UG/KG
127831	300499	SOIL	RTX-5	180	20		J-9	UG/KG
127831	300499	SOIL	RTX-5	183	7.9		J-9	UG/KG
127831	300499	SOIL	RTX-5	187	24		UJ-7,10	UG/KG
127831	300499	SOIL	RTX-5	28	8.7		J-9	UG/KG
127831	300499	SOIL	RTX-5	3	8.3	B	U-7	UG/KG
127831	300499	SOIL	RTX-5	31	6.0		J-9	UG/KG
127831	300499	SOIL	RTX-5	37+42+59	8.2		J-9	UG/KG
127831	300499	SOIL	RTX-5	41	8.9		J-9	UG/KG
127831	300499	SOIL	RTX-5	44	14	B	J-9	UG/KG
127831	300499	SOIL	RTX-5	47+75	13		J-9	UG/KG
127831	300499	SOIL	RTX-5	49	30		J-9	UG/KG
127831	300499	SOIL	RTX-5	5+8	72	B	U-7	UG/KG
127831	300499	SOIL	RTX-5	52	27		J-9	UG/KG
127831	300499	SOIL	RTX-5	56	10		J-9	UG/KG
127831	300499	SOIL	RTX-5	6	8.2	B	U-7	UG/KG
127831	300499	SOIL	RTX-5	66+95	41		J-9,10	UG/KG
127831	300499	SOIL	RTX-5	70	14		J-9	UG/KG

DATA QUALIFIER SUMMARY TABLE

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SDG: 58379

Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
127831	300499	SOIL	RTX-5	74	12		J-9	UG/KG
127831	300499	SOIL	RTX-5	77+110	51		J-9,10	UG/KG
127831	300499	SOIL	RTX-5	84	12		J-9	UG/KG
127831	300499	SOIL	RTX-5	85	6.5		U-7	UG/KG
127831	300499	SOIL	RTX-5	87+115	10		J-9	UG/KG
127831	300499	SOIL	RTX-5	91	7.4		J-9	UG/KG
127831	300499	SOIL	RTX-5	92	7.2		J-9	UG/KG
127831	300499	SOIL	RTX-5	97	11		J-9	UG/KG
127831	300499	SOIL	RTX-5	99	44		J-9	UG/KG

DATA QUALIFIER SUMMARY TABLE

Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
4T4500	309695R1	SOIL	APIEZON	118+122	51		J-10	UG/KG
4T4500	309695R1	SOIL	APIEZON	126	1.5	U	UJ-10	UG/KG
4T4500	309695R1	SOIL	APIEZON	180	19		J-10	UG/KG
4T4500	309695R1	SOIL	APIEZON	190	1.6		U-7	UG/KG
4T4500	309695R1	SOIL	APIEZON	20+31	33	B	U-7	UG/KG
4T4500	309695R1	SOIL	APIEZON	209	2.1	B	U-7	UG/KG
4T4500	309695R1	SOIL	APIEZON	28	33		J-10	UG/KG
4T4500	309695R1	SOIL	APIEZON	4	9.7	B	U-7	UG/KG
4T4500	309695R1	SOIL	APIEZON	66	48		J-10	UG/KG
4T4500	309695R1	SOIL	APIEZON	77	1.4	J	J-10	UG/KG
4T4500	309695R1	SOIL	APIEZON	84+91	24	B	U-7	UG/KG
4T4494	309696R1	SOIL	APIEZON	118+122	130		J-10	UG/KG
4T4494	309696R1	SOIL	APIEZON	126	5.0	U	UJ-10	UG/KG
4T4494	309696R1	SOIL	APIEZON	180	60		J-10	UG/KG
4T4494	309696R1	SOIL	APIEZON	190	5.3		U-7	UG/KG
4T4494	309696R1	SOIL	APIEZON	20+31	85	B	U-7	UG/KG
4T4494	309696R1	SOIL	APIEZON	209	4.1	BJ	U-7	UG/KG
4T4494	309696R1	SOIL	APIEZON	28	81		J-10	UG/KG
4T4494	309696R1	SOIL	APIEZON	4	27	B	U-7	UG/KG
4T4494	309696R1	SOIL	APIEZON	66	99		J-10	UG/KG
4T4494	309696R1	SOIL	APIEZON	77	3.9	J	J-10	UG/KG
4T4494	309696R1	SOIL	APIEZON	84+91	79	B	U-7	UG/KG
4T4483	309697R1	SOIL	APIEZON	118+122	63		J-10	UG/KG
4T4483	309697R1	SOIL	APIEZON	126	2.5	U	UJ-10	UG/KG
4T4483	309697R1	SOIL	APIEZON	180	25		J-10	UG/KG
4T4483	309697R1	SOIL	APIEZON	190	2.2	J	U-7	UG/KG
4T4483	309697R1	SOIL	APIEZON	20+31	42	B	U-7	UG/KG
4T4483	309697R1	SOIL	APIEZON	209	63	B	U-7	UG/KG
4T4483	309697R1	SOIL	APIEZON	28	43		J-10	UG/KG
4T4483	309697R1	SOIL	APIEZON	4	10	B	U-7	UG/KG
4T4483	309697R1	SOIL	APIEZON	66	57		J-10	UG/KG
4T4483	309697R1	SOIL	APIEZON	77	1.8	J	J-10	UG/KG
4T4483	309697R1	SOIL	APIEZON	84+91	33	B	U-7	UG/KG
4T4481	309698R1	SOIL	APIEZON	118+122	160		J-10	UG/KG
4T4481	309698R1	SOIL	APIEZON	126	4.0	U	UJ-10	UG/KG
4T4481	309698R1	SOIL	APIEZON	180	78		J-10	UG/KG
4T4481	309698R1	SOIL	APIEZON	190	6.8		U-7	UG/KG
4T4481	309698R1	SOIL	APIEZON	20+31	79	B	U-7	UG/KG
4T4481	309698R1	SOIL	APIEZON	209	30	B	U-7	UG/KG
4T4481	309698R1	SOIL	APIEZON	28	78		J-10	UG/KG

DATA QUALIFIER SUMMARY TABLE

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SDG: 62004

Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
4T4481	309698R1	SOIL	APIEZON	4	23	B	U-7	UG/KG
4T4481	309698R1	SOIL	APIEZON	66	120		J-10	UG/KG
4T4481	309698R1	SOIL	APIEZON	77	6.6		J-10	UG/KG
4T4481	309698R1	SOIL	APIEZON	84+91	100	B	U-7	UG/KG
4T4484	309699R1	SOIL	APIEZON	118+122	72		J-10	UG/KG
4T4484	309699R1	SOIL	APIEZON	126	2.5	U	UJ-10	UG/KG
4T4484	309699R1	SOIL	APIEZON	180	30		J-10	UG/KG
4T4484	309699R1	SOIL	APIEZON	190	2.7		U-7	UG/KG
4T4484	309699R1	SOIL	APIEZON	20+31	61	B	U-7	UG/KG
4T4484	309699R1	SOIL	APIEZON	209	12	B	U-7	UG/KG
4T4484	309699R1	SOIL	APIEZON	28	60		J-10	UG/KG
4T4484	309699R1	SOIL	APIEZON	4	15	B	U-7	UG/KG
4T4484	309699R1	SOIL	APIEZON	66	68		J-10	UG/KG
4T4484	309699R1	SOIL	APIEZON	77	2.3	J	J-10	UG/KG
4T4484	309699R1	SOIL	APIEZON	84+91	42	B	U-7	UG/KG
139282	309700R1	SOIL	APIEZON	1	140	B	U-7	UG/KG
139282	309700R1	SOIL	APIEZON	118+122	130		J-10	UG/KG
139282	309700R1	SOIL	APIEZON	126	2.0	U	UJ-10	UG/KG
139282	309700R1	SOIL	APIEZON	180	32		J-10	UG/KG
139282	309700R1	SOIL	APIEZON	190	3.3		U-7	UG/KG
139282	309700R1	SOIL	APIEZON	20+31	43	B	U-7	UG/KG
139282	309700R1	SOIL	APIEZON	209	2.1	B	U-7	UG/KG
139282	309700R1	SOIL	APIEZON	28	40		J-10	UG/KG
139282	309700R1	SOIL	APIEZON	4	23	B	U-7	UG/KG
139282	309700R1	SOIL	APIEZON	66	110		J-10	UG/KG
139282	309700R1	SOIL	APIEZON	77	3.5		J-10	UG/KG
139282	309700R1	SOIL	APIEZON	84+91	29	B	U-7	UG/KG
139288	309701R1	SOIL	APIEZON	118+122	340		J-10	UG/KG
139288	309701R1	SOIL	APIEZON	126	5.0	U	UJ-10	UG/KG
139288	309701R1	SOIL	APIEZON	176	2.7	BJ	U-7	UG/KG
139288	309701R1	SOIL	APIEZON	180	45		J-10	UG/KG
139288	309701R1	SOIL	APIEZON	190	5.4		U-7	UG/KG
139288	309701R1	SOIL	APIEZON	20+31	110	B	U-7	UG/KG
139288	309701R1	SOIL	APIEZON	209	13	B	U-7	UG/KG
139288	309701R1	SOIL	APIEZON	28	130		J-10	UG/KG
139288	309701R1	SOIL	APIEZON	4	38	B	U-7	UG/KG
139288	309701R1	SOIL	APIEZON	66	420		J-10	UG/KG
139288	309701R1	SOIL	APIEZON	77	14		J-10	UG/KG
139288	309701R1	SOIL	APIEZON	84+91	110	B	U-7	UG/KG
139290	309702R1	SOIL	APIEZON	118+122	210		J-10	UG/KG

DATA QUALIFIER SUMMARY TABLE

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SDG: 62004

Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
139290	309702R1	SOIL	APIEZON	126	2.5	U	UJ-10	UG/K
139290	309702R1	SOIL	APIEZON	180	59		J-10	UG/KG
139290	309702R1	SOIL	APIEZON	190	5.9		U-7	UG/KG
139290	309702R1	SOIL	APIEZON	20+31	84	B	U-7	UG/KG
139290	309702R1	SOIL	APIEZON	209	8.3	B	U-7	UG/KG
139290	309702R1	SOIL	APIEZON	28	80		J-10	UG/KG
139290	309702R1	SOIL	APIEZON	4	35	B	U-7	UG/KG
139290	309702R1	SOIL	APIEZON	66	190		J-10	UG/KG
139290	309702R1	SOIL	APIEZON	77	5.4		J-10	UG/KG
139290	309702R1	SOIL	APIEZON	84+91	40	B	U-7	UG/KG
139286	309703R1	SOIL	APIEZON	118+122	190		J-10	UG/KG
139286	309703R1	SOIL	APIEZON	126	2.5	U	UJ-10	UG/KG
139286	309703R1	SOIL	APIEZON	180	35		J-10	UG/KG
139286	309703R1	SOIL	APIEZON	190	4.0		U-7	UG/KG
139286	309703R1	SOIL	APIEZON	20+31	87	B	U-7	UG/KG
139286	309703R1	SOIL	APIEZON	209	9.2	B	U-7	UG/KG
139286	309703R1	SOIL	APIEZON	28	85		J-10	UG/KG
139286	309703R1	SOIL	APIEZON	4	39	B	U-7	UG/KG
139286	309703R1	SOIL	APIEZON	66	180		J-10	UG/KG
139286	309703R1	SOIL	APIEZON	77	5.7		J-10	UG/KG
139286	309703R1	SOIL	APIEZON	84+91	45	B	U-7	UG/K
139285	309704R1	SOIL	APIEZON	118+122	280		J-10	UG/KG
139285	309704R1	SOIL	APIEZON	126	5.0	U	UJ-10	UG/KG
139285	309704R1	SOIL	APIEZON	180	39		J-10	UG/KG
139285	309704R1	SOIL	APIEZON	190	4.6	J	U-7	UG/KG
139285	309704R1	SOIL	APIEZON	20+31	110	B	U-7	UG/KG
139285	309704R1	SOIL	APIEZON	209	6.2	B	U-7	UG/KG
139285	309704R1	SOIL	APIEZON	28	150		J-10	UG/KG
139285	309704R1	SOIL	APIEZON	4	24	B	U-7	UG/KG
139285	309704R1	SOIL	APIEZON	66	370		J-10	UG/KG
139285	309704R1	SOIL	APIEZON	77	16		J-10	UG/KG
139285	309704R1	SOIL	APIEZON	84+91	67	B	U-7	UG/KG
131509	309705R1	SOIL	APIEZON	1	4.4	BJ	U-7	UG/KG
131509	309705R1	SOIL	APIEZON	118+122	62		J-10	UG/KG
131509	309705R1	SOIL	APIEZON	126	1.0	U	UJ-10	UG/KG
131509	309705R1	SOIL	APIEZON	176	0.81	J	U-7	UG/KG
131509	309705R1	SOIL	APIEZON	180	22		J-10	UG/KG
131509	309705R1	SOIL	APIEZON	190	1.9		U-7	UG/KG
131509	309705R1	SOIL	APIEZON	20+31	26		U-7	UG/KG
131509	309705R1	SOIL	APIEZON	209	4.8	B	U-7	UG/KG

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Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
131509	309705R1	SOIL	APIEZON	28	27	B	J-10	UG/KG
131509	309705R1	SOIL	APIEZON	66	50		J-10	UG/KG
131509	309705R1	SOIL	APIEZON	77	1.0	U	UJ-10	UG/KG
131509	309705R1	SOIL	APIEZON	84+91	20		U-7	UG/KG
131507	309706R1	SOIL	APIEZON	118+122	150		J-10	UG/KG
131507	309706R1	SOIL	APIEZON	126	5.0	U	UJ-10	UG/KG
131507	309706R1	SOIL	APIEZON	180	61		J-10	UG/KG
131507	309706R1	SOIL	APIEZON	190	5.7		U-7	UG/KG
131507	309706R1	SOIL	APIEZON	20+31	120		U-7	UG/KG
131507	309706R1	SOIL	APIEZON	209	3.9	BJ	U-7	UG/KG
131507	309706R1	SOIL	APIEZON	28	110	B	J-10	UG/KG
131507	309706R1	SOIL	APIEZON	4	80	B	U-7	UG/KG
131507	309706R1	SOIL	APIEZON	66	160		J-10	UG/KG
131507	309706R1	SOIL	APIEZON	77	3.2	J	J-10	UG/KG
131507	309706R1	SOIL	APIEZON	84+91	69		U-7	UG/KG
131508	309707R1	SOIL	APIEZON	1	10	B	U-7	UG/KG
131508	309707R1	SOIL	APIEZON	118+122	62		J-10	UG/KG
131508	309707R1	SOIL	APIEZON	126	2.0	U	UJ-10	UG/KG
131508	309707R1	SOIL	APIEZON	180	27		J-10	UG/KG
131508	309707R1	SOIL	APIEZON	190	2.4		U-7	UG/KG
131508	309707R1	SOIL	APIEZON	20+31	35		U-7	UG/KG
131508	309707R1	SOIL	APIEZON	209	37	B	U-7	UG/KG
131508	309707R1	SOIL	APIEZON	28	34	B	J-10	UG/KG
131508	309707R1	SOIL	APIEZON	66	46		J-10	UG/KG
131508	309707R1	SOIL	APIEZON	77	1.5	J	J-10	UG/KG
131508	309707R1	SOIL	APIEZON	84+91	26		U-7	UG/KG
131510	309708R1	SOIL	APIEZON	1	19	B	U-7	UG/KG
131510	309708R1	SOIL	APIEZON	118+122	78		J-10	UG/KG
131510	309708R1	SOIL	APIEZON	126	2.5	U	UJ-10	UG/KG
131510	309708R1	SOIL	APIEZON	180	27		J-10	UG/KG
131510	309708R1	SOIL	APIEZON	190	2.3	J	U-7	UG/KG
131510	309708R1	SOIL	APIEZON	20+31	71		U-7	UG/KG
131510	309708R1	SOIL	APIEZON	209	5.2	B	U-7	UG/KG
131510	309708R1	SOIL	APIEZON	28	67	B	J-10	UG/KG
131510	309708R1	SOIL	APIEZON	66	81		J-10	UG/KG
131510	309708R1	SOIL	APIEZON	77	1.4	J	J-10	UG/KG
131510	309708R1	SOIL	APIEZON	84+91	42		U-7	UG/KG
131501	309709R1	SOIL	APIEZON	118+122	32		J-10	UG/KG
131501	309709R1	SOIL	APIEZON	126	1.5	U	UJ-10	UG/KG
131501	309709R1	SOIL	APIEZON	180	16		J-10	UG/KG

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Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
131501	309709R1	SOIL	APIEZON	190	1.4	J	U-7	UG/L
131501	309709R1	SOIL	APIEZON	20+31	25		U-7	UG/KG
131501	309709R1	SOIL	APIEZON	209	1.3	BJ	U-7	UG/KG
131501	309709R1	SOIL	APIEZON	28	23	B	J-10	UG/KG
131501	309709R1	SOIL	APIEZON	4	21	B	U-7	UG/KG
131501	309709R1	SOIL	APIEZON	66	30		J-10	UG/KG
131501	309709R1	SOIL	APIEZON	77	1.5	U	UJ-10	UG/KG
131501	309709R1	SOIL	APIEZON	84+91	13		U-7	UG/KG
139416	309710R1	SOIL	APIEZON	1	350	B	U-7	UG/KG
139416	309710R1	SOIL	APIEZON	118+122	2100	E	J-10	UG/KG
139416	309710R1	SOIL	APIEZON	126	5.7		J-10	UG/KG
139416	309710R1	SOIL	APIEZON	176	28		U-7	UG/KG
139416	309710R1	SOIL	APIEZON	180	250		J-10	UG/KG
139416	309710R1	SOIL	APIEZON	209	3.7	BJ	U-7	UG/KG
139416	309710R1	SOIL	APIEZON	28	1300	BE	J-10	UG/KG
139416	309710R1	SOIL	APIEZON	66	1200	E	J-10	UG/KG
139416	309710R1	SOIL	APIEZON	77	200		J-10	UG/KG
139416DL	309710R1D1	SOIL	APIEZON	1	340	DB	U-7	UG/KG
139416DL	309710R1D1	SOIL	APIEZON	118+122	2800	D	J-10	UG/KG
139416DL	309710R1D1	SOIL	APIEZON	126	50	U	UJ-10	UG/KG
139416DL	309710R1D1	SOIL	APIEZON	180	300	D	J-10	UG/KG
139416DL	309710R1D1	SOIL	APIEZON	190	38	DJ	U-7	UG/KG
139416DL	309710R1D1	SOIL	APIEZON	20+31	1700	D	U-7	UG/KG
139416DL	309710R1D1	SOIL	APIEZON	28	2000	DB	J-10	UG/KG
139416DL	309710R1D1	SOIL	APIEZON	66	4600	D	J-10	UG/KG
139416DL	309710R1D1	SOIL	APIEZON	77	260	D	J-10	UG/KG
139416DL	309710R1D1	SOIL	APIEZON	84+91	940	D	U-7	UG/KG
139404	309711R1	SOIL	APIEZON	1	90	B	U-7	UG/KG
139404	309711R1	SOIL	APIEZON	118+122	520	E	J-10	UG/KG
139404	309711R1	SOIL	APIEZON	126	1.3		J-10	UG/KG
139404	309711R1	SOIL	APIEZON	176	5.5		U-7	UG/KG
139404	309711R1	SOIL	APIEZON	180	77		J-10	UG/KG
139404	309711R1	SOIL	APIEZON	209	7.0	B	U-7	UG/KG
139404	309711R1	SOIL	APIEZON	28	110	BE	J-10	UG/KG
139404	309711R1	SOIL	APIEZON	66	280	E	J-10	UG/KG
139404	309711R1	SOIL	APIEZON	77	26		J-10	UG/KG
139404DL	309711R1D1	SOIL	APIEZON	1	70	DB	U-7	UG/KG
139404DL	309711R1D1	SOIL	APIEZON	118+122	740	D	J-10	UG/KG
139404DL	309711R1D1	SOIL	APIEZON	126	10	U	UJ-10	UG/KG
139404DL	309711R1D1	SOIL	APIEZON	18	44	DB	U-7	UG/KG

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Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
139404DL	309711R1D1	SOIL	APIEZON	180	88	D	J-10	UG/KG
139404DL	309711R1D1	SOIL	APIEZON	190	10	D	U-7	UG/KG
139404DL	309711R1D1	SOIL	APIEZON	20+31	110	D	U-7	UG/KG
139404DL	309711R1D1	SOIL	APIEZON	209	10	DB	U-7	UG/KG
139404DL	309711R1D1	SOIL	APIEZON	28	120	DB	J-10	UG/KG
139404DL	309711R1D1	SOIL	APIEZON	66	790	D	J-10	UG/KG
139404DL	309711R1D1	SOIL	APIEZON	77	26	D	J-10	UG/KG
139404DL	309711R1D1	SOIL	APIEZON	84+91	130	D	U-7	UG/KG
139401	309712R1	SOIL	APIEZON	1	120	B	U-7	UG/KG
139401	309712R1	SOIL	APIEZON	118+122	320		J-10	UG/KG
139401	309712R1	SOIL	APIEZON	126	2.5	U	UJ-10	UG/KG
139401	309712R1	SOIL	APIEZON	176	4.0		U-7	UG/KG
139401	309712R1	SOIL	APIEZON	180	33		J-10	UG/KG
139401	309712R1	SOIL	APIEZON	190	3.4		U-7	UG/KG
139401	309712R1	SOIL	APIEZON	209	1.2	BJ	U-7	UG/KG
139401	309712R1	SOIL	APIEZON	28	300	BE	J-10	UG/KG
139401	309712R1	SOIL	APIEZON	66	490	E	J-10	UG/KG
139401	309712R1	SOIL	APIEZON	77	33		J-10	UG/KG
139401DL	309712R1D1	SOIL	APIEZON	1	85	DBJ	U-7	UG/KG
139401DL	309712R1D1	SOIL	APIEZON	118+122	380	D	J-10	UG/KG
139401DL	309712R1D1	SOIL	APIEZON	126	25	U	UJ-10	UG/KG
139401DL	309712R1D1	SOIL	APIEZON	18	63	DB	U-7	UG/KG
139401DL	309712R1D1	SOIL	APIEZON	180	38	D	J-10	UG/KG
139401DL	309712R1D1	SOIL	APIEZON	20+31	230	D	U-7	UG/KG
139401DL	309712R1D1	SOIL	APIEZON	28	320	DB	J-10	UG/KG
139401DL	309712R1D1	SOIL	APIEZON	4	320	DB	U-7	UG/KG
139401DL	309712R1D1	SOIL	APIEZON	66	620	D	J-10	UG/KG
139401DL	309712R1D1	SOIL	APIEZON	77	32	D	J-10	UG/KG
139401DL	309712R1D1	SOIL	APIEZON	84+91	120	D	U-7	UG/KG
139410	309713R1	SOIL	APIEZON	1	56	B	U-7	UG/KG
139410	309713R1	SOIL	APIEZON	118+122	670	E	J-10	UG/KG
139410	309713R1	SOIL	APIEZON	126	2.0	J	J-10	UG/KG
139410	309713R1	SOIL	APIEZON	176	6.2		U-7	UG/KG
139410	309713R1	SOIL	APIEZON	180	82		J-10	UG/KG
139410	309713R1	SOIL	APIEZON	209	4.0	B	U-7	UG/KG
139410	309713R1	SOIL	APIEZON	28	420	BE	J-10	UG/KG
139410	309713R1	SOIL	APIEZON	66	730	E	J-10	UG/KG
139410	309713R1	SOIL	APIEZON	77	72		J-10	UG/KG
139410DL	309713R1D1	SOIL	APIEZON	118+122	810	D	J-10	UG/KG
139410DL	309713R1D1	SOIL	APIEZON	126	25	U	UJ-10	UG/KG

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Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
139410DL	309713R1D1	SOIL	APIEZON	18	92	DB	U-7	UG/KG
139410DL	309713R1D1	SOIL	APIEZON	180	94	D	J-10	UG/KG
139410DL	309713R1D1	SOIL	APIEZON	20+31	380	D	U-7	UG/KG
139410DL	309713R1D1	SOIL	APIEZON	28	490	DB	J-10	UG/KG
139410DL	309713R1D1	SOIL	APIEZON	4	190	DB	U-7	UG/KG
139410DL	309713R1D1	SOIL	APIEZON	66	1200	D	J-10	UG/KG
139410DL	309713R1D1	SOIL	APIEZON	77	67	D	J-10	UG/KG
139410DL	309713R1D1	SOIL	APIEZON	84+91	230	D	U-7	UG/KG
139418	309714R1	SOIL	APIEZON	1	150	B	U-7	UG/KG
139418	309714R1	SOIL	APIEZON	118+122	140	E	J-10	UG/KG
139418	309714R1	SOIL	APIEZON	126	0.50	U	UJ-10	UG/KG
139418	309714R1	SOIL	APIEZON	176	1.7		U-7	UG/KG
139418	309714R1	SOIL	APIEZON	180	18		J-10	UG/KG
139418	309714R1	SOIL	APIEZON	209	1.4	B	U-7	UG/KG
139418	309714R1	SOIL	APIEZON	28	95	BE	J-10	UG/KG
139418	309714R1	SOIL	APIEZON	66	150	E	J-10	UG/KG
139418	309714R1	SOIL	APIEZON	77	11		J-10	UG/KG
139418DL	309714R1D1	SOIL	APIEZON	1	150	DB	U-7	UG/KG
139418DL	309714R1D1	SOIL	APIEZON	118+122	170	D	J-10	UG/KG
139418DL	309714R1D1	SOIL	APIEZON	126	7.5	U	UJ-10	UG/KG
139418DL	309714R1D1	SOIL	APIEZON	180	20	D	J-10	UG/KG
139418DL	309714R1D1	SOIL	APIEZON	20+31	130	D	U-7	UG/KG
139418DL	309714R1D1	SOIL	APIEZON	28	120	DB	J-10	UG/KG
139418DL	309714R1D1	SOIL	APIEZON	66	240	D	J-10	UG/KG
139418DL	309714R1D1	SOIL	APIEZON	77	10	D	J-10	UG/KG
139418DL	309714R1D1	SOIL	APIEZON	84+91	39	D	U-7	UG/KG
4T4500	309695R1	SOIL	RTX-5	119	4.5		U-7	UG/KG
4T4500	309695R1	SOIL	RTX-5	126+129+178	5.9		J-10	UG/KG
4T4500	309695R1	SOIL	RTX-5	167	2.8	B	U-7	UG/KG
4T4500	309695R1	SOIL	RTX-5	170+190	9.6		U-7	UG/KG
4T4500	309695R1	SOIL	RTX-5	18	17		J-10	UG/KG
4T4500	309695R1	SOIL	RTX-5	195+208	1.7		J-10	UG/KG
4T4500	309695R1	SOIL	RTX-5	209	2.2	B	U-7	UG/KG
4T4500	309695R1	SOIL	RTX-5	44	42		J-10	UG/KG
4T4500	309695R1	SOIL	RTX-5	52	97		J-10	UG/KG
4T4500	309695R1	SOIL	RTX-5	77+110	85		J-10	UG/KG
4T4500	309695R1	SOIL	RTX-5	82	5.8		U-7	UG/KG
4T4500	309695R1	SOIL	RTX-5	85	17	B	U-7	UG/KG
4T4500	309695R1	SOIL	RTX-5	87+115	29	B	U-7	UG/KG
4T4494	309696R1	SOIL	RTX-5	119	10		U-7	UG/KG

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Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
4T4494	309696R1	SOIL	RTX-5	122	2.5	BJ	U-7	UG/KG
4T4494	309696R1	SOIL	RTX-5	126+129+178	14		J-10	UG/KG
4T4494	309696R1	SOIL	RTX-5	167	7.4	B	U-7	UG/KG
4T4494	309696R1	SOIL	RTX-5	170+190	30		U-7	UG/KG
4T4494	309696R1	SOIL	RTX-5	18	48		J-10	UG/KG
4T4494	309696R1	SOIL	RTX-5	195+208	5.8		J-10	UG/KG
4T4494	309696R1	SOIL	RTX-5	209	4.5	BJ	U-7	UG/KG
4T4494	309696R1	SOIL	RTX-5	44	120		J-10	UG/KG
4T4494	309696R1	SOIL	RTX-5	52	290		J-10	UG/KG
4T4494	309696R1	SOIL	RTX-5	77+110	240		J-10	UG/KG
4T4494	309696R1	SOIL	RTX-5	82	15		U-7	UG/KG
4T4494	309696R1	SOIL	RTX-5	85	41	B	U-7	UG/KG
4T4494	309696R1	SOIL	RTX-5	87+115	74	B	U-7	UG/KG
4T4483	309697R1	SOIL	RTX-5	119	6.2		U-7	UG/KG
4T4483	309697R1	SOIL	RTX-5	126+129+178	7.4		J-10	UG/KG
4T4483	309697R1	SOIL	RTX-5	167	3.8	B	U-7	UG/KG
4T4483	309697R1	SOIL	RTX-5	170+190	13		U-7	UG/KG
4T4483	309697R1	SOIL	RTX-5	18	27		J-10	UG/KG
4T4483	309697R1	SOIL	RTX-5	195+208	3.0		J-10	UG/KG
4T4483	309697R1	SOIL	RTX-5	209	69	B	U-7	UG/KG
4T4483	309697R1	SOIL	RTX-5	44	59		J-10	UG/KG
4T4483	309697R1	SOIL	RTX-5	52	130		J-10	UG/KG
4T4483	309697R1	SOIL	RTX-5	77+110	110		J-10	UG/KG
4T4483	309697R1	SOIL	RTX-5	82	7.1		U-7	UG/KG
4T4483	309697R1	SOIL	RTX-5	85	22	B	U-7	UG/KG
4T4483	309697R1	SOIL	RTX-5	87+115	37	B	U-7	UG/KG
4T4481	309698R1	SOIL	RTX-5	119	16		U-7	UG/KG
4T4481	309698R1	SOIL	RTX-5	122	4.3	B	U-7	UG/KG
4T4481	309698R1	SOIL	RTX-5	126+129+178	22		J-10	UG/KG
4T4481	309698R1	SOIL	RTX-5	167	9.6	B	U-7	UG/KG
4T4481	309698R1	SOIL	RTX-5	18	54		J-10	UG/KG
4T4481	309698R1	SOIL	RTX-5	195+208	7.5		J-10	UG/KG
4T4481	309698R1	SOIL	RTX-5	209	35	B	U-7	UG/KG
4T4481	309698R1	SOIL	RTX-5	44	130		J-10	UG/KG
4T4481	309698R1	SOIL	RTX-5	52	300		J-10	UG/KG
4T4481	309698R1	SOIL	RTX-5	77+110	310		J-10	UG/KG
4T4481	309698R1	SOIL	RTX-5	85	49	B	U-7	UG/KG
4T4481	309698R1	SOIL	RTX-5	87+115	100	B	U-7	UG/KG
4T4484	309699R1	SOIL	RTX-5	119	5.6		U-7	UG/KG
4T4484	309699R1	SOIL	RTX-5	126+129+178	8.4		J-10	UG/KG

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Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
4T4484	309699R1	SOIL	RTX-5	167	4.1	B	U-7	UG/K
4T4484	309699R1	SOIL	RTX-5	170+190	16		U-7	UG/KG
4T4484	309699R1	SOIL	RTX-5	18	29		J-10	UG/KG
4T4484	309699R1	SOIL	RTX-5	195+208	3.0		J-10	UG/KG
4T4484	309699R1	SOIL	RTX-5	209	15	B	U-7	UG/KG
4T4484	309699R1	SOIL	RTX-5	44	82		J-10	UG/KG
4T4484	309699R1	SOIL	RTX-5	52	180		J-10	UG/KG
4T4484	309699R1	SOIL	RTX-5	77+110	130		J-10	UG/KG
4T4484	309699R1	SOIL	RTX-5	82	9.8		U-7	UG/KG
4T4484	309699R1	SOIL	RTX-5	85	25	B	U-7	UG/KG
4T4484	309699R1	SOIL	RTX-5	87+115	45	B	U-7	UG/KG
139282	309700R1	SOIL	RTX-5	119	5.3		U-7	UG/KG
139282	309700R1	SOIL	RTX-5	122	2.1	B	U-7	UG/KG
139282	309700R1	SOIL	RTX-5	126+129+178	8.4		J-10	UG/KG
139282	309700R1	SOIL	RTX-5	167	6.4	B	U-7	UG/KG
139282	309700R1	SOIL	RTX-5	18	19		J-10	UG/KG
139282	309700R1	SOIL	RTX-5	195+208	3.0		J-10	UG/KG
139282	309700R1	SOIL	RTX-5	209	2.5	B	U-7	UG/KG
139282	309700R1	SOIL	RTX-5	3	30	B	U-7	UG/KG
139282	309700R1	SOIL	RTX-5	44	44		J-10	UG/K
139282	309700R1	SOIL	RTX-5	52	100		J-10	UG/KG
139282	309700R1	SOIL	RTX-5	77+110	120		J-10	UG/KG
139282	309700R1	SOIL	RTX-5	85	44	B	U-7	UG/KG
139282	309700R1	SOIL	RTX-5	87+115	63	B	U-7	UG/KG
139288	309701R1	SOIL	RTX-5	119	15		U-7	UG/KG
139288	309701R1	SOIL	RTX-5	122	5.4	B	U-7	UG/KG
139288	309701R1	SOIL	RTX-5	126+129+178	25		J-10	UG/KG
139288	309701R1	SOIL	RTX-5	167	11	B	U-7	UG/KG
139288	309701R1	SOIL	RTX-5	170+190	30		U-7	UG/KG
139288	309701R1	SOIL	RTX-5	18	39		J-10	UG/KG
139288	309701R1	SOIL	RTX-5	195+208	4.9	J	J-10	UG/KG
139288	309701R1	SOIL	RTX-5	209	15	B	U-7	UG/KG
139288	309701R1	SOIL	RTX-5	44	170		J-10	UG/KG
139288	309701R1	SOIL	RTX-5	52	400		J-10	UG/KG
139288	309701R1	SOIL	RTX-5	77+110	420		J-10	UG/KG
139288	309701R1	SOIL	RTX-5	85	130	B	U-7	UG/KG
139290	309702R1	SOIL	RTX-5	119	10		U-7	UG/KG
139290	309702R1	SOIL	RTX-5	122	2.3	BJ	U-7	UG/KG
139290	309702R1	SOIL	RTX-5	126+129+178	16		J-10	UG/KG
139290	309702R1	SOIL	RTX-5	18	41		J-10	UG/K

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Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
139290	309702R1	SOIL	RTX-5	195+208	6.4		J-10	UG/KG
139290	309702R1	SOIL	RTX-5	207	1.3	J	U-7	UG/KG
139290	309702R1	SOIL	RTX-5	209	10	B	U-7	UG/KG
139290	309702R1	SOIL	RTX-5	44	84		J-10	UG/KG
139290	309702R1	SOIL	RTX-5	52	200		J-10	UG/KG
139290	309702R1	SOIL	RTX-5	77+110	180		J-10	UG/KG
139290	309702R1	SOIL	RTX-5	85	58	B	U-7	UG/KG
139290	309702R1	SOIL	RTX-5	87+115	88	B	U-7	UG/KG
139286	309703R1	SOIL	RTX-5	119	8.3		U-7	UG/KG
139286	309703R1	SOIL	RTX-5	122	2.6	B	U-7	UG/KG
139286	309703R1	SOIL	RTX-5	126+129+178	14		J-10	UG/KG
139286	309703R1	SOIL	RTX-5	167	8.4	B	U-7	UG/KG
139286	309703R1	SOIL	RTX-5	18	44		J-10	UG/KG
139286	309703R1	SOIL	RTX-5	195+208	3.7		J-10	UG/KG
139286	309703R1	SOIL	RTX-5	209	12	B	U-7	UG/KG
139286	309703R1	SOIL	RTX-5	44	85		J-10	UG/KG
139286	309703R1	SOIL	RTX-5	52	210		J-10	UG/KG
139286	309703R1	SOIL	RTX-5	77+110	190		J-10	UG/KG
139286	309703R1	SOIL	RTX-5	85	57	B	U-7	UG/KG
139286	309703R1	SOIL	RTX-5	87+115	87	B	U-7	UG/KG
139285	309704R1	SOIL	RTX-5	119	12		U-7	UG/KG
139285	309704R1	SOIL	RTX-5	122	6.7	B	U-7	UG/KG
139285	309704R1	SOIL	RTX-5	126+129+178	22		J-10	UG/KG
139285	309704R1	SOIL	RTX-5	167	12	B	U-7	UG/KG
139285	309704R1	SOIL	RTX-5	170+190	24		U-7	UG/KG
139285	309704R1	SOIL	RTX-5	18	42		J-10	UG/KG
139285	309704R1	SOIL	RTX-5	195+208	3.4	J	J-10	UG/KG
139285	309704R1	SOIL	RTX-5	209	7.0	B	U-7	UG/KG
139285	309704R1	SOIL	RTX-5	44	120		J-10	UG/KG
139285	309704R1	SOIL	RTX-5	52	340		J-10	UG/KG
139285	309704R1	SOIL	RTX-5	77+110	300		J-10	UG/KG
139285	309704R1	SOIL	RTX-5	85	96	B	U-7	UG/KG
139285	309704R1	SOIL	RTX-5	87+115	150	B	U-7	UG/KG
131509	309705R1	SOIL	RTX-5	119	4.4		U-7	UG/KG
131509	309705R1	SOIL	RTX-5	122	1.1		U-7	UG/KG
131509	309705R1	SOIL	RTX-5	126+129+178	7.7		J-10	UG/KG
131509	309705R1	SOIL	RTX-5	18	14		J-10	UG/KG
131509	309705R1	SOIL	RTX-5	195+208	2.4		J-10	UG/KG
131509	309705R1	SOIL	RTX-5	209	6.0	B	U-7	UG/KG
131509	309705R1	SOIL	RTX-5	44	34		J-10	UG/KG

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Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
131509	309705R1	SOIL	RTX-5	52	83		J-10	UG/K
131509	309705R1	SOIL	RTX-5	77+110	79		J-10	UG/KG
131509	309705R1	SOIL	RTX-5	85	21		U-7	UG/KG
131509	309705R1	SOIL	RTX-5	87+115	32		U-7	UG/KG
131507	309706R1	SOIL	RTX-5	119	9.9		U-7	UG/KG
131507	309706R1	SOIL	RTX-5	122	3.0	J	U-7	UG/KG
131507	309706R1	SOIL	RTX-5	126+129+178	18		J-10	UG/KG
131507	309706R1	SOIL	RTX-5	167	9.4		U-7	UG/KG
131507	309706R1	SOIL	RTX-5	18	63		J-10	UG/KG
131507	309706R1	SOIL	RTX-5	195+208	7.0		J-10	UG/KG
131507	309706R1	SOIL	RTX-5	209	4.1	BJ	U-7	UG/KG
131507	309706R1	SOIL	RTX-5	44	150		J-10	UG/KG
131507	309706R1	SOIL	RTX-5	52	330		J-10	UG/KG
131507	309706R1	SOIL	RTX-5	77+110	250		J-10	UG/KG
131507	309706R1	SOIL	RTX-5	82	20	B	U-7	UG/KG
131507	309706R1	SOIL	RTX-5	85	57		U-7	UG/KG
131507	309706R1	SOIL	RTX-5	87+115	96		U-7	UG/KG
131508	309707R1	SOIL	RTX-5	119	6.9		U-7	UG/KG
131508	309707R1	SOIL	RTX-5	126+129+178	7.5		J-10	UG/KG
131508	309707R1	SOIL	RTX-5	167	4.2		U-7	UG/K
131508	309707R1	SOIL	RTX-5	18	24		J-10	UG/KG
131508	309707R1	SOIL	RTX-5	195+208	3.5		J-10	UG/KG
131508	309707R1	SOIL	RTX-5	207	1.0	BJ	U-7	UG/KG
131508	309707R1	SOIL	RTX-5	209	43	B	U-7	UG/KG
131508	309707R1	SOIL	RTX-5	3	10	B	U-7	UG/KG
131508	309707R1	SOIL	RTX-5	44	49		J-10	UG/KG
131508	309707R1	SOIL	RTX-5	52	110		J-10	UG/KG
131508	309707R1	SOIL	RTX-5	77+110	92		J-10	UG/KG
131508	309707R1	SOIL	RTX-5	82	5.1	B	U-7	UG/KG
131508	309707R1	SOIL	RTX-5	85	19		U-7	UG/KG
131508	309707R1	SOIL	RTX-5	87+115	32		U-7	UG/KG
131510	309708R1	SOIL	RTX-5	119	7.0		U-7	UG/KG
131510	309708R1	SOIL	RTX-5	126+129+178	9.4		J-10	UG/KG
131510	309708R1	SOIL	RTX-5	167	4.8		U-7	UG/KG
131510	309708R1	SOIL	RTX-5	170+190	16		U-7	UG/KG
131510	309708R1	SOIL	RTX-5	18	47		J-10	UG/KG
131510	309708R1	SOIL	RTX-5	195+208	2.5		J-10	UG/KG
131510	309708R1	SOIL	RTX-5	209	6.4	B	U-7	UG/KG
131510	309708R1	SOIL	RTX-5	44	90		J-10	UG/KG
131510	309708R1	SOIL	RTX-5	52	190		J-10	UG/K

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Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
131510	309708R1	SOIL	RTX-5	77+110	140		J-10	UG/KG
131510	309708R1	SOIL	RTX-5	82	8.9	B	U-7	UG/KG
131510	309708R1	SOIL	RTX-5	85	29		U-7	UG/KG
131510	309708R1	SOIL	RTX-5	87+115	50		U-7	UG/KG
131501	309709R1	SOIL	RTX-5	119	3.2		U-7	UG/KG
131501	309709R1	SOIL	RTX-5	126+129+178	3.8		J-10	UG/KG
131501	309709R1	SOIL	RTX-5	151	7.3	B	U-7	UG/KG
131501	309709R1	SOIL	RTX-5	167	2.4		U-7	UG/KG
131501	309709R1	SOIL	RTX-5	170+190	8.3		U-7	UG/KG
131501	309709R1	SOIL	RTX-5	18	15		J-10	UG/KG
131501	309709R1	SOIL	RTX-5	195+208	1.4	J	J-10	UG/KG
131501	309709R1	SOIL	RTX-5	209	1.4	BJ	U-7	UG/KG
131501	309709R1	SOIL	RTX-5	44	29		J-10	UG/KG
131501	309709R1	SOIL	RTX-5	52	64		J-10	UG/KG
131501	309709R1	SOIL	RTX-5	77+110	49		J-10	UG/KG
131501	309709R1	SOIL	RTX-5	82	3.1	B	U-7	UG/KG
131501	309709R1	SOIL	RTX-5	85	12		U-7	UG/KG
131501	309709R1	SOIL	RTX-5	87+115	18		U-7	UG/KG
139416	309710R1	SOIL	RTX-5	126+129+178	180		J-10	UG/KG
139416	309710R1	SOIL	RTX-5	18	480		J-10	UG/KG
139416	309710R1	SOIL	RTX-5	195+208	34		J-10	UG/KG
139416	309710R1	SOIL	RTX-5	207	4.0	BJ	U-7	UG/KG
139416	309710R1	SOIL	RTX-5	209	4.2	BJ	U-7	UG/KG
139416	309710R1	SOIL	RTX-5	44	2200	E	J-10	UG/KG
139416	309710R1	SOIL	RTX-5	52	4700	E	J-10	UG/KG
139416	309710R1	SOIL	RTX-5	7+9	20		U-7	UG/KG
139416	309710R1	SOIL	RTX-5	77+110	3800	E	J-10	UG/KG
139416DL	309710R1D1	SOIL	RTX-5	119	110	D	U-7	UG/KG
139416DL	309710R1D1	SOIL	RTX-5	122	76	D	U-7	UG/KG
139416DL	309710R1D1	SOIL	RTX-5	126+129+178	190	D	J-10	UG/KG
139416DL	309710R1D1	SOIL	RTX-5	167	96	D	U-7	UG/KG
139416DL	309710R1D1	SOIL	RTX-5	170+190	220	D	U-7	UG/KG
139416DL	309710R1D1	SOIL	RTX-5	18	550	D	J-10	UG/KG
139416DL	309710R1D1	SOIL	RTX-5	195+208	30	DJ	J-10	UG/KG
139416DL	309710R1D1	SOIL	RTX-5	44	2200	D	J-10	UG/KG
139416DL	309710R1D1	SOIL	RTX-5	52	4000	D	J-10	UG/KG
139416DL	309710R1D1	SOIL	RTX-5	77+110	3800	D	J-10	UG/KG
139416DL	309710R1D1	SOIL	RTX-5	85	1100	D	U-7	UG/KG
139416DL	309710R1D1	SOIL	RTX-5	87+115	1800	D	U-7	UG/KG
139404	309711R1	SOIL	RTX-5	126+129+178	44		J-10	UG/KG

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Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
139404	309711R1	SOIL	RTX-5	18	44		J-10	UG/KC
139404	309711R1	SOIL	RTX-5	195+208	8.9		J-10	UG/KG
139404	309711R1	SOIL	RTX-5	207	1.2	B	U-7	UG/KG
139404	309711R1	SOIL	RTX-5	209	10	B	U-7	UG/KG
139404	309711R1	SOIL	RTX-5	44	180	E	J-10	UG/KG
139404	309711R1	SOIL	RTX-5	52	480	E	J-10	UG/KG
139404	309711R1	SOIL	RTX-5	7+9	4.2		U-7	UG/KG
139404	309711R1	SOIL	RTX-5	77+110	750	E	J-10	UG/KG
139404DL	309711R1D1	SOIL	RTX-5	119	27	D	U-7	UG/KG
139404DL	309711R1D1	SOIL	RTX-5	122	18	D	U-7	UG/KG
139404DL	309711R1D1	SOIL	RTX-5	126+129+178	44	D	J-10	UG/KG
139404DL	309711R1D1	SOIL	RTX-5	167	28	D	U-7	UG/KG
139404DL	309711R1D1	SOIL	RTX-5	170+190	63	D	U-7	UG/KG
139404DL	309711R1D1	SOIL	RTX-5	18	50	D	J-10	UG/KG
139404DL	309711R1D1	SOIL	RTX-5	185+208	8.2	DJ	J-10	UG/KG
139404DL	309711R1D1	SOIL	RTX-5	209	11	DB	U-7	UG/KG
139404DL	309711R1D1	SOIL	RTX-5	44	190	D	J-10	UG/KG
139404DL	309711R1D1	SOIL	RTX-5	52	440	D	J-10	UG/KG
139404DL	309711R1D1	SOIL	RTX-5	77+110	720	D	J-10	UG/KG
139404DL	309711R1D1	SOIL	RTX-5	85	260	D	U-7	UG/KG
139404DL	309711R1D1	SOIL	RTX-5	87+115	360	D	U-7	UG/KC
139401	309712R1	SOIL	RTX-5	119	10		U-7	UG/KG
139401	309712R1	SOIL	RTX-5	122	11		U-7	UG/KG
139401	309712R1	SOIL	RTX-5	126+129+178	22		J-10	UG/KG
139401	309712R1	SOIL	RTX-5	18	68		J-10	UG/KG
139401	309712R1	SOIL	RTX-5	195+208	3.1		J-10	UG/KG
139401	309712R1	SOIL	RTX-5	209	1.4	BJ	U-7	UG/KG
139401	309712R1	SOIL	RTX-5	44	330	E	J-10	UG/KG
139401	309712R1	SOIL	RTX-5	52	590	E	J-10	UG/KG
139401	309712R1	SOIL	RTX-5	7+9	4.8		U-7	UG/KG
139401	309712R1	SOIL	RTX-5	77+110	500	E	J-10	UG/KG
139401DL	309712R1D1	SOIL	RTX-5	126+129+178	26	U	UJ-10	UG/KG
139401DL	309712R1D1	SOIL	RTX-5	151	23	DBJ	U-7	UG/KG
139401DL	309712R1D1	SOIL	RTX-5	170+190	23	DJ	U-7	UG/KG
139401DL	309712R1D1	SOIL	RTX-5	18	70	D	J-10	UG/KG
139401DL	309712R1D1	SOIL	RTX-5	44	360	D	J-10	UG/KG
139401DL	309712R1D1	SOIL	RTX-5	52	600	D	J-10	UG/KG
139401DL	309712R1D1	SOIL	RTX-5	77+110	640	D	J-10	UG/KG
139401DL	309712R1D1	SOIL	RTX-5	82	82	DB	U-7	UG/KG
139401DL	309712R1D1	SOIL	RTX-5	85	150	D	U-7	UG/KG

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Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
139401DL	309712R1D1	SOIL	RTX-5	87+115	250	D	U-7	UG/KG
139410	309713R1	SOIL	RTX-5	126+129+178	54		J-10	UG/KG
139410	309713R1	SOIL	RTX-5	18	95		J-10	UG/KG
139410	309713R1	SOIL	RTX-5	195+208	11		J-10	UG/KG
139410	309713R1	SOIL	RTX-5	207	1.3	BJ	U-7	UG/KG
139410	309713R1	SOIL	RTX-5	209	5.2	B	U-7	UG/KG
139410	309713R1	SOIL	RTX-5	44	560	E	J-10	UG/KG
139410	309713R1	SOIL	RTX-5	52	1100	E	J-10	UG/KG
139410	309713R1	SOIL	RTX-5	7+9	3.8		U-7	UG/KG
139410	309713R1	SOIL	RTX-5	77+110	1100	E	J-10	UG/KG
139410DL	309713R1D1	SOIL	RTX-5	119	24	DJ	U-7	UG/KG
139410DL	309713R1D1	SOIL	RTX-5	122	22	DJ	U-7	UG/KG
139410DL	309713R1D1	SOIL	RTX-5	126+129+178	47	D	J-10	UG/KG
139410DL	309713R1D1	SOIL	RTX-5	151	62	DB	U-7	UG/KG
139410DL	309713R1D1	SOIL	RTX-5	167	28	D	U-7	UG/KG
139410DL	309713R1D1	SOIL	RTX-5	170+190	63	D	U-7	UG/KG
139410DL	309713R1D1	SOIL	RTX-5	18	100	D	J-10	UG/KG
139410DL	309713R1D1	SOIL	RTX-5	44	590	D	J-10	UG/KG
139410DL	309713R1D1	SOIL	RTX-5	52	1000	D	J-10	UG/KG
139410DL	309713R1D1	SOIL	RTX-5	77+110	1100	D	J-10	UG/KG
139410DL	309713R1D1	SOIL	RTX-5	85	300	D	U-7	UG/KG
139410DL	309713R1D1	SOIL	RTX-5	87+115	510	D	U-7	UG/KG
139418	309714R1	SOIL	RTX-5	126+129+178	9.6		J-10	UG/KG
139418	309714R1	SOIL	RTX-5	18	64	E	J-10	UG/KG
139418	309714R1	SOIL	RTX-5	195+208	1.6		J-10	UG/KG
139418	309714R1	SOIL	RTX-5	207	0.28	BJ	U-7	UG/KG
139418	309714R1	SOIL	RTX-5	209	1.8	B	U-7	UG/KG
139418	309714R1	SOIL	RTX-5	3	5.0	B	U-7	UG/KG
139418	309714R1	SOIL	RTX-5	44	96	E	J-10	UG/KG
139418	309714R1	SOIL	RTX-5	52	220	E	J-10	UG/KG
139418	309714R1	SOIL	RTX-5	77+110	160	E	J-10	UG/KG
139418DL	309714R1D1	SOIL	RTX-5	119	5.1	DJ	U-7	UG/KG
139418DL	309714R1D1	SOIL	RTX-5	122	4.3	DJ	U-7	UG/KG
139418DL	309714R1D1	SOIL	RTX-5	126+129+178	8.2	D	J-10	UG/KG
139418DL	309714R1D1	SOIL	RTX-5	151	11	DB	U-7	UG/KG
139418DL	309714R1D1	SOIL	RTX-5	167	6.6	DJ	U-7	UG/KG
139418DL	309714R1D1	SOIL	RTX-5	170+190	13	D	U-7	UG/KG
139418DL	309714R1D1	SOIL	RTX-5	18	77	D	J-10	UG/KG
139418DL	309714R1D1	SOIL	RTX-5	44	110	D	J-10	UG/KG
139418DL	309714R1D1	SOIL	RTX-5	52	230	D	J-10	UG/KG

DATA QUALIFIER SUMMARY TABLE

6311-43

SDG: 62004

Field ID	Lab ID	Matrix	Column	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
139418DL	309714R1D1	SOIL	RTX-5	7+9	5.4	DJ	U-7	UG/KG
139418DL	309714R1D1	SOIL	RTX-5	77+110	190	D	J-10	UG/KG
139418DL	309714R1D1	SOIL	RTX-5	82	30	DB	U-7	UG/KG
139418DL	309714R1D1	SOIL	RTX-5	85	58	D	U-7	UG/KG
139418DL	309714R1D1	SOIL	RTX-5	87+115	91	D	U-7	UG/KG

APPENDIX D

Composition and Concentration Profiles for 107 Congeners

COMPOSITION AND CONCENTRATION PROFILES FOR 107 CONGENERS

The graphs on the following pages represent the concentration of polychlorinated biphenyls (PCB) congeners measured in each of the 120 fish samples. There were 107 congeners measured for each sample. The congeners, the number of chlorine atoms attached to the ring structure, and the location of the chlorine atoms are shown in Table D-1. The graphed results are grouped by species, location, age, season, and sex. The graph on the upper portion of each page shows the results on a logarithmic scale. The lower graph shows the same findings on a linear scale. To allow the reader to make comparisons between fish groups, the scales have been standardized as much as possible. Most logarithmic plots were made with a scale ranging from 0.1 - 100 parts per million (ppm); two plots required a scale of 0.1 - 1000 ppm. Data below 0.1 ppm were not plotted. Five linear concentration scales were used (0-10 ppm, 0-25 ppm, 0-50 ppm, 0-100 ppm, and 0-500 ppm) because of the variation in concentrations among groups. Scale guides appear to the left of each linear graph to serve as a visual cue to the changing linear scales. The scale guide shows a 0-500 ppm standard scale; the shaded area gives a visual sense of the degree to which this scale is magnified in each figure. The shaded area begins on the left with the portion of the entire 0-500 ppm scale which has been magnified. The steeper the slope between that portion and the y-axis of the plot, the greater the degree of magnification. The graph legends indicate fish species as follows: YP = yellow perch; WP = white perch; LMB = large mouth bass; STB = striped bass. Fish replicates are indicated by a number representing the river mile and a letter for the replicate ("a" is the first replicate, "b" is the second replicate, etc.).

**Table D-1. Analyzed polychlorinated biphenyls (PCBs)
and their associated structure**

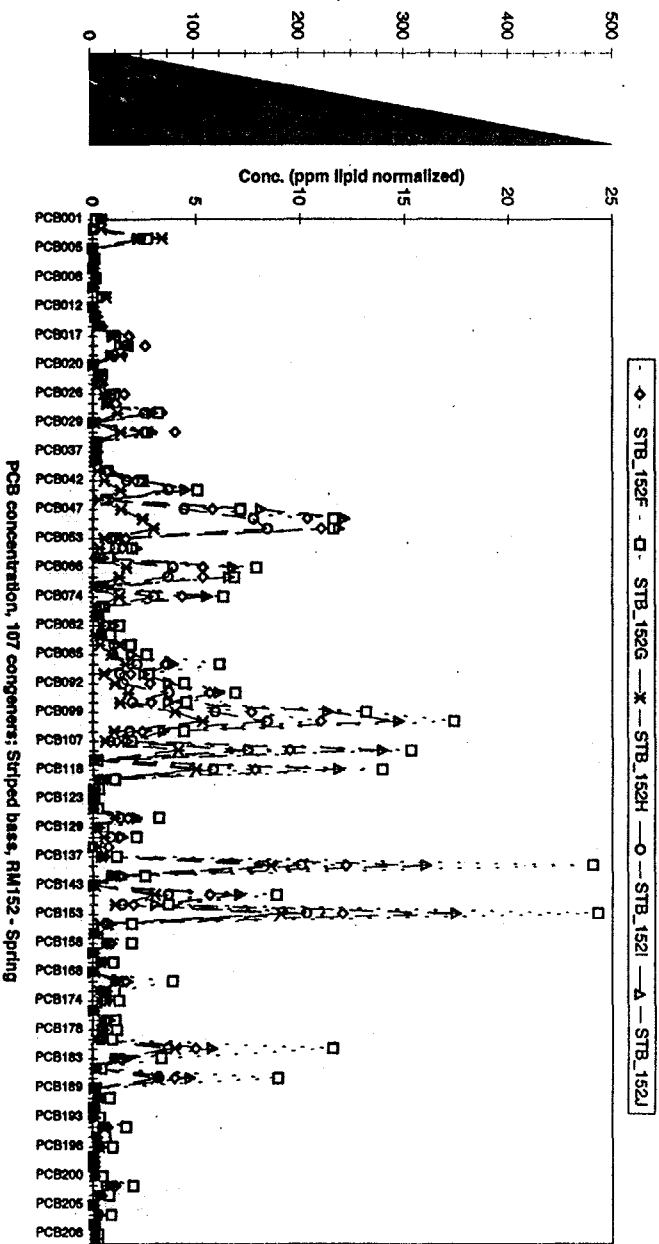
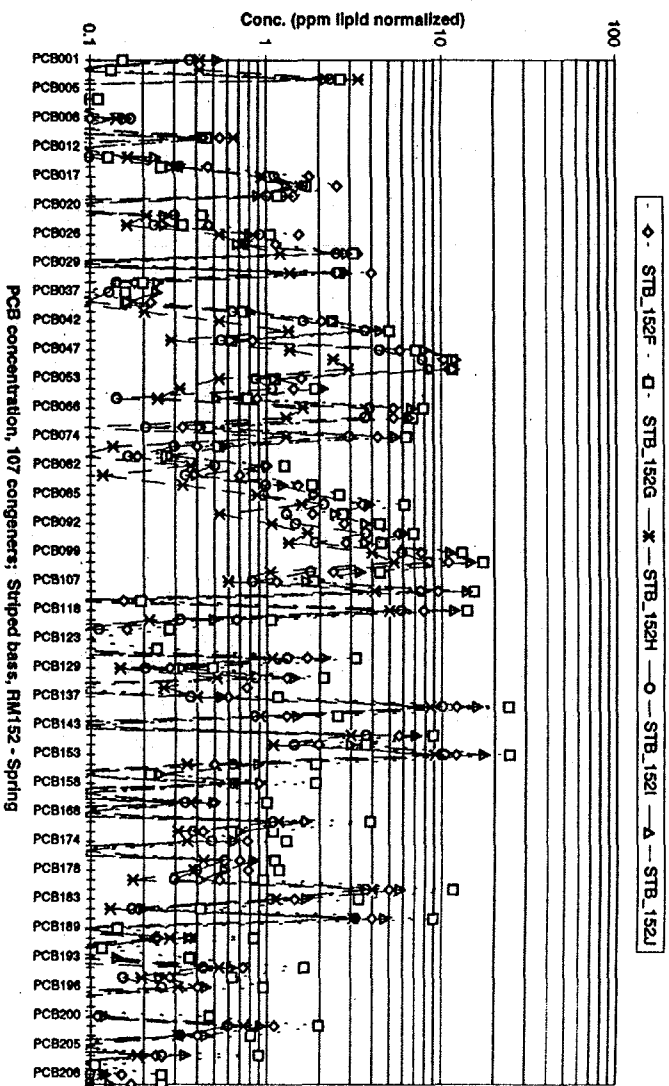
PCB CONGENER	NO. OF CHLORINE ATOMS	STRUCTURE
PCB001	0	2
PCB003	1	4
PCB004	2	2,2'
PCB005	2	2,3
PCB006	2	2,3'
PCB007	2	2,4
PCB008	2	2,4'
PCB009	2	2,5
PCB010	2	2,6
PCB012	2	3,4
PCB015	2	4,4'
PCB016	3	2,2',3
PCB017	3	2,2',4
PCB018	3	2,2',5
PCB019	3	2,2',6
PCB020	3	2,3,3'
PCB022	3	2,3,4'
PCB025	3	2,3',4
PCB026	3	2,3',5
PCB027	3	2,3',6
PCB028	3	2,4,4'
PCB029	3	2,4,5
PCB031	3	2,4',5
PCB033	3	2',3,4
PCB037	3	3,4,4'
PCB040	4	2,2',3,3'
PCB041	4	2,2',3,4
PCB042	4	2,2',3,4'
PCB044	4	2,2',3,5'
PCB045	4	2,2',3,6
PCB047	4	2,2',4,4'
PCB049	4	2,2',4,5'
PCB052	4	2,2',5,5'
PCB053	4	2,2',5,6'
PCB056	4	2,3,3',4'
PCB059	4	2,3,3',6
PCB066	4	2,3',4,4'
PCB070	4	2,3',4',5
PCB072	4	2,3',5,5'
PCB074	4	2,4,4',5
PCB075	4	2,4,4',6
PCB077	4	3,3',4,4'
PCB082	5	2,2',3,3',4

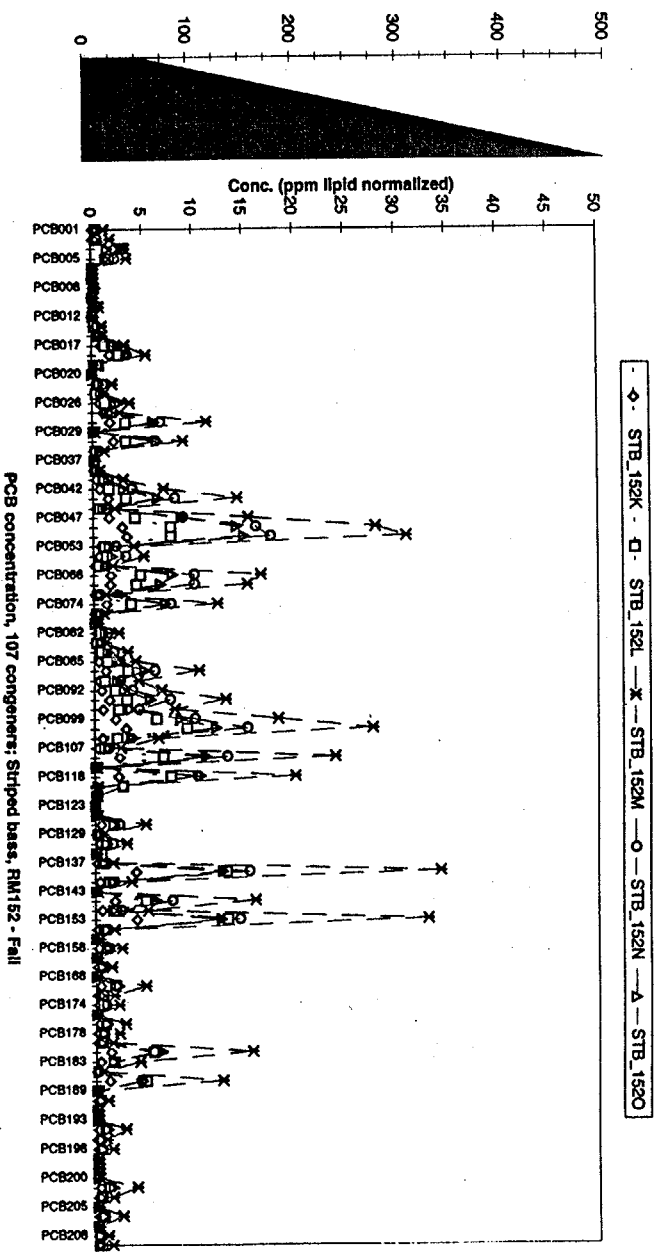
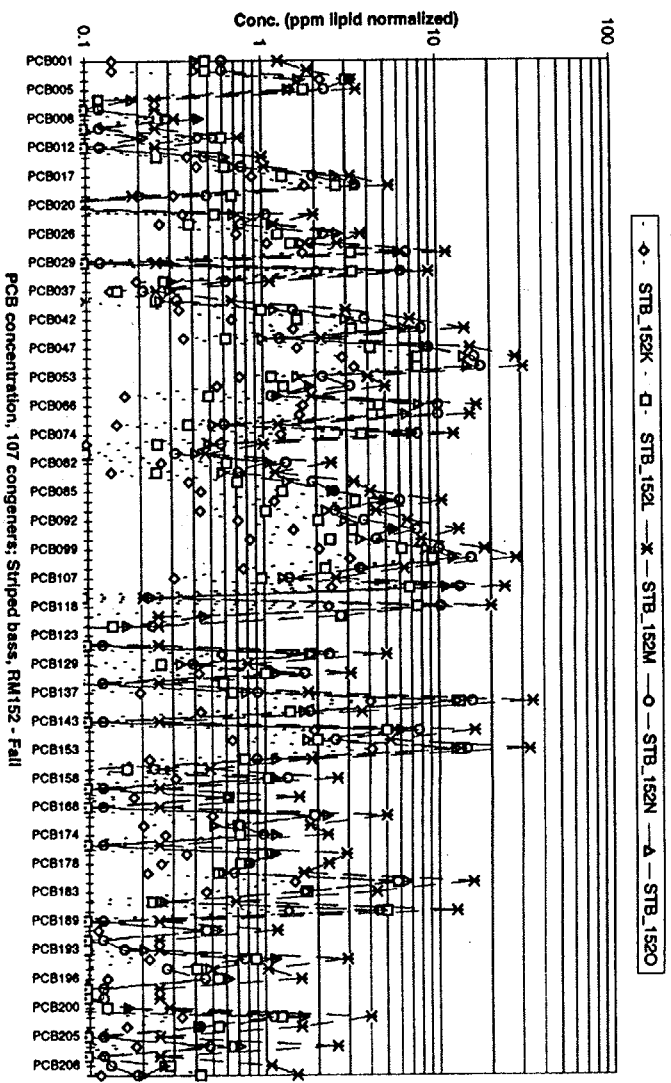
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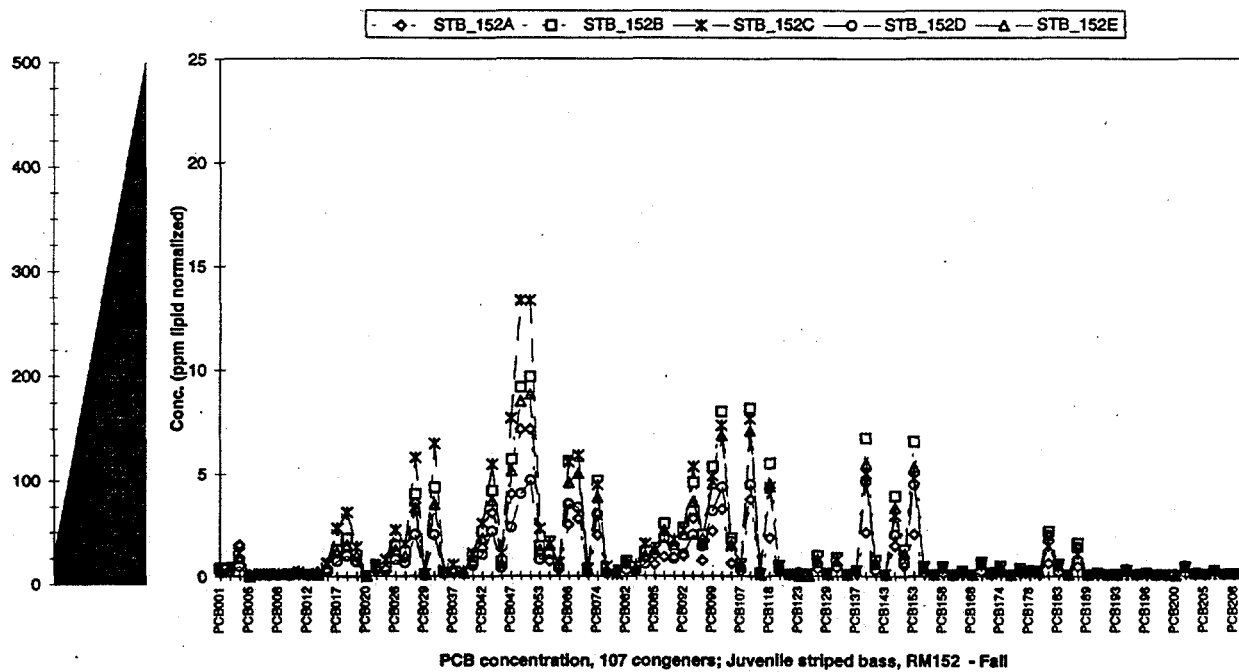
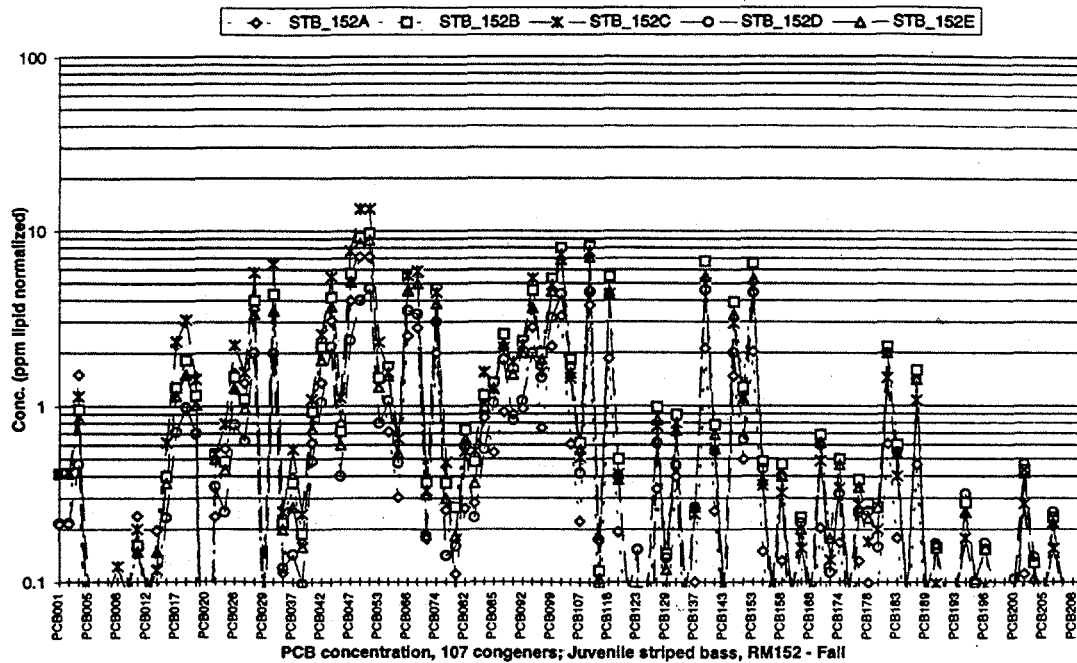
PCB CONGENER	NO. OF CHLORINE ATOMS	STRUCTURE
PCB083	5	2,2',3,3',5
PCB084	5	2,2',3,3',6
PCB085	5	2,2',3,4,4'
PCB087	5	2,2',3,4,5'
PCB091	5	2,2',3,4',6
PCB092	5	2,2',3,5,5'
PCB095	5	2,2',3,5',6
PCB097	5	2,2',3',4,5
PCB099	5	2,2',4,4',5
PCB101	5	2,2',4,5,5'
PCB105	5	2,3,3',4,4'
PCB107	5	2,3,3',4',5
PCB110	5	2,3,3',4',6
PCB115	5	2,3,4,4',6
PCB118	5	2,3',4,4',5
PCB119	5	2,3',4,4',6
PCB122	5	2',3,3',4,5
PCB123	5	2',3,4,4',5
PCB126	5	3,3',4,4',5
PCB128	6	2,2',3,3',4,4'
PCB129	6	2,2',3,3',4,5
PCB135	6	2,2',3,3',5,6'
PCB136	6	2,2',3,3',6,6'
PCB137	6	2,2',3,4,4',5
PCB138	6	2,2',3,4,4',5'
PCB141	6	2,2',3,4,5,5'
PCB143	6	2,2',3,4,5,6'
PCB149	6	2,2',3,4',5',6
PCB151	6	2,2',3,5,5',6
PCB153	6	2,2',4,4',5,5'
PCB156	6	2,3,3',4,4',5
PCB157	6	2,3,3',4,4',5'
PCB158	6	2,3,3',4,4',6
PCB165	6	2,3,3',5,5',6
PCB167	6	2,3',4,4',5,5'
PCB168	6	2,3',4,4',5',6
PCB170	7	2,2',3,3',4,4',5
PCB171	7	2,2',3,3',4,4',6
PCB174	7	2,2',3,3',4,5,6'
PCB176	7	2,2',3,3',4,6,6'
PCB177	7	2,2',3,3',4',5,6
PCB178	7	2,2',3,3',5,5',6
PCB179	7	2,2',3,3',5,6,6'
PCB180	7	2,2',3,4,4',5,5'
PCB183	7	2,2',3,4,4',5',6

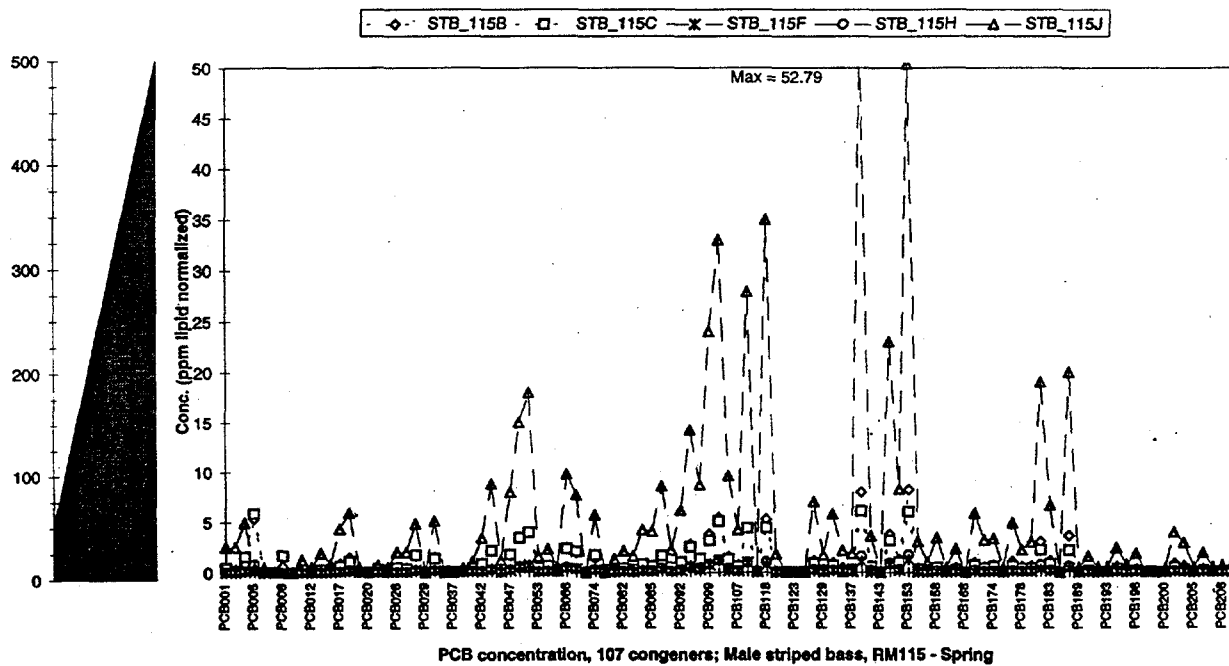
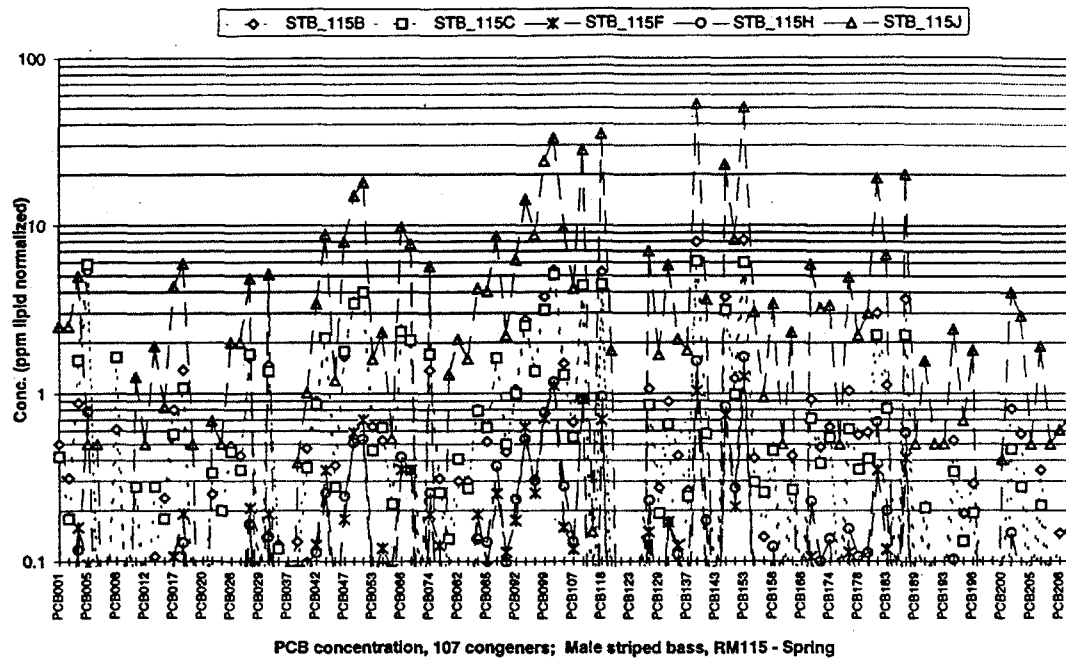
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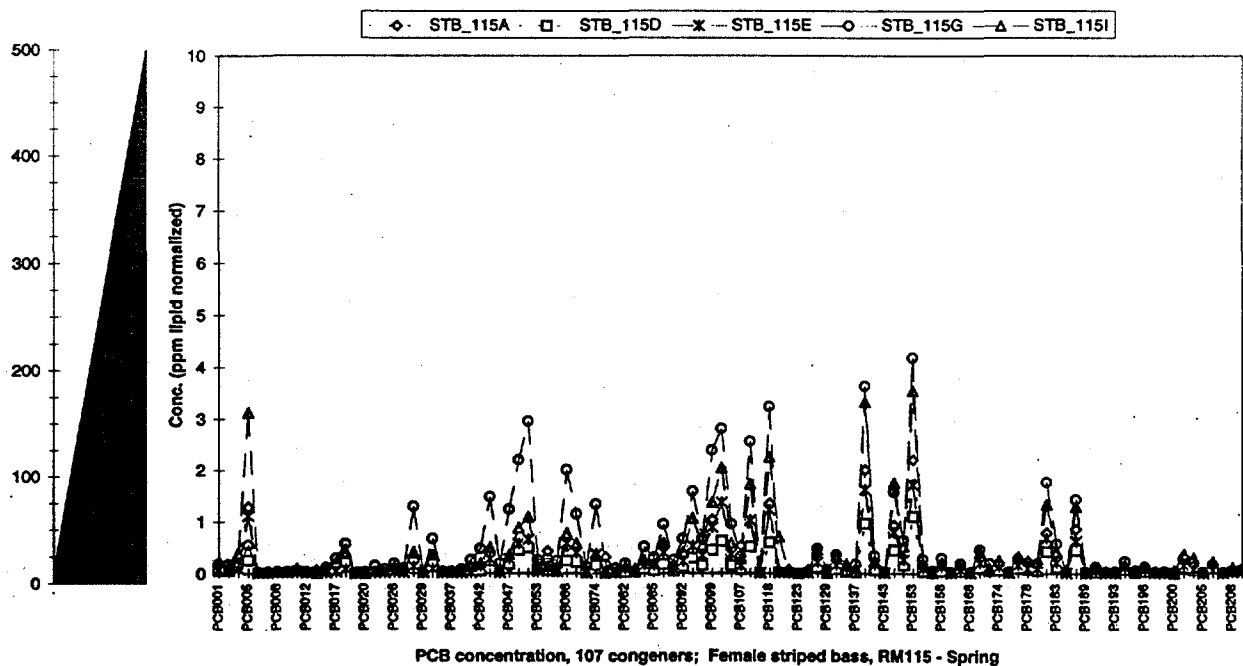
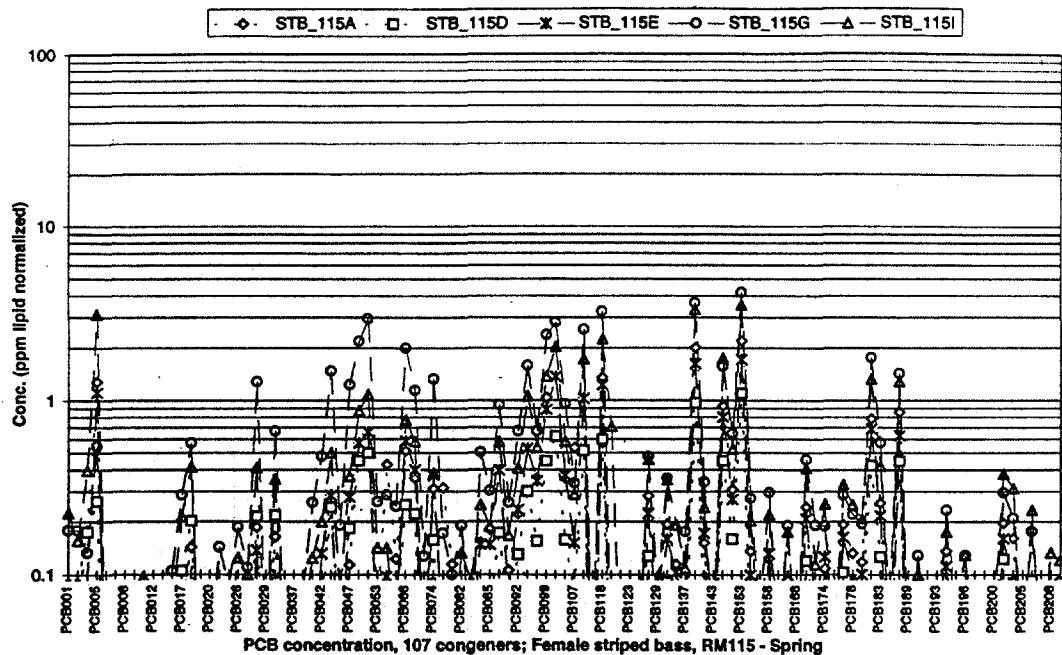
PCB CONGENER	NO. OF CHLORINE ATOMS	STRUCTURE
PCB185	7	2,2',3,4,5,5',6
PCB187	7	2,2',3,4',5,5',6
PCB189	7	2,3,3',4,4',5,5'
PCB190	7	2,3,3',4,4',5,6
PCB191	7	2,3,3',4,4',5',6
PCB193	7	2,3,3',4',5,5',6
PCB194	8	2,2',3,3',4,4',5,5'
PCB195	8	2,2',3,3',4,4',5,6
PCB196	8	2,2',3,3',4,4',5',6
PCB198	8	2,2',3,3',4,5,5',6
PCB199	8	2,2',3,3',4,5,6,6'
PCB200	8	2,2',3,3',4,5',6,6'
PCB201	8	2,2',3,3',4',5,5',6
PCB202	8	2,2',3,3',5,5',6,6'
PCB205	8	2,3,3',4,4',5,5',6
PCB206	9	2,2',3,3',4,4',5,5',6
PCB207	9	2,2',3,3',4,4',5,6,6'
PCB208	9	2,2',3,3',4,5,5',6,6'
PCB209	10	2,2',3,3',4,4',5,5',6,6'

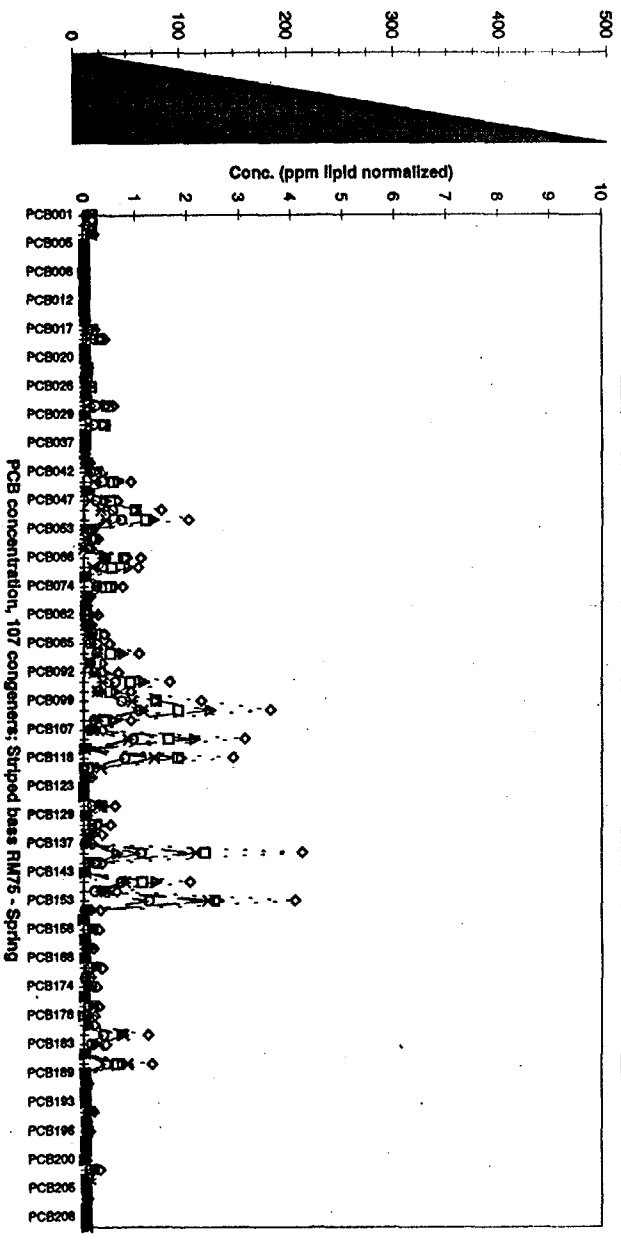
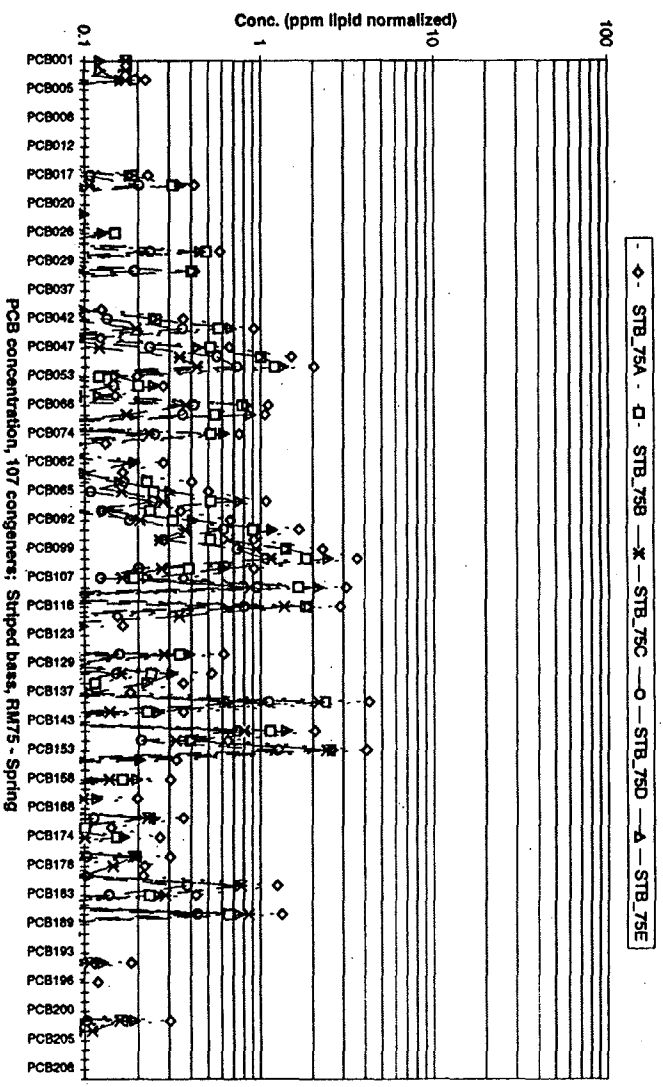


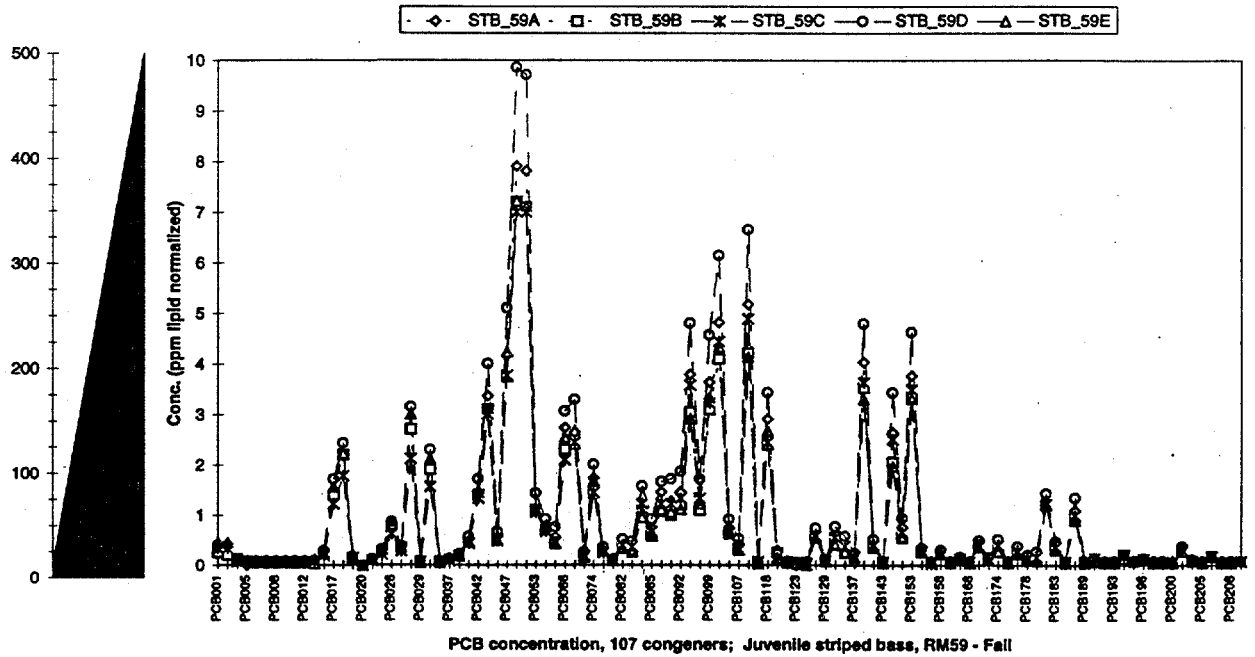
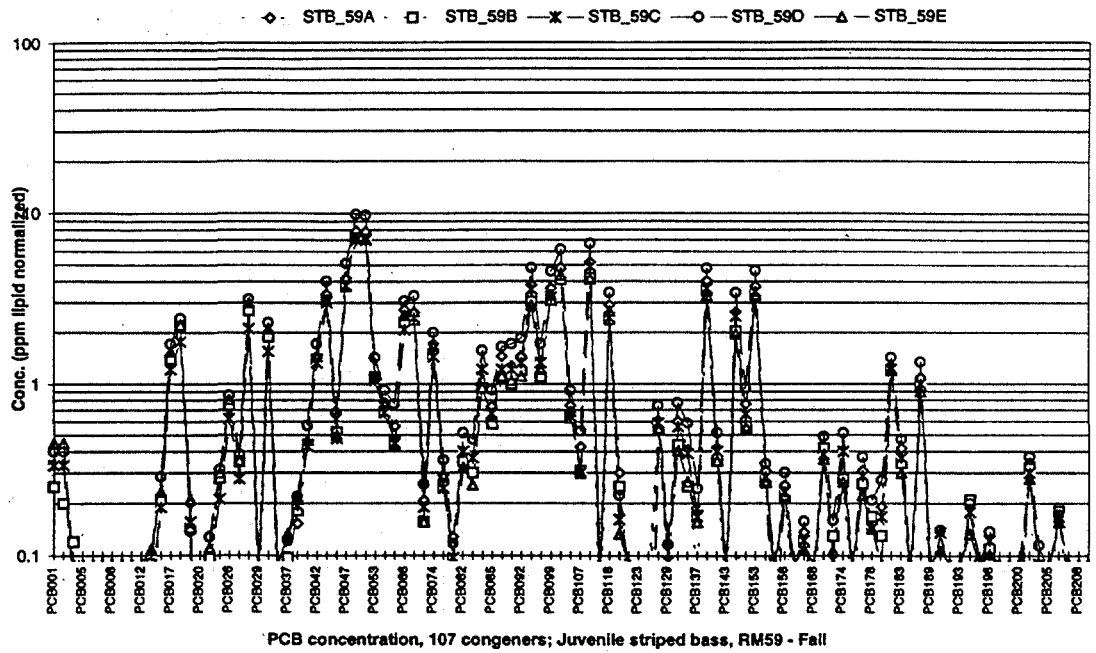




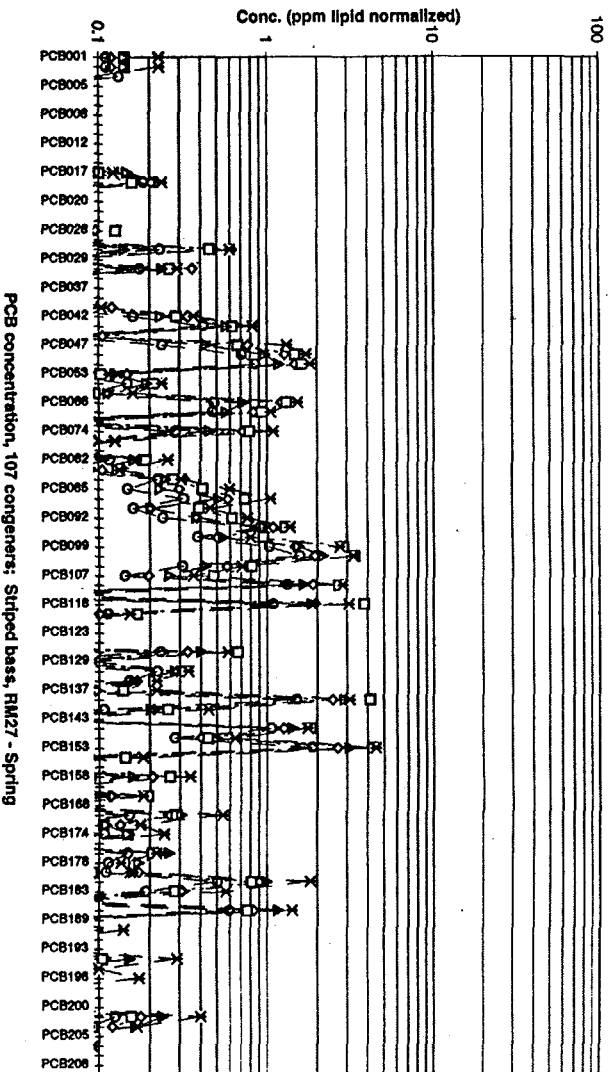




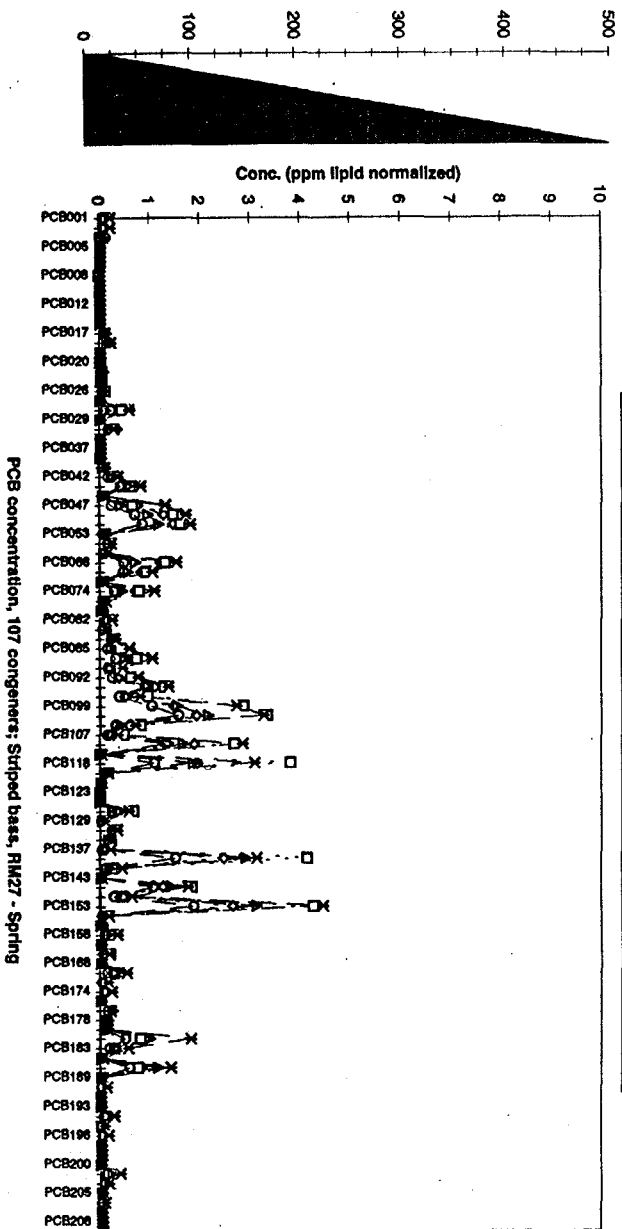


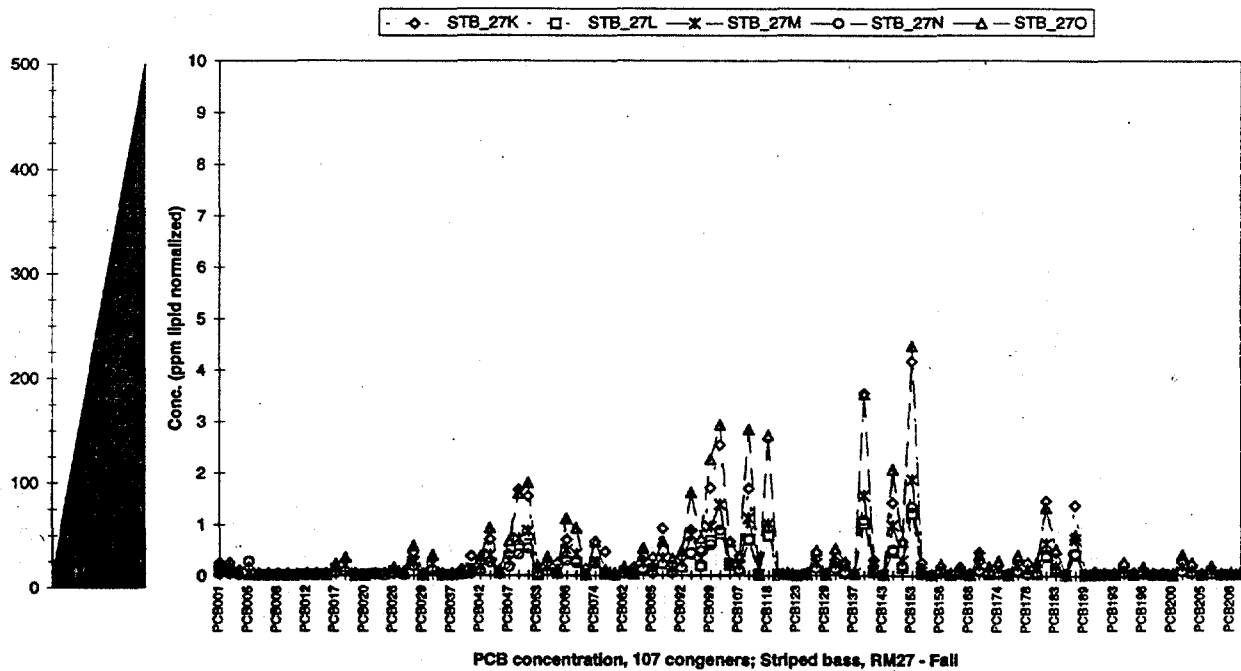
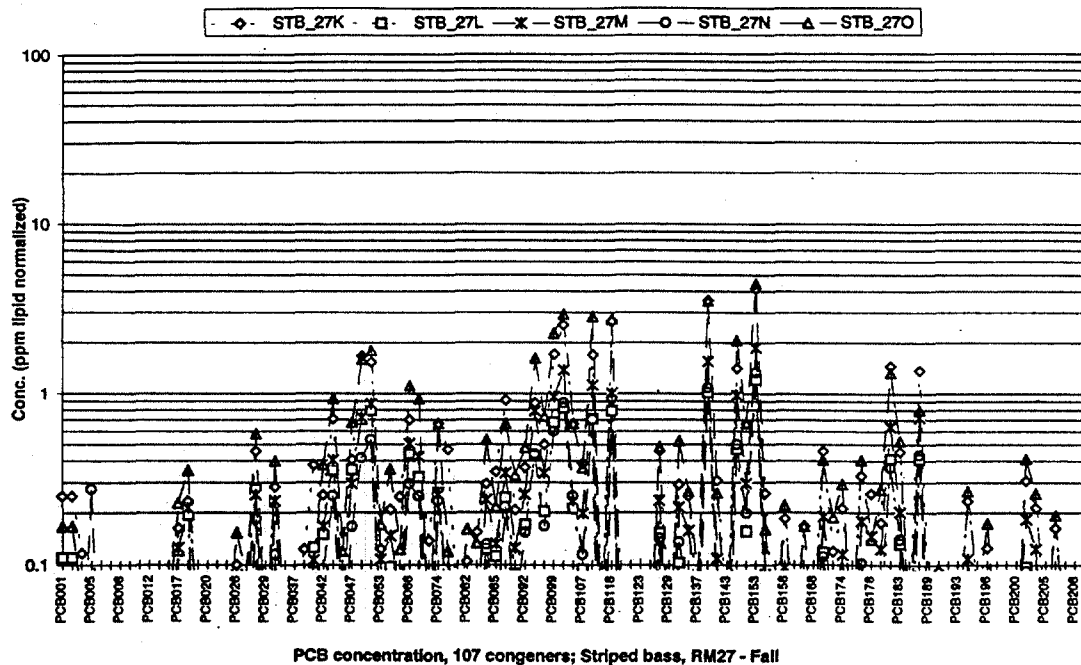


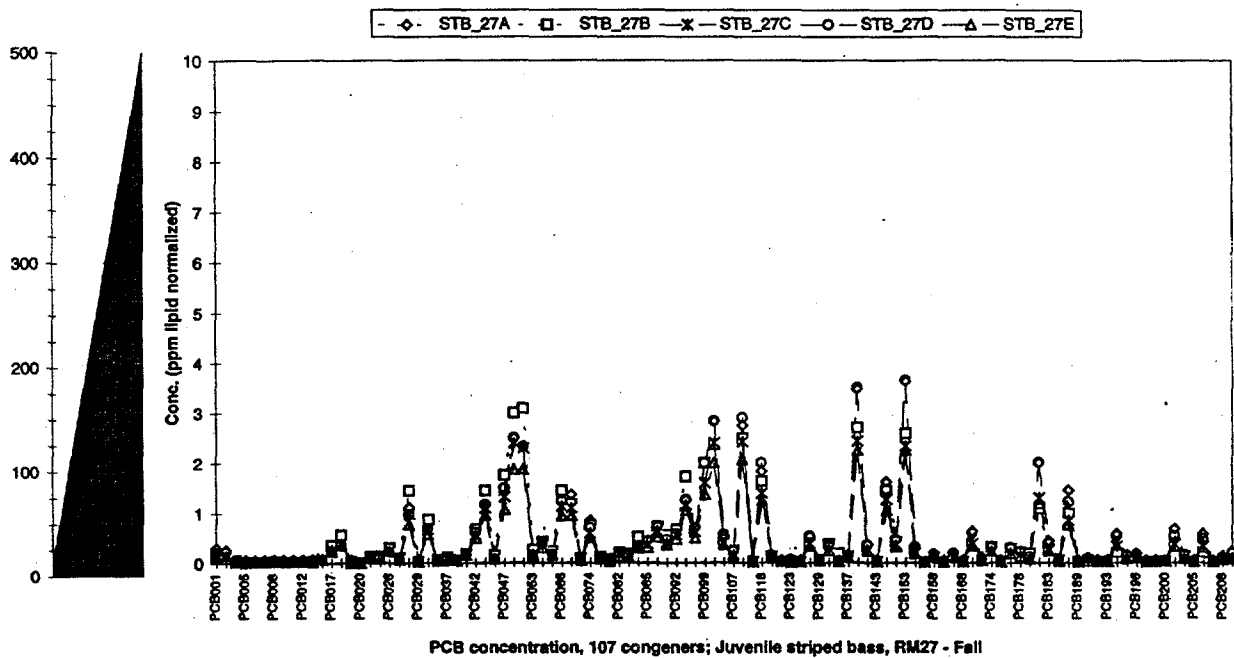
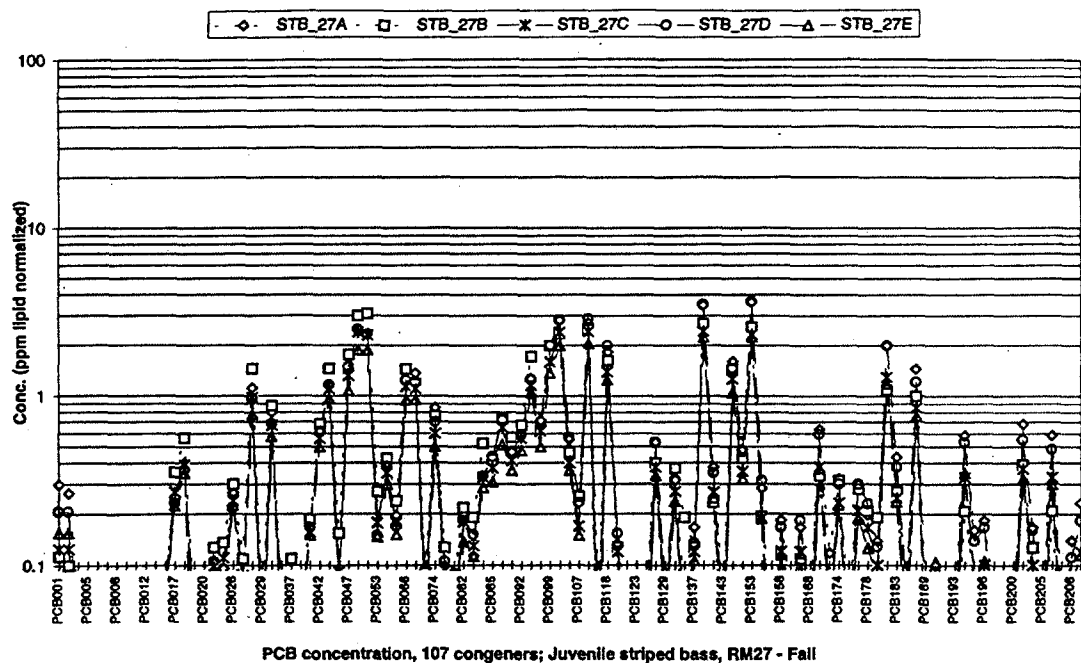
◆ STB_27F · □ STB_27G —×— STB_27H —○— STB_27I —▲— STB_27J

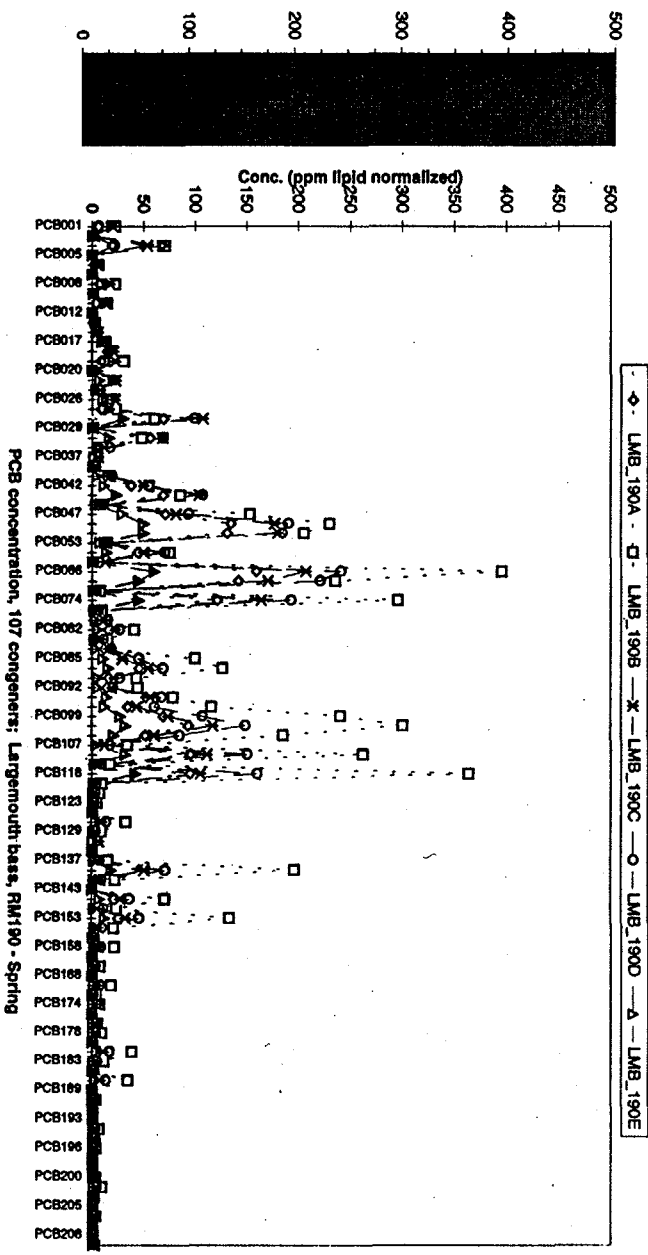
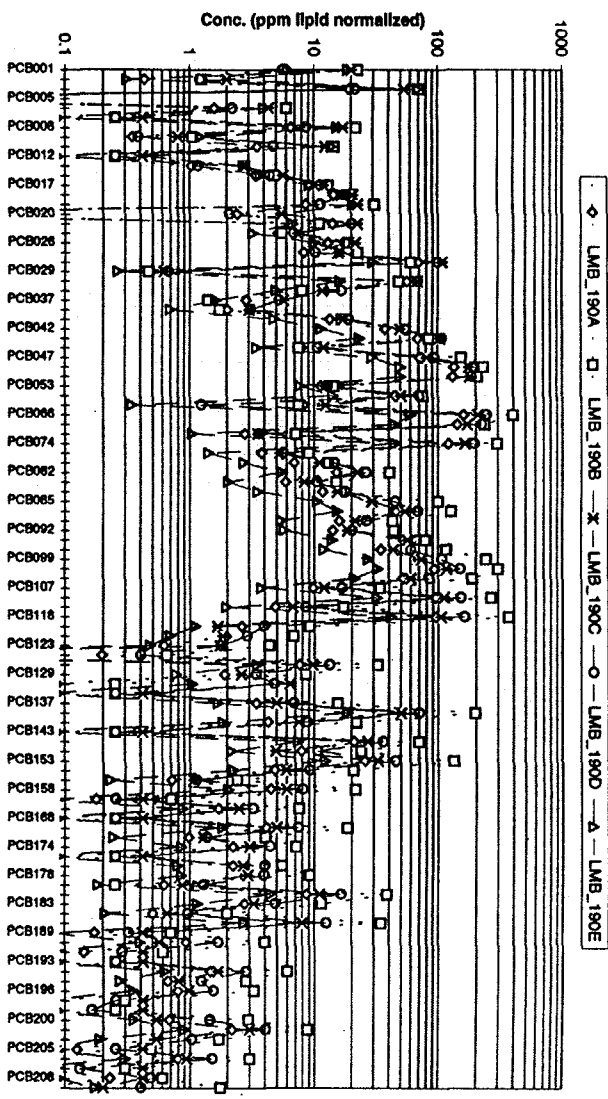


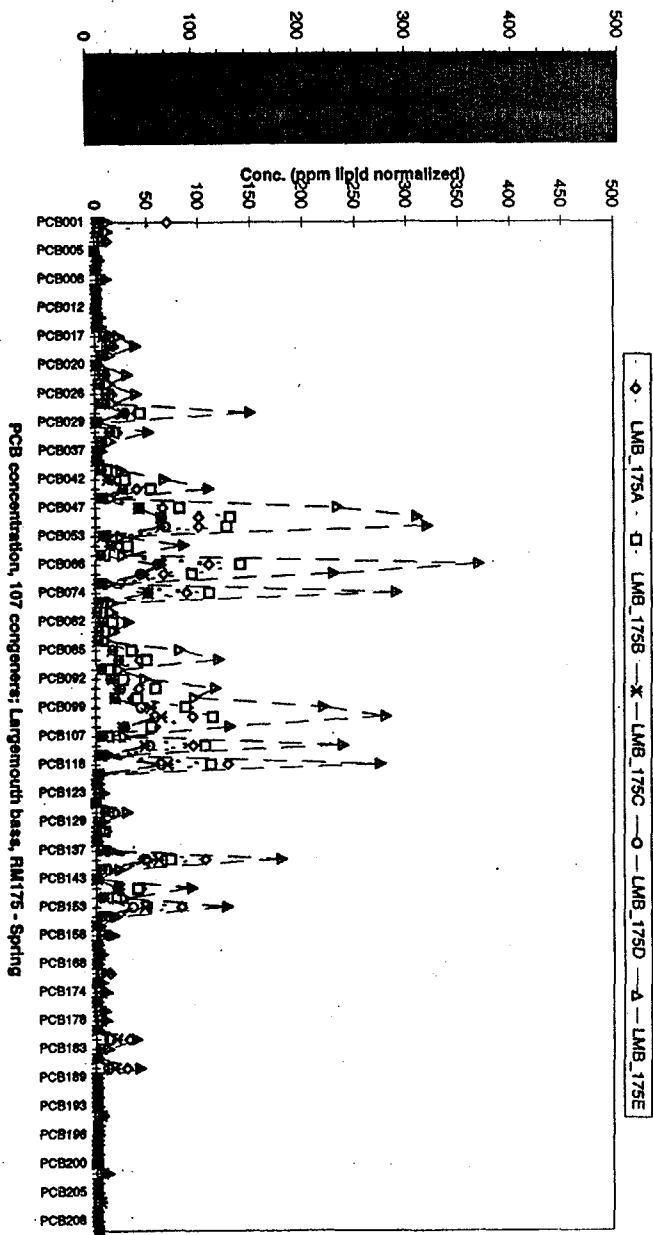
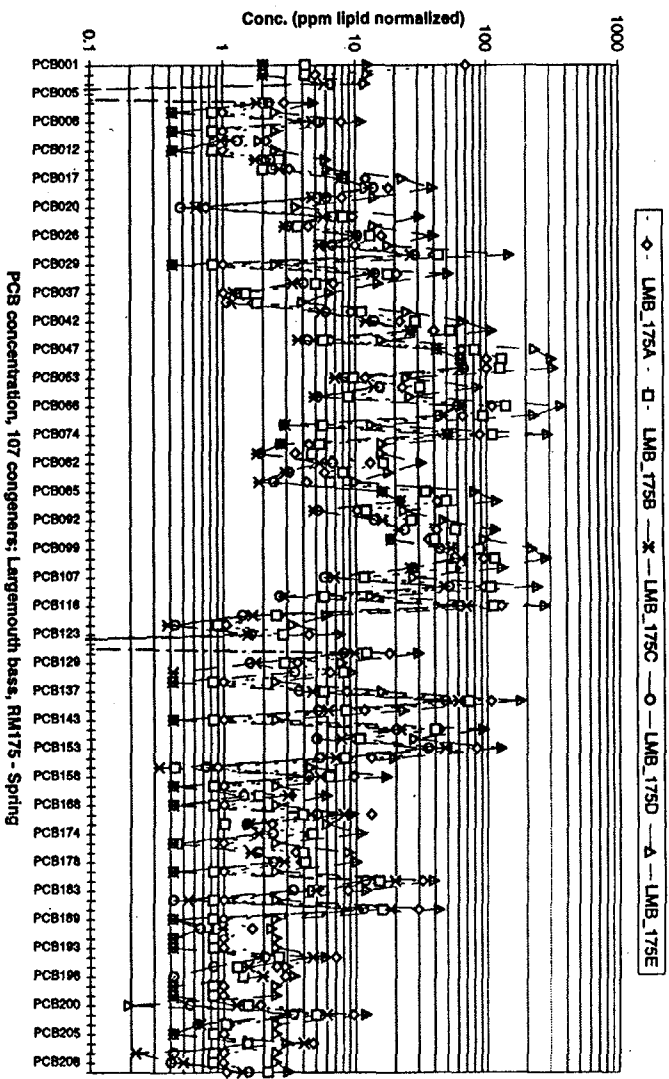
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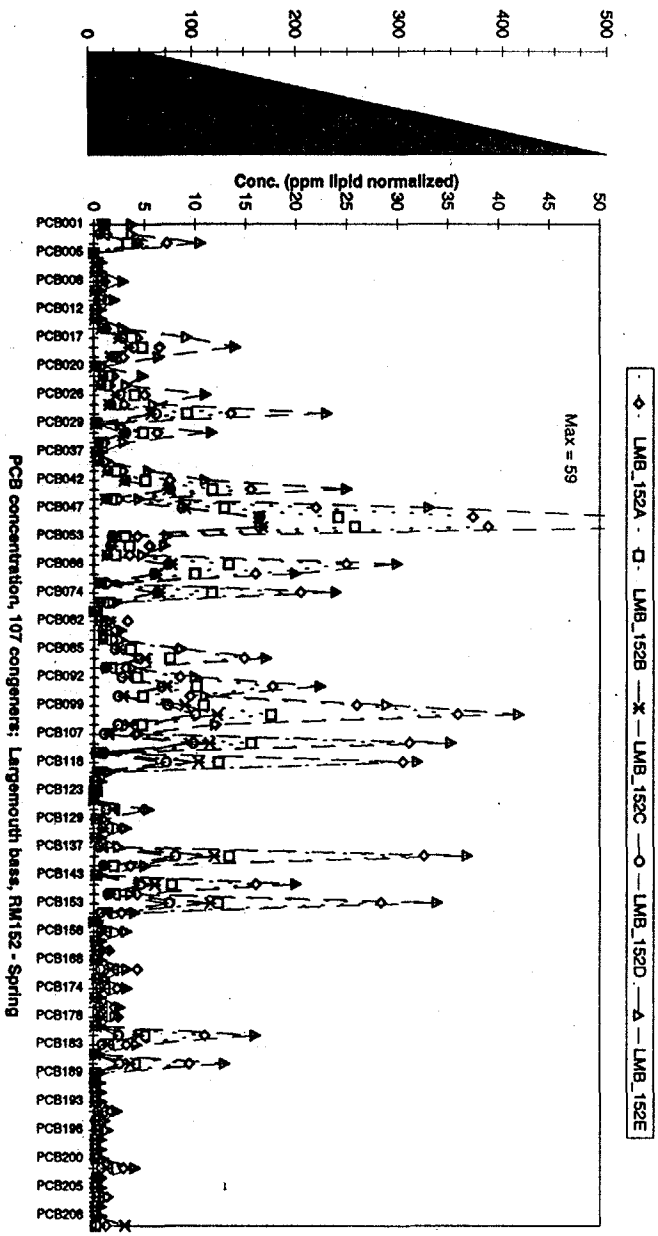
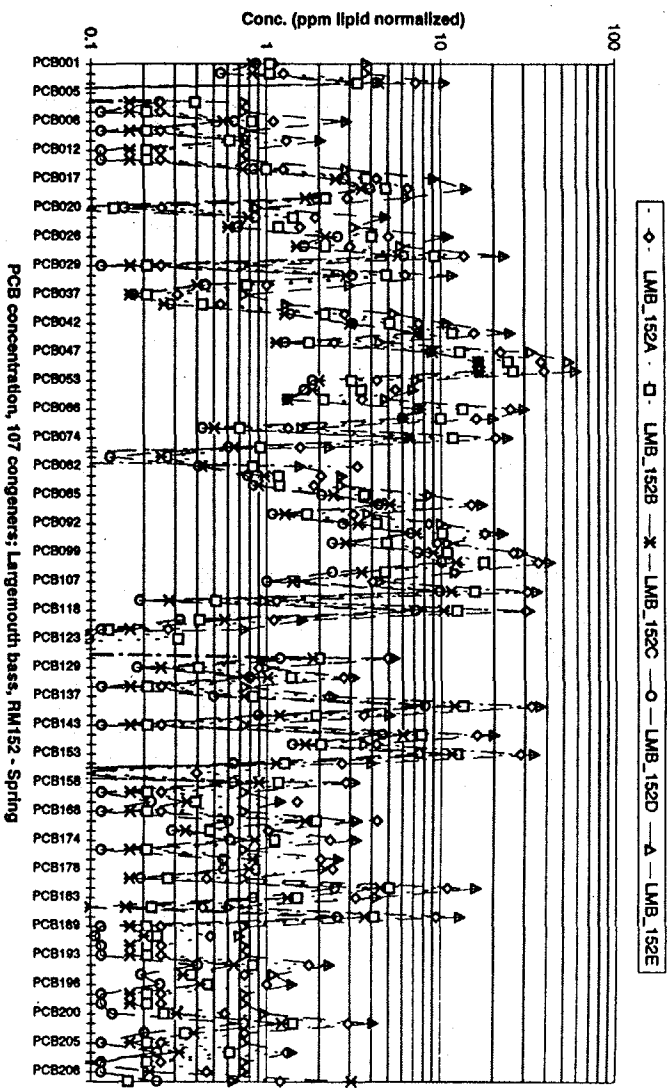


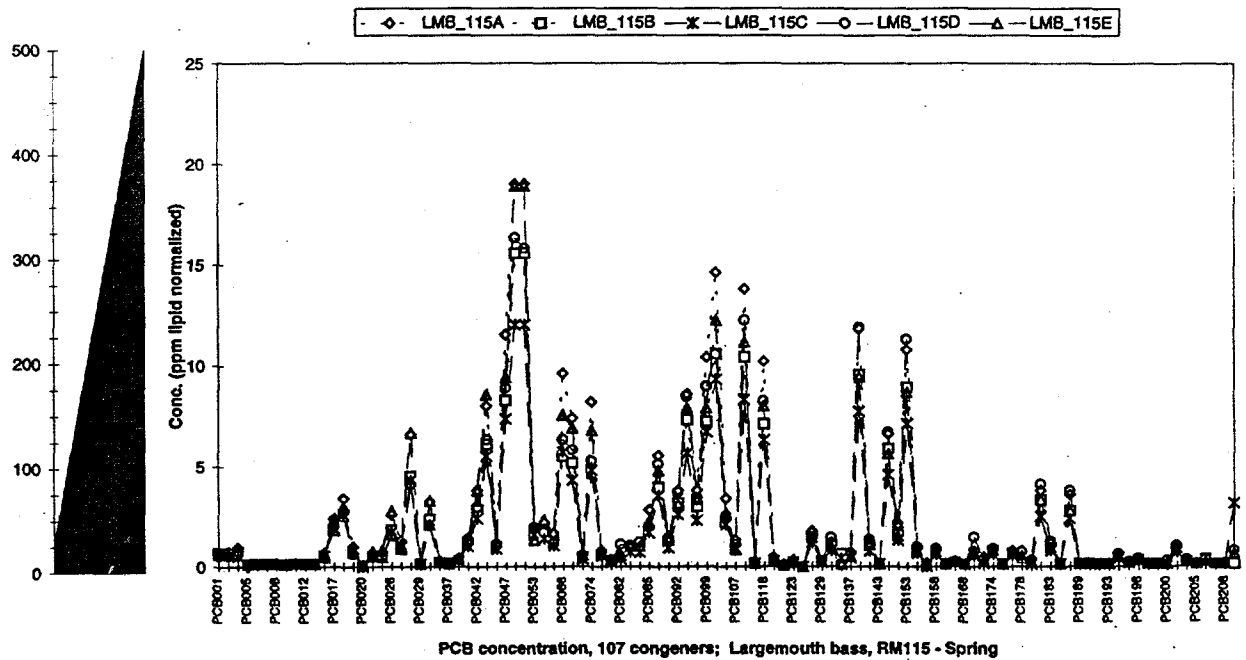
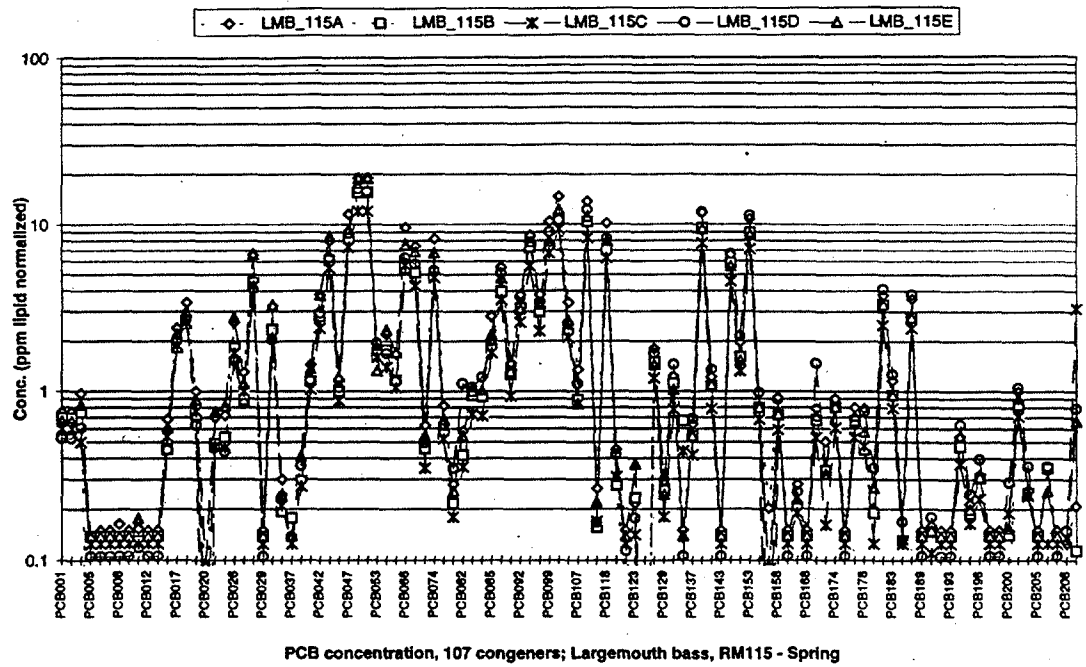


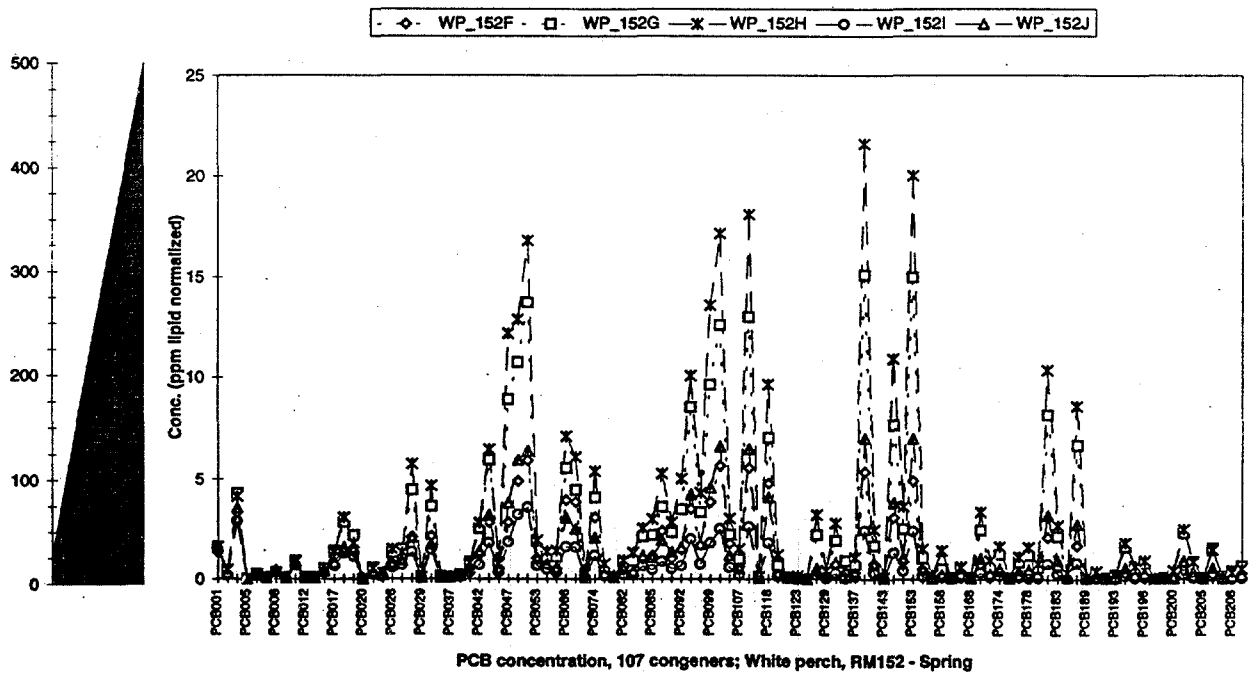
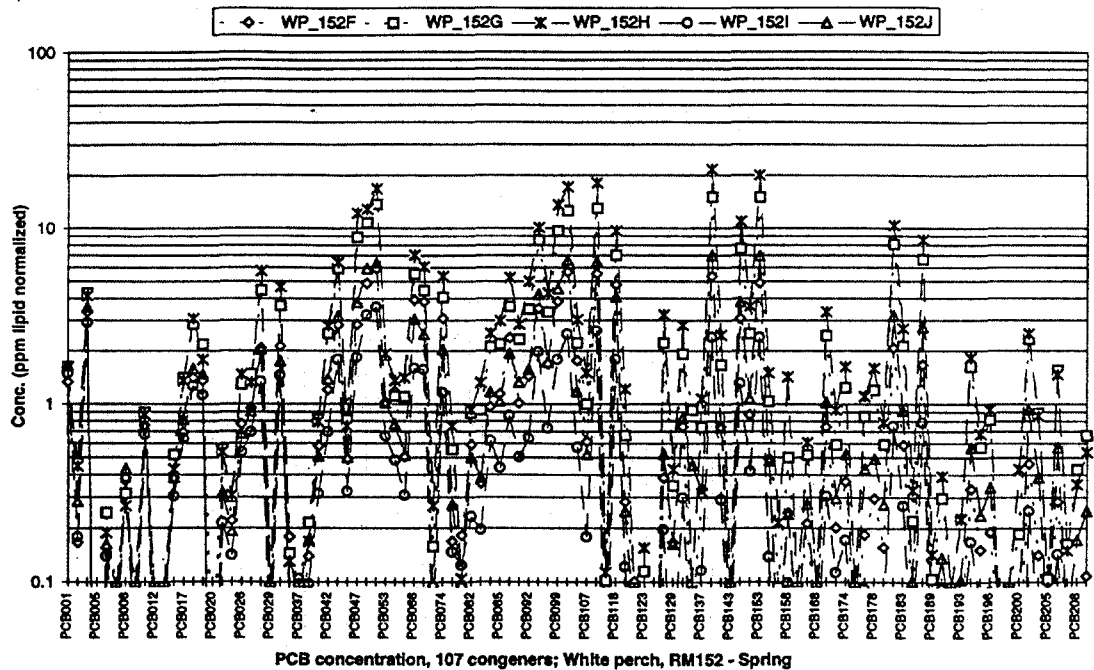


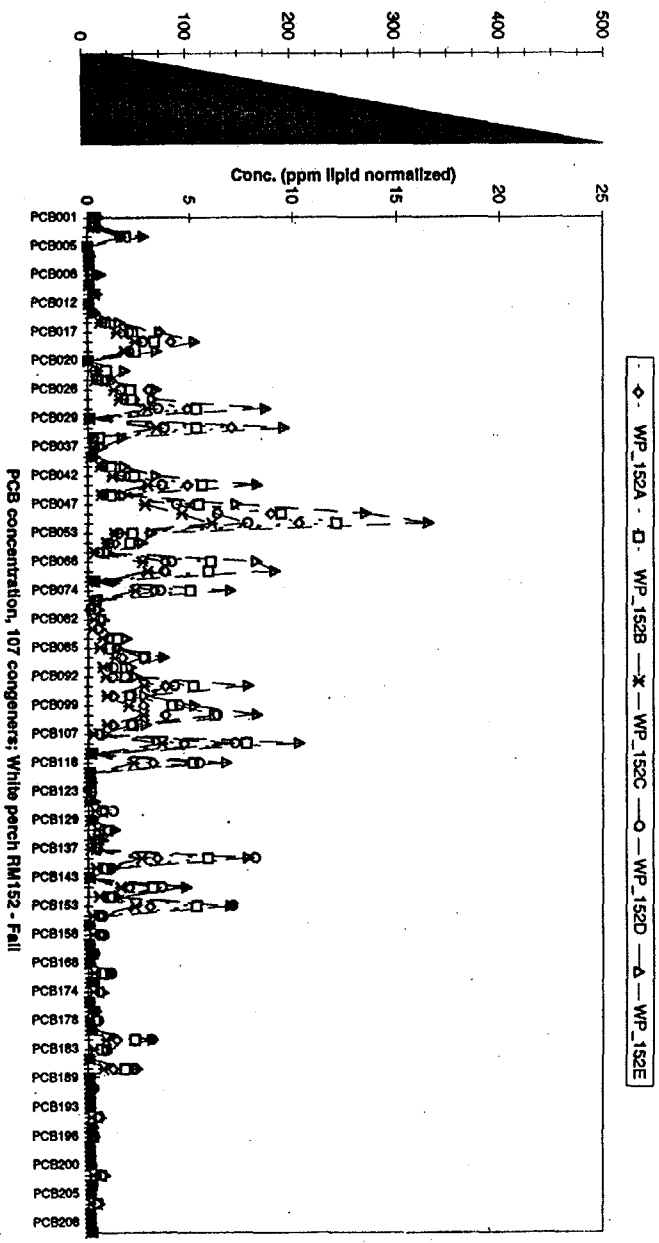
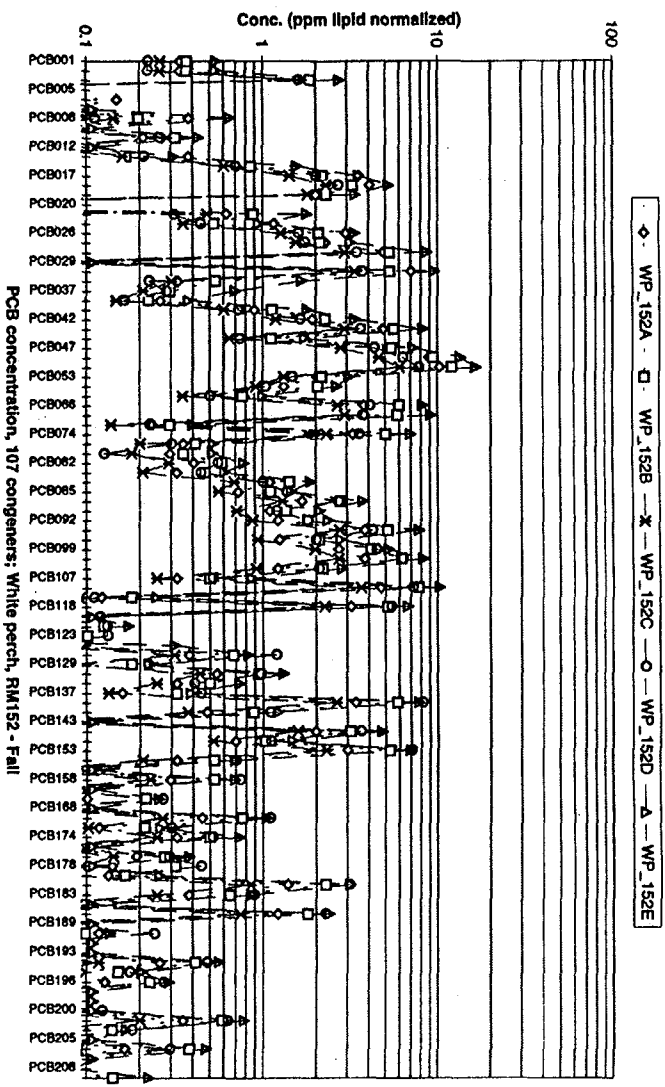


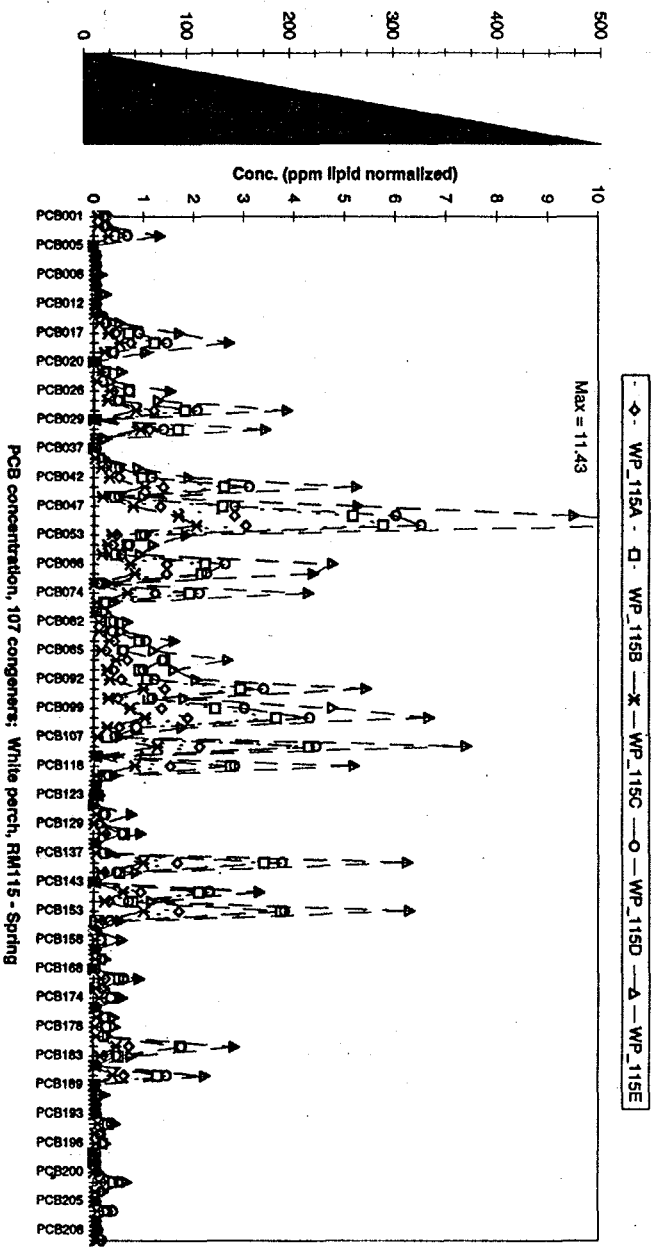
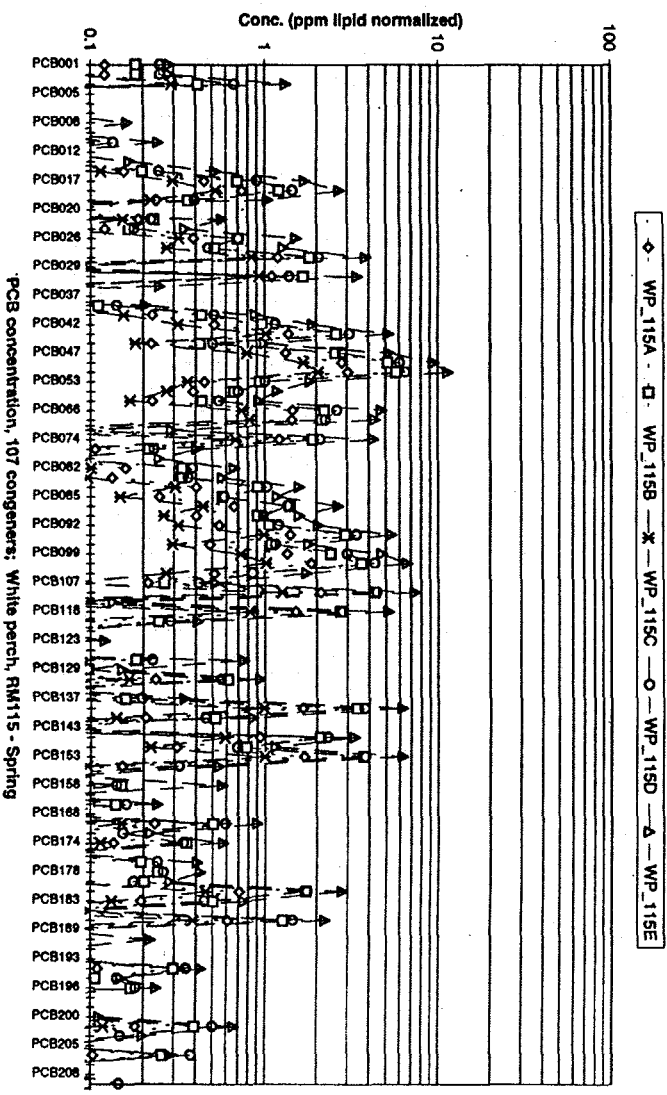


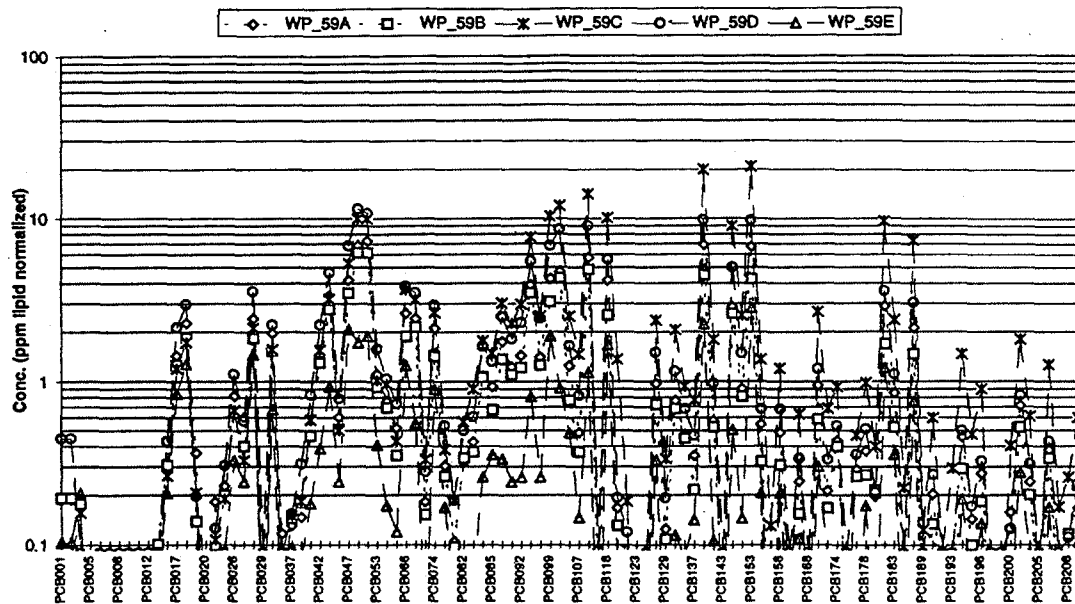




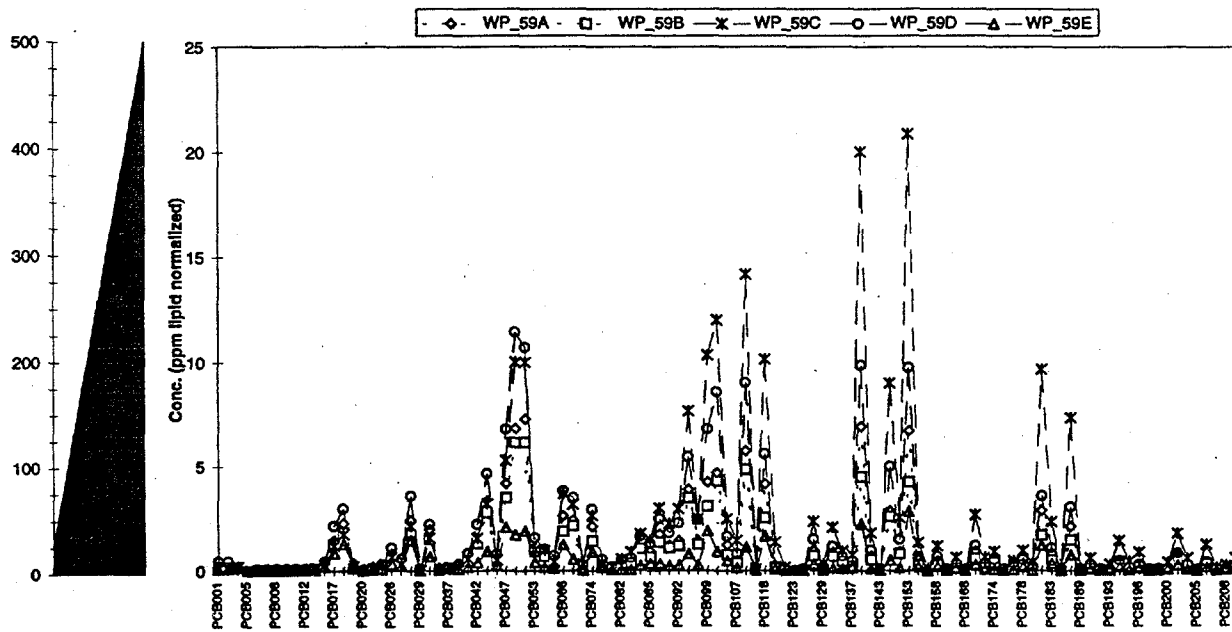




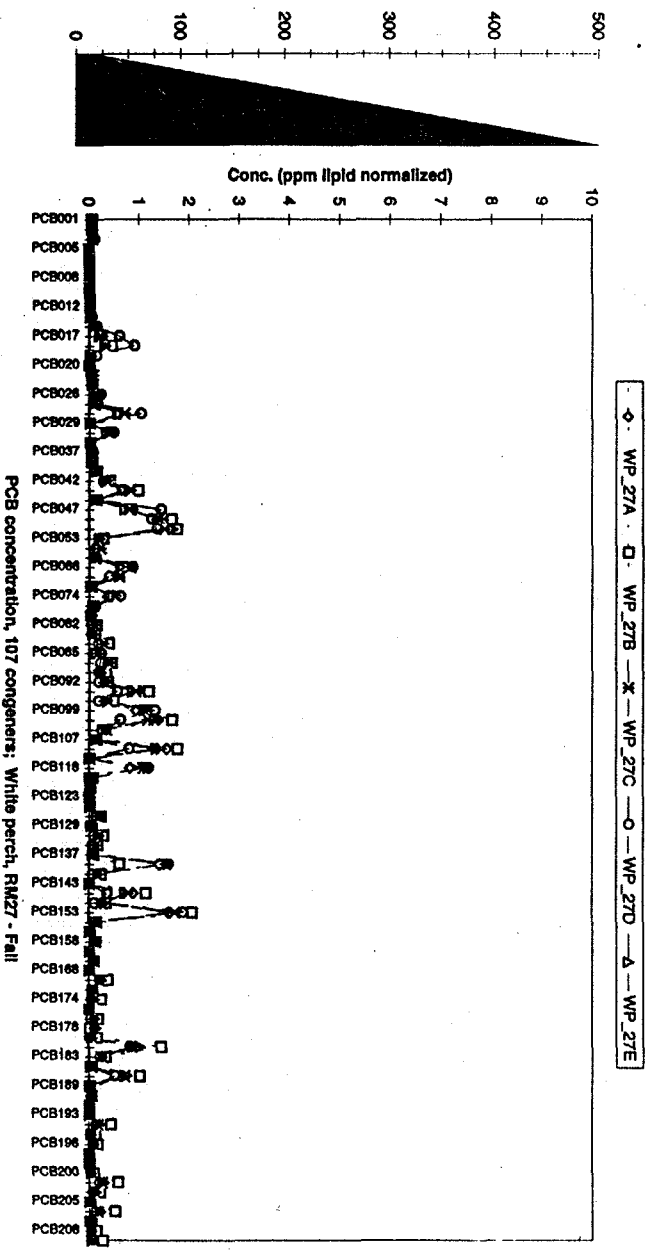
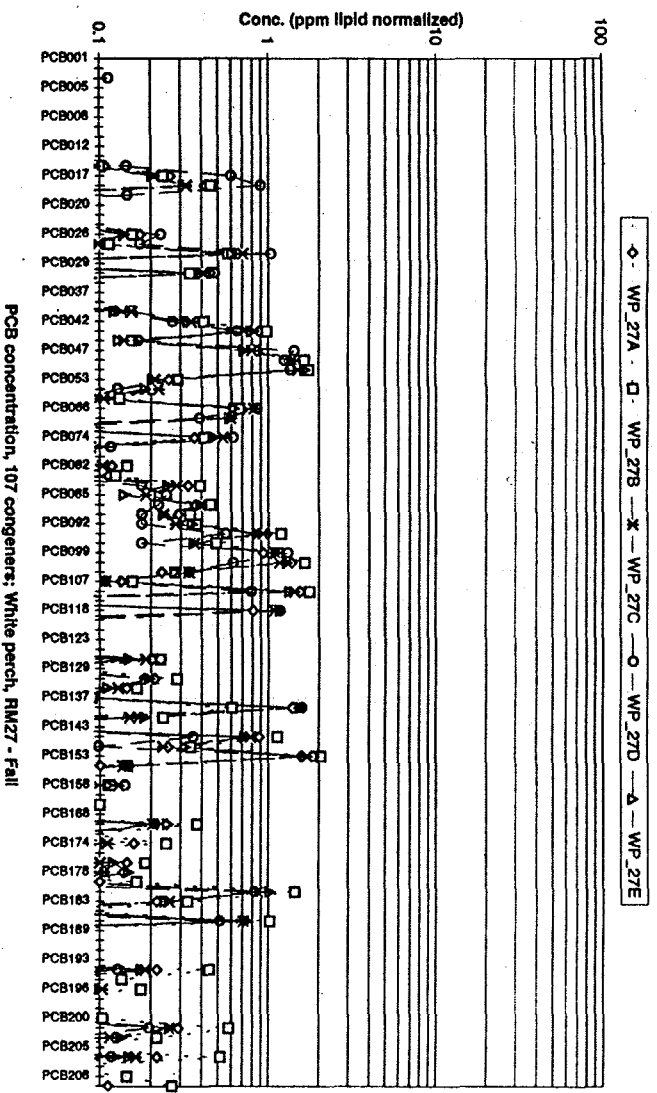


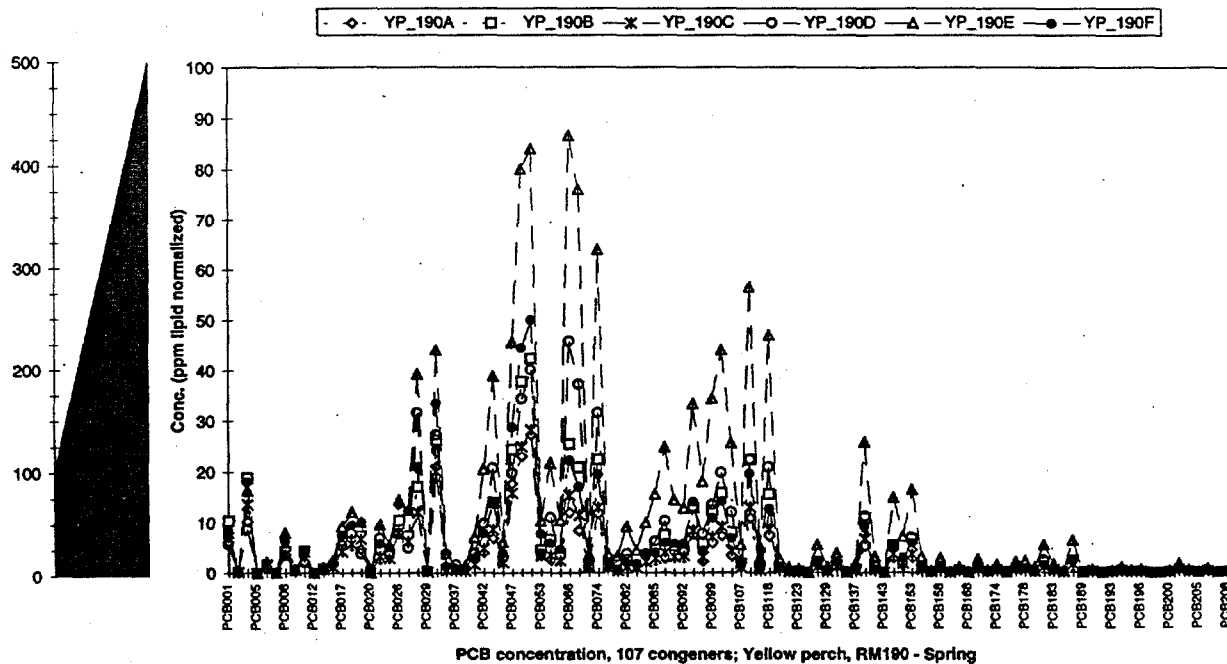
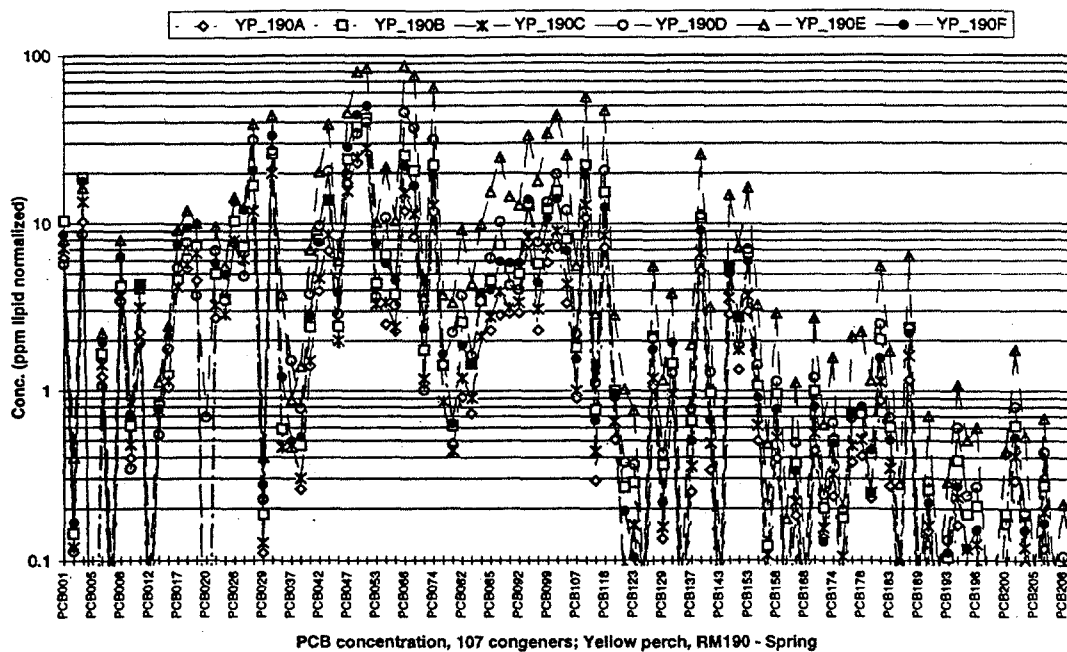


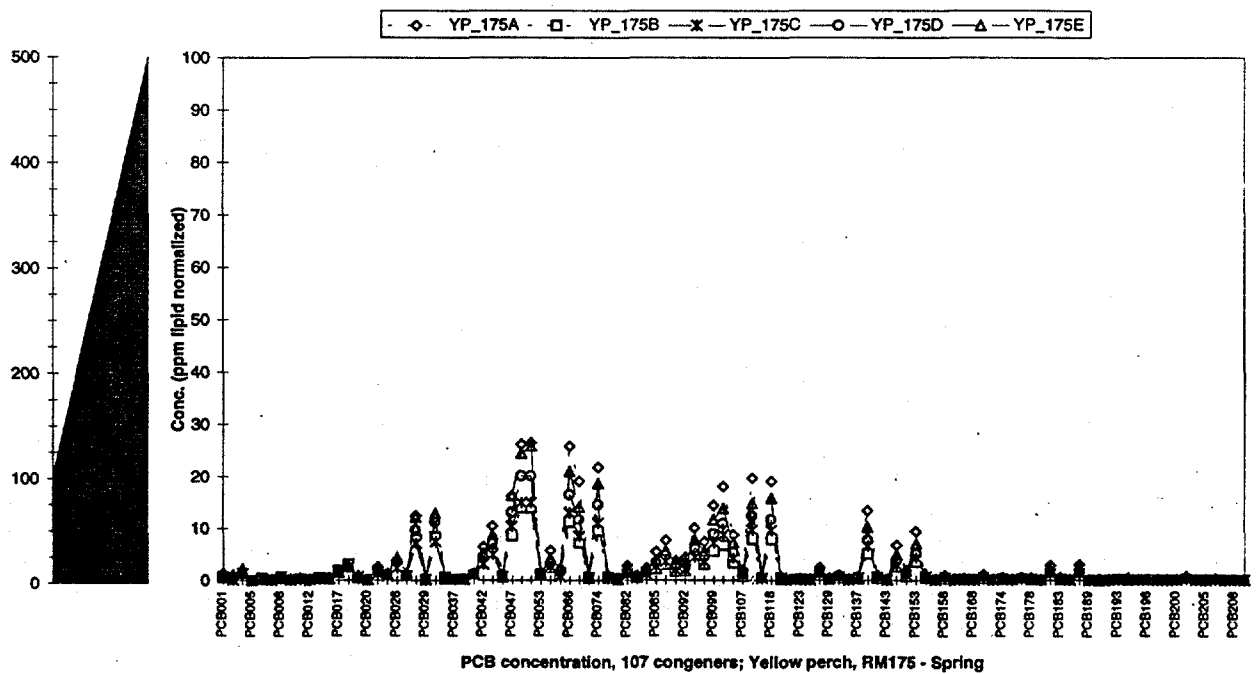
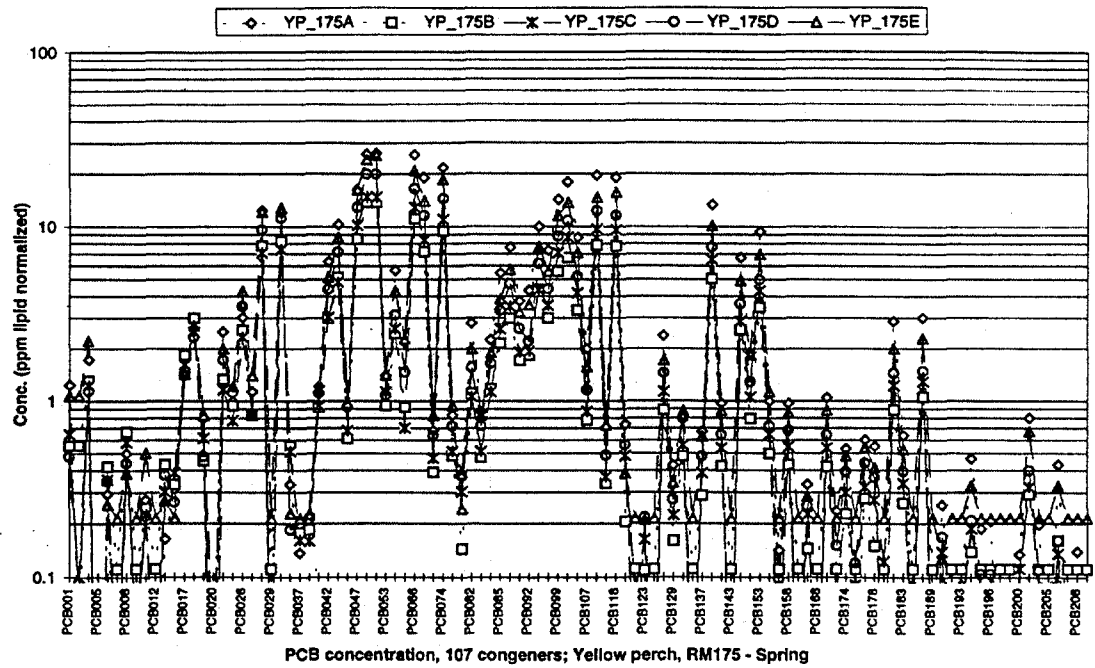
PCB concentration, 107 congeners; White perch, RM59 - Fall

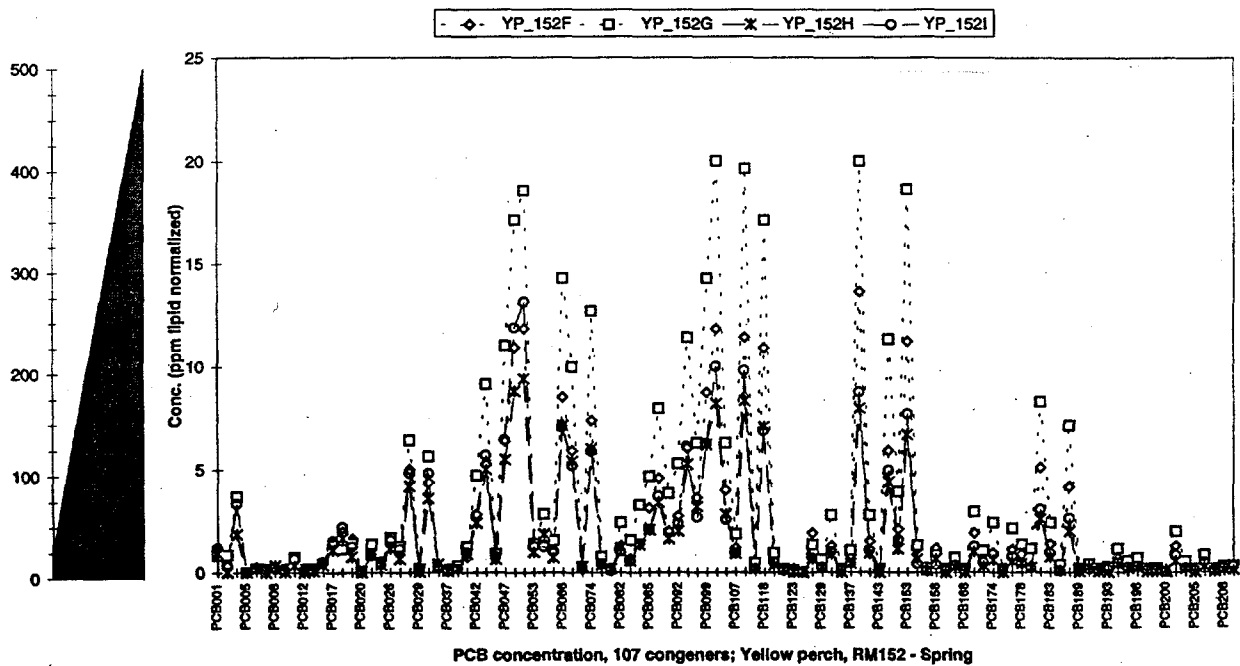
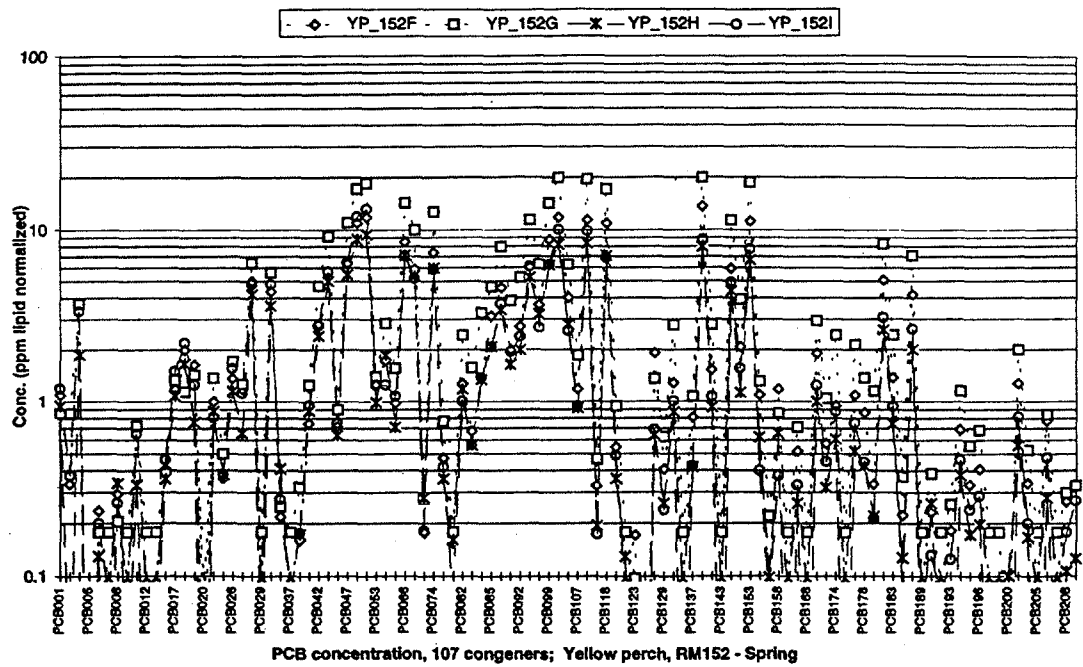


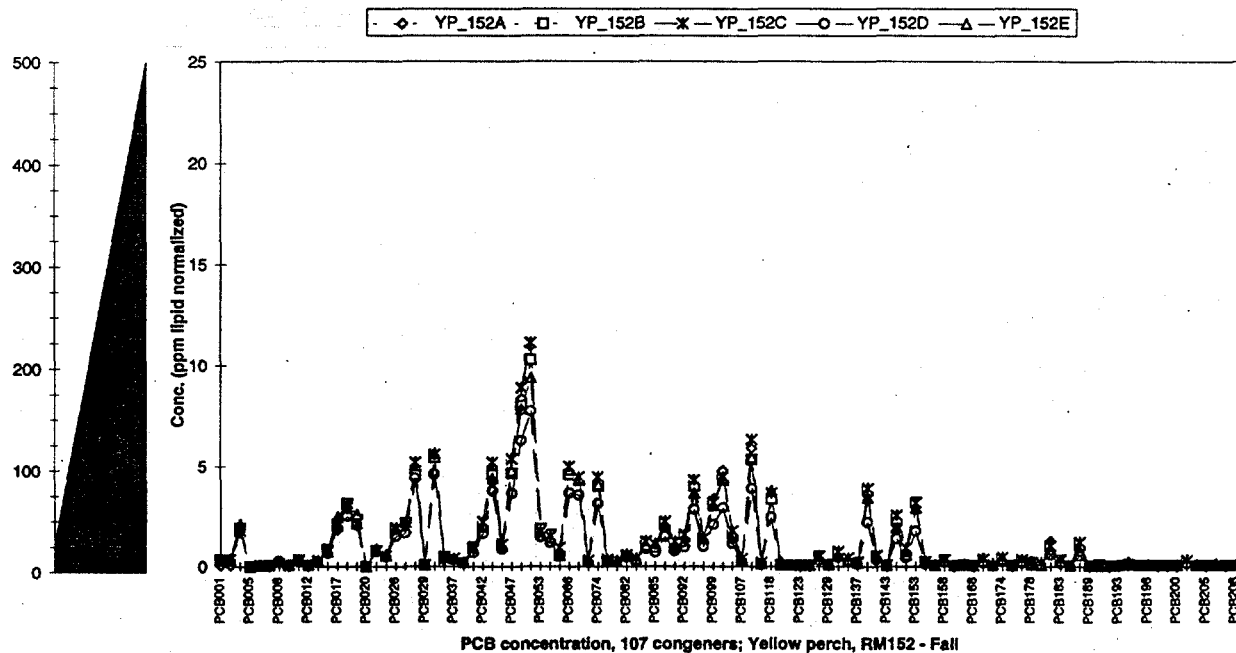
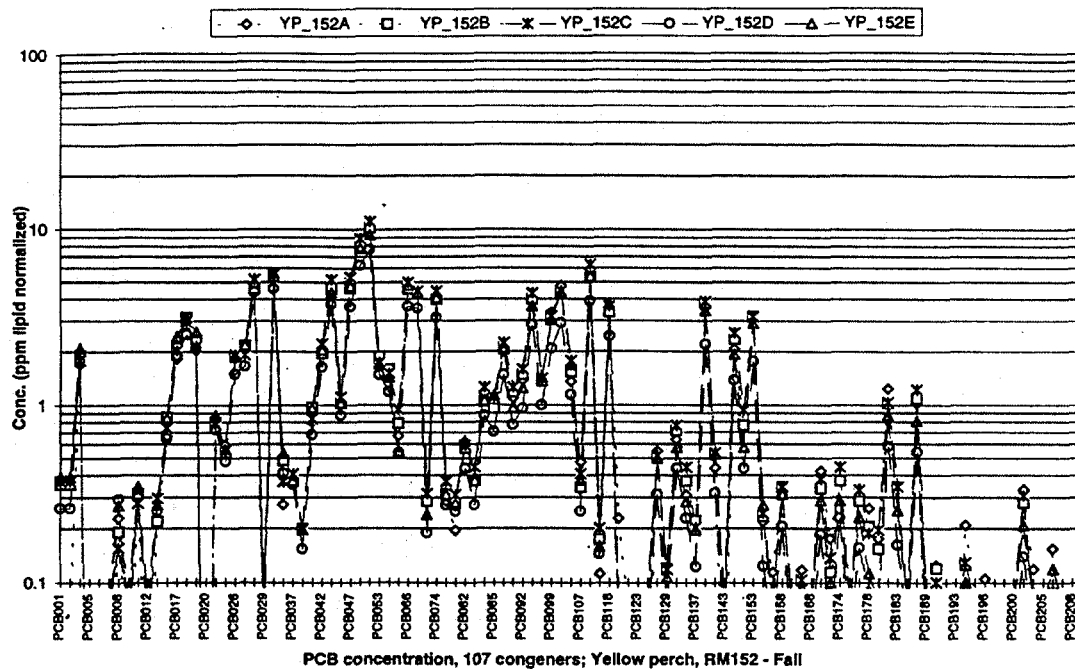
PCB concentration, 107 congeners; White perch, RM59 - Fall

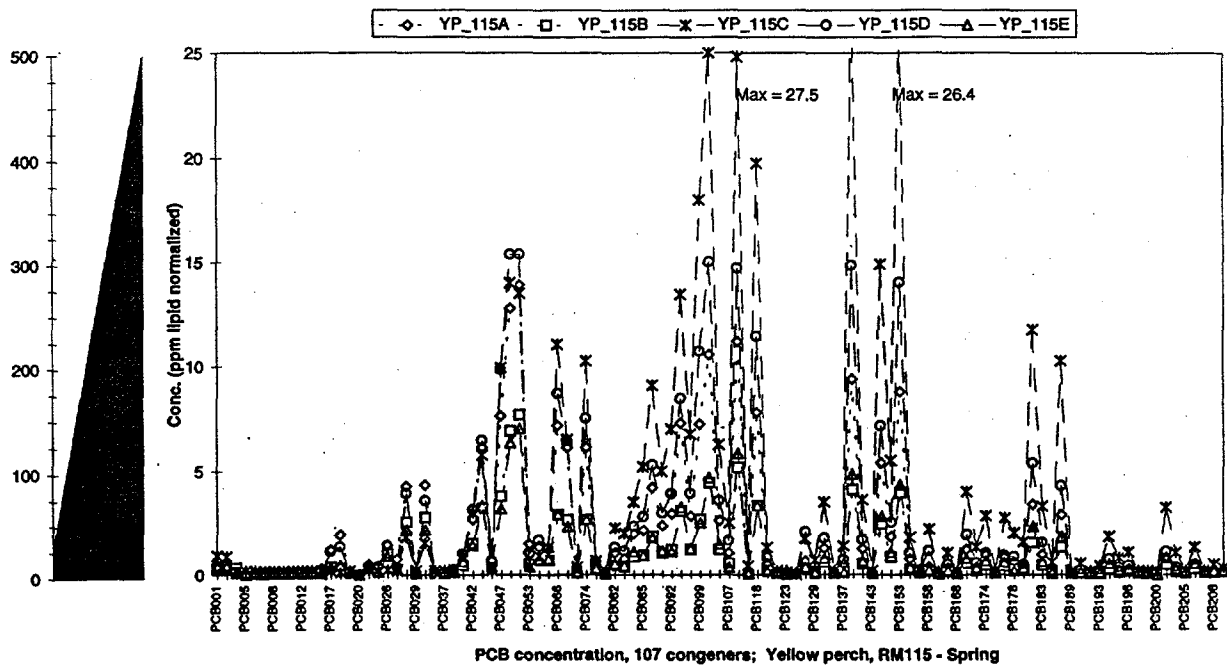
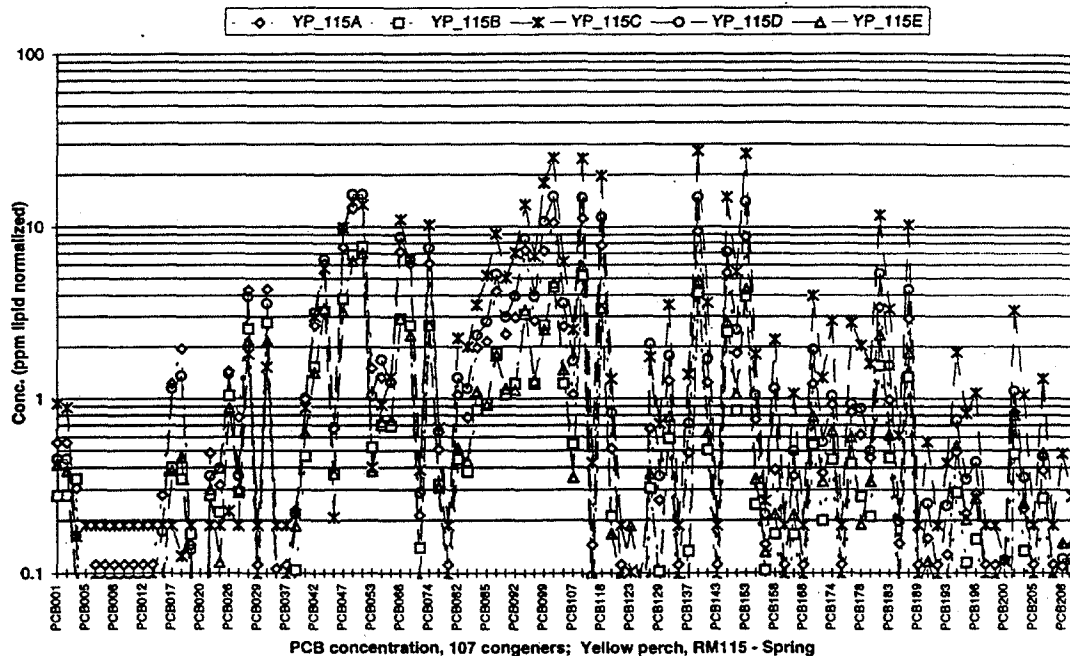












APPENDIX E

Assessment of the Variability in Congener Composition within Sample Groups

ASSESSMENT OF GROUP HOMOGENEITY

1. IDENTIFICATION OF UNUSUAL SAMPLES

Establishing whether a consistent pattern existed along the river gradient was based on a comparison of the distances between fish samples of different locations ("between-group") and the distances between fish samples of the same location ("within-group.") The validity and sensitivity of this comparison depended on the level of similarity between fish of the same *a priori* group. The within-group distances represent an estimate of the background variability in PCB uptake by individual fish. However, fish PCB concentrations and composition reflect not only variability of the unique physiology of each individual fish, but may also reflect variability in the local environment or the mobility of the individual fish. Therefore, some review of the homogeneity of the *a priori* groups was needed to identify how differences in patterns within a group might affect the analysis.

The homogeneity of the *a priori* groups was assessed by evaluating the distribution of within-group distances. This distribution was found to not differ significantly from a lognormal distribution (based on a correlation of the normal probability plot: $r=0.995$, $n=241$, $\alpha=0.10$). The distribution is right-skewed because of the slightly redundant nature of the calculation, i.e., each sample contributes to a distance value $n-1$ times (where n is the number of samples in a group). For example, consider a group with five samples, four of which exhibit very similar congener patterns, while one has a relatively unusual pattern. The within-group distances for this group will include six small distance values (between all pairs of the four similar samples), and four large distance values (between the unusual sample and the other four samples). Consequently, the distribution of within-group distances (Figure E-1) is a mixture of two sets of distances. The first set includes the distances between samples that have very similar patterns to the other samples in their groups; the second, smaller set includes distances between samples that are not consistently similar to the other samples in their groups. The samples in this second set have been highlighted for further investigation. These samples were identified as those samples with distance values exceeding the 90 percent probability value for a lognormal distribution with mean and variance estimated from the within-group distance data (Table E-1).

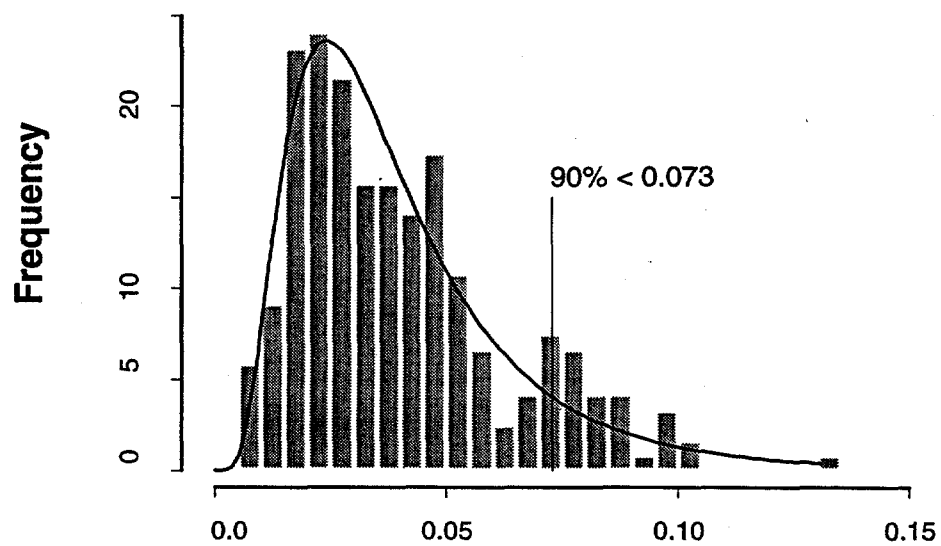


Figure E-1. Distribution of observed within-group distances

Table E-1. Samples excluded from group analyses

SAMPLE ID ^a	SPECIES	RIVER MILE	SEASON	GENDER	AGE	MAXIMUM DISTANCE VALUE
F309711R1	Largemouth bass	190	Spring	Male	Adult	0.088
F293919	Striped bass	75	Spring	Male	Adult	0.131
F293915	Striped bass	152	Spring	Male	Adult	0.081
F282166	White perch	27	Fall	Unknown	Adult	0.097
F282163	White perch	59	Fall	Unknown	Adult	0.099
F282165	White perch	59	Fall	Unknown	Adult	0.099
F283129	Yellow perch	115	Spring	Unknown	Adult	0.104
F284077	Yellow perch	190	Spring	Unknown	Adult	0.091
F284078	Yellow perch	190	Spring	Unknown	Adult	0.089
F284087	Striped bass	152	Fall	Unknown	Juvenile	0.103
F284089	Striped bass	152	Fall	Unknown	Juvenile	0.103

^a These samples exceeded the 90 percent probability value of the lognormal distribution of within-group distances.

The samples in Table E-1 exhibited congener patterns that had large differences from other samples in their groups, indicating potentially different exposure characteristics. In general, a high level of homogeneity was observed within the groups of individual fish samples. Only 11 of 120 samples (9 percent) were identified as unusual. In a similar study, conducted with composite samples of resident fish, 9 of 129 samples (7 percent) were identified as unusual using the same approach described here (Field et al. in prep). To increase the sensitivity of between-group distances, these samples were excluded from the further between-group and within-group distance calculations. Congener composition and concentration profiles for all 107 congeners in these and all other samples are presented in Appendix D.

2. RANDOMIZATION DISTRIBUTION

To compare the observed within-group distances to an objective criterion, a random distribution of distances between independent samples was simulated. One sample was simulated with a congener composition that was randomly generated, such that the contribution of each congener was independent of all other congener contributions, but the sum across all 46 congeners equaled one. A second sample was simulated independently in the same way and the Euclidean distance between these two samples

was calculated. Distances were calculated for 10,000 pairs of independent, randomly generated samples to produce the randomization distribution shown in Figure E-2. The range of distances observed in this randomization distribution is important. Distance values that are very small on this scale (<0.08) are highly unlikely ($p<0.0006$) under the assumption of randomness and independence. A small distance value would suggest that the congeners are not strictly independent from one another, that the samples are not independent from one another, or some combination of these two situations. In the data set several congener groups were highly correlated, i.e., two or more congeners tended to co-occur at similar levels across all samples. The independence that is assumed in the randomization distribution has the effect of overestimating the expected distances; the level of overestimation will depend on the level of dependence between congeners. So, if the correlation between congeners was included in the randomization distribution, it would be similar to Figure E-2 but would be shifted to the left to some degree.

The other situation that would create very small distance values is non-independence between samples. Samples in the *a priori* groups are not completely independent of one another, because they were chosen from local populations with similar exposures and life histories. The within-group distance values observed within the *a priori* groups of fish samples ranged from 0.006 to 0.131, with 92.5 percent of the distances less than 0.08. The fact that over 90 percent of the observed within-group distances were less than those in the randomization distribution is further evidence that the *a priori* groups are exhibiting composition patterns from homogeneous groups. In light of the information about the distance values in the randomization distribution, the samples shown in Table E-1 (with distance values greater than 0.073) are likely to be samples with exposure characteristics that are, to a large degree, independent from the other samples in their groups. In other words, they are likely to have experienced a somewhat different exposure or life history than was predicted by their group label.

Distance values that are very large on the randomization distribution scale (>0.16) are also highly unlikely ($p<0.0019$) under the assumption of randomness and independence. A large distance value suggests some combination of a lack of independence between congeners and between samples. Just as the small distance values suggest that the two samples have more similar exposure characteristics than expected if they were independent, the large distance values suggest that the two samples have distinctly different exposure characteristics than expected under independence. In other words, distances greater than 0.16 are only expected to occur between samples that experienced very different exposures or life histories from one another.

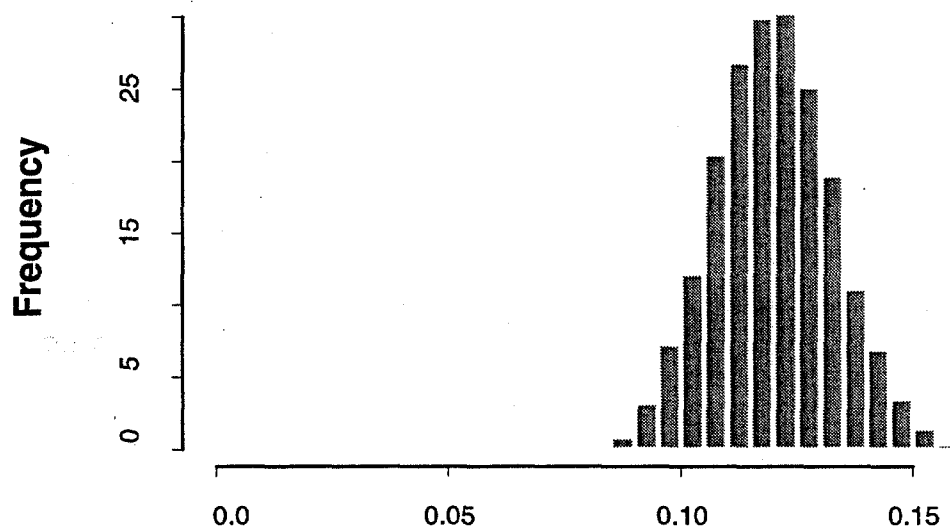


Figure E-2. Distribution of distances generated under the assumption of independence between samples and congeners

APPENDIX F

Physical Characteristics of Individual Fish

Table F-1. Physical characteristics of fish collected for PCB study (n=120)

Label	Lab ID	Field ID	Species	RMile	Sample		Sex	Age	Length	Weight	% Lipid
					Date	Season					
LMB_190A	309710R1	139416	LMB	190	05/16/95	SPR	M	-9	440	1540	2.9
LMB_190B*	309711R1	139404	LMB	190	05/16/95	SPR	M	-9	410	1130	0.2
LMB_190C	309712R1	139401	LMB	190	05/16/95	SPR	M	-9	382	920	0.3
LMB_190D	309713R1	139410	LMB	190	05/16/95	SPR	M	-9	382	738	0.5
LMB_190E	309714R1	139418	LMB	190	05/16/95	SPR	M	-9	359	660	0.4
LMB_175A	309700R1	139282	LMB	175	05/15/95	SPR	M	-9	411	1060	0.1
LMB_175B	309701R1	139288	LMB	175	05/15/95	SPR	M	-9	387	900	0.3
LMB_175C	309702R1	139290	LMB	175	05/15/95	SPR	M	-9	399	950	0.3
LMB_175D	309703R1	139286	LMB	175	05/15/95	SPR	M	-9	378	850	0.3
LMB_175E	309704R1	139285	LMB	175	05/15/95	SPR	M	-9	353	640	0.1
LMB_152A	309705R1	131509	LMB	152	05/23/95	SPR	M	-9	354	610	0.2
LMB_152B	309706R1	131507	LMB	152	05/23/95	SPR	M	-9	386	970	1.2
LMB_152C	309707R1	131508	LMB	152	05/23/95	SPR	M	-9	383	900	0.6
LMB_152D	309708R1	131510	LMB	152	05/23/95	SPR	M	-9	381	860	1.1
LMB_152E	309709R1	131501	LMB	152	05/23/95	SPR	M	-9	368	650	0.1
LMB_115A	309695R1	4T4500	LMB	115	05/17/95	SPR	M	-9	381	800	0.5
LMB_115B	309696R1	4T4494	LMB	115	05/17/95	SPR	M	-9	375	820	1.8
LMB_115C	309697R1	4T4483	LMB	115	05/17/95	SPR	M	-9	355	760	1
LMB_115D	309698R1	4T4481	LMB	115	05/17/95	SPR	M	-9	409	1210	1.9
LMB_115E	309699R1	4T4484	LMB	115	05/17/95	SPR	M	-9	360	880	0.9
STB_152A	284087	3T2896	STB	152	08/30/95	FALL	U	0	75	4	2.8
STB_152B	284088	3T2897	STB	152	08/30/95	FALL	U	0	77	5	0.6
STB_152C*	284089	3T2899	STB	152	08/30/95	FALL	U	0	73	4	0.9
STB_152D	284134	3T2898	STB	152	08/30/95	FALL	U	0	68	3	0.6
STB_152E	284135	3T2900	STB	152	08/30/95	FALL	U	0	69	2	0.6
STB_152F	293913	127660	STB	152	06/21/95	SPR	M	-9	496	1300	3
STB_152G	293914	127662	STB	152	06/21/95	SPR	M	-9	635	2900	1.9
STB_152H*	293915	127664	STB	152	06/21/95	SPR	M	-9	484	1200	3
STB_152I	293916	127665	STB	152	06/21/95	SPR	M	-9	567	2000	4.4
STB_152J	293917	127669	STB	152	06/21/95	SPR	M	-9	691	3710	3.8
STB_152K	300490	127685	STB	152	08/28/95	FALL	M	-9	820	5740	4.2
STB_152L*	300491	127687	STB	152	08/28/95	FALL	M	-9	766	4240	2.6
STB_152M	300492	127691	STB	152	08/28/95	FALL	M	-9	745	3920	0.3
STB_152N	300493	127693	STB	152	08/28/95	FALL	M	-9	665	3000	2.1
STB_152O	300494	127699	STB	152	08/28/95	FALL	M	-9	479	1080	1.4
STB_115A	300480	127651	STB	115	05/15/95	SPR	F	-9	729	3930	2.8
STB_115B	300481	127652	STB	115	05/15/95	SPR	M	-9	570	2090	0.8
STB_115C	300482	127655	STB	115	05/15/95	SPR	M	-9	500	1300	1.4
STB_115D	300483	127656	STB	115	05/15/95	SPR	F	-9	845	8300	4
STB_115E	300484	127739	STB	115	05/09/95	SPR	F	-9	740	4480	3.5
STB_115F	300485	127742	STB	115	05/09/95	SPR	M	-9	635	2700	6.3
STB_115G	300486	127743	STB	115	05/09/95	SPR	F	-9	696	3820	2.1
STB_115H	300487	127744	STB	115	05/09/95	SPR	M	-9	569	2020	4.3
STB_115I	300488	127746	STB	115	05/09/95	SPR	F	-9	682	3330	2.4
STB_115J	300489	127748	STB	115	05/15/95	SPR	M	-9	510	1320	0.1
STB_75A	293910	127581	STB	75	04/17/95	SPR	M	-9	665	3380	3.6
STB_75B	293918	127708	STB	75	04/29/95	SPR	M	-9	656	3000	3.5
STB_75C*	293919	127711	STB	75	04/29/95	SPR	M	-9	592	2240	3.5
STB_75D	293920	127723	STB	75	04/29/95	SPR	M	-9	636	2700	9
STB_75E	293921	127727	STB	75	04/29/95	SPR	M	-9	592	2290	4.9
STB_59A	284080	HP3557	STB	59	09/07/95	FALL	U	0	83	5	1.1
STB_59B	284081	HP3559	STB	59	09/07/95	FALL	U	0	74	3	1

Label	Lab ID	Field ID	Species	RMile	Sample		Season	Sex	Age	Length	Weight	% Lipid
					Date							
STB_59C	284131	HP3558	STB	59	09/07/95	FALL	U	0	0	67	2	0.9
STB_59D	284132	HP3560	STB	59	09/07/95	FALL	U	0	0	66	2	0.7
STB_59E	284133	HP3561	STB	59	09/07/95	FALL	U	0	0	60	2	0.9
STB_27A	284082	HP3568	STB	27	09/12/95	FALL	U	0	0	63	3	0.6
STB_27B	284083	HP3569	STB	27	09/12/95	FALL	U	0	0	74	5	1.1
STB_27C	284084	HP3570	STB	27	09/12/95	FALL	U	0	0	75	5	1
STB_27D	284085	HP3571	STB	27	09/12/95	FALL	U	0	0	79	7	0.6
STB_27E	284086	HP3572	STB	27	09/12/95	FALL	U	0	0	74	4	0.8
STB_27F	293907	127556	STB	27	04/12/95	SPR	M	-9		620	2990	4.2
STB_27G	293908	127565	STB	27	04/12/95	SPR	M	-9		645	3100	4.2
STB_27H	293909	127559	STB	27	04/12/95	SPR	M	-9		527	1790	5.5
STB_27I	293911	127608	STB	27	04/24/95	SPR	M	-9		620	2440	3.4
STB_27J	293912	127618	STB	27	04/24/95	SPR	M	-9		831	7210	4.2
STB_27K	300495	127799	STB	27	11/27/95	FALL	M	-9		677	4100	2.4
STB_27L	300496	127823	STB	27	12/07/95	FALL	M	-9		752	4520	3.4
STB_27M	300497	127826	STB	27	12/08/95	FALL	M	-9		802	5560	4.7
STB_27N	300498	127828	STB	27	12/08/95	FALL	M	-9		615	2960	6
STB_27O	300499	127831	STB	27	12/08/95	FALL	M	-9		670	3300	1.5
WP_152A	282160	HP3550	WP	152	08/28/95	FALL	U	-9		-9	-9	3.7
WP_152B	282171	3T2892	WP	152	08/28/95	FALL	U	-9		212	-9	3.4
WP_152C	282172	3T2893	WP	152	08/28/95	FALL	U	-9		200	-9	4.8
WP_152D	282173	3T2894	WP	152	08/28/95	FALL	U	-9		203	-9	2.7
WP_152E	282174	3T2895	WP	152	08/28/95	FALL	U	-9		212	-9	2.3
WP_152F	283137	131541	WP	152	05/23/95	SPR	U	-9		190	100	3.9
WP_152G	283138	131542	WP	152	05/23/95	SPR	U	-9		192	100	2.7
WP_152H	283139	131543	WP	152	05/23/95	SPR	U	-9		178	80	2.8
WP_152I	283140	131544	WP	152	05/23/95	SPR	U	-9		188	100	5.6
WP_152J	283141	131545	WP	152	05/23/95	SPR	U	-9		183	90	4.4
WP_115A	283132	4T4926	WP	115	05/17/95	SPR	U	-9		170	90	3.1
WP_115B	283133	4T4927	WP	115	05/17/95	SPR	U	-9		190	90	3.3
WP_115C	283134	4T4928	WP	115	05/17/95	SPR	U	-9		168	75	4.4
WP_115D	283135	4T4929	WP	115	05/17/95	SPR	U	-9		164	75	2
WP_115E	283136R1	4T4930RE	WP	115	05/17/95	SPR	U	-9		160	60	2.1
WP_59A	282161	HP3551	WP	59	09/07/95	FALL	U	-9		178	96	6.6
WP_59B	282162	HP3552	WP	59	09/07/95	FALL	U	-9		171	80	6.5
WP_59C*	282163	HP3553	WP	59	09/07/95	FALL	U	-9		174	77	3
WP_59D	282164	HP3554	WP	59	09/07/95	FALL	U	-9		164	62	2.8
WP_59E*	282165	HP3556	WP	59	09/07/95	FALL	U	-9		300	400	5.8
WP_27A	282155	HP3523	WP	27	08/29/95	FALL	U	-9		191	165	6.9
WP_27B	282156	HP3524	WP	27	08/29/95	FALL	U	-9		206	257	9.7
WP_27C	282157	HP3525	WP	27	08/29/95	FALL	U	-9		237	335	8.6
WP_27D*	282166	HP3573	WP	27	08/29/95	FALL	U	-9		198	176	5.7
WP_27E	282167	HP3574	WP	27	08/29/95	FALL	U	-9		215	239	10.8
YP_190A	284070	139440	YP	190	05/16/95	SPR	U	-9		276	330	4.8
YP_190B	284075	139439	YP	190	05/16/95	SPR	U	-9		272	260	2.6
YP_190C	284076	139441	YP	190	05/16/95	SPR	U	-9		287	308	2.1
YP_190D*	284077	139442	YP	190	05/16/95	SPR	U	-9		299	452	3.5
YP_190E*	284078	139443	YP	190	05/16/95	SPR	U	-9		248	224	2.5
YP_190F	284079	139444	YP	190	05/16/95	SPR	U	-9		241	198	3.6
YP_175A	283146	139351	YP	175	05/15/95	SPR	U	-9		327	435	3
YP_175B	284071	139352	YP	175	05/15/95	SPR	U	-9		226	115	1.8
YP_175C	284072	139353	YP	175	05/15/95	SPR	U	-9		221	130	3.1
YP_175D	284073	139354	YP	175	05/15/95	SPR	U	-9		230	135	2.5
YP_175E	284074	139355	YP	175	05/15/95	SPR	U	-9		204	75	0.7

Label	Lab ID	Field ID	Species	RMile	Sample		Season	Sex	Age	Length	Weight	% Lipid
					Date							
YP_152A	282158	HP3526	YP	152	08/28/95		FALL	U	-9	-9	-9	4.2
YP_152B	282159	HP3527	YP	152	08/28/95		FALL	U	-9	-9	-9	3.5
YP_152C	282168	3T2889	YP	152	08/28/95		FALL	U	-9	188	-9	2.7
YP_152D	282169	3T2890	YP	152	08/28/95		FALL	U	-9	171	-9	4.8
YP_152E	282170	3T2891	YP	152	08/28/95		FALL	U	-9	176	-9	3.2
YP_152F	283142	131546	YP	152	05/23/95		SPR	U	-9	184	55	1.1
YP_152G	283143	131547	YP	152	05/23/95		SPR	U	-9	180	60	0.7
YP_152H	283144	131548	YP	152	05/23/95		SPR	U	-9	206	120	5
YP_152I	283145	131549	YP	152	05/23/95		SPR	U	-9	256	180	1.6
YP_115A	283127	4T4901	YP	115	05/17/95		SPR	U	-9	186	80	1.8
YP_115B	283128	4T4902	YP	115	05/17/95		SPR	U	-9	212	100	0.9
YP_115C*	283129	4T4903	YP	115	05/17/95		SPR	U	-9	190	105	0.4
YP_115D	283130	4T4904	YP	115	05/17/95		SPR	U	-9	251	200	2.8
YP_115E	283131	4T4905	YP	115	05/17/95		SPR	U	-9	230	140	0.6

NOTES: * Identified in statistical analysis as an outlier
 U Sex unknown
 -9 Measure unknown

**EVS ENVIRONMENT
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Hudson River Congener-Specific Data
Fish Samples Collected in 1995
Prepared July 1997