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April 27, 2010
File No.: 80013

Ms. Christine Clark
Regional Sample Control Center (RSCC)
U.S. Environmental Protection Agency
Region I
11 Technology Drive
No. Chelmsford, MA 01863

RE: Contract No. DAS-RAC-025
Task Order No. 0013-RI-CO-01BQ
Case No. DAS 0038S, Sample Delivery Group (SDG) No. 500-21559-1 and 500-21559-2
Test America Laboratory, Chicago IL and Denver, CO
Chlor-Alkali Facility (Former) Superfund Site
Berlin, New Hampshire
CERCLIS No.: NHN000103313
Tier II Organic Data Validation

PCNs/Perchlorate: 6/Aqueous/D02250, D02251, D02252, D02253, D02254, D02255,
Field Duplicates: D02251/D02252
Equipment Blanks: None

Dear Ms. Clark:

Nobis Engineering, Inc. performed a Tier II data validation in accordance with the Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, December 1996 Criteria, on the organic analytical data for six (6) water samples collected by Nobis Engineering, Inc. at the Chlor-Alkali Facility (Former) Superfund Site in Berlin, New Hampshire. These samples and blanks were analyzed for polychlorinated naphthalenes (PCNs) using SW-846 method 8270C and perchlorate using EPA method 6860 under the Delivery of Analytical Services (DAS) program following DAS technical specification DAS-RAC2-025, included in Attachment 1. A Tier II data validation was deemed sufficient at this time.

The data were evaluated based on the following parameters:

- Overall Evaluation of Data and Potential Usability Issues
- * Data Completeness
- * Preservation and Technical Holding Times
- * GC/MS Instrument Performance Check (Tuning)
- Initial and Continuing Calibrations
- * Blanks
- * Surrogate Compounds
- Internal Standards

	•	Matrix Spike/Matrix Spike Duplicate (MS/MSD)
*	•	Field Duplicates
NA	•	Sensitivity Check
NA	•	Performance Evaluation (PE) Samples/Accuracy Check (LCS)
NA	•	Target Compound Identification
*	•	Compound Quantitation and Reported Quantitation Limits
NA	•	Tentatively Identified Compounds
*	•	System Performance

* All criteria were met for this parameter.

Note: Worksheets, except for Worksheet XIII – Sample Quantitation, are not included for parameters that have met criteria or for criteria that are not applicable (NA) to the method.

The following information was used to generate the Data Validation Memorandum attachments:

Table I and III: Recommendation Summary Table - summarizes validation recommendations

Table II and IV:Overall Evaluation of Data - summarizes site data quality objectives (DQO) and potential usability issues

Data Summary Tables: Summarize accepted, qualified, and rejected data

Overall Evaluation of Data and Potential Usability Issues

Following is a summary of the site DQOs:

- Accurate identification of environmental bioaccumulation risks from site contamination.
- Determination of where and what magnitude of risk applies for:
  - Humans, likely from incidental ingestion and dermal contact with sediments and surface waters, as well as consumption of fish;
  - Ecological assessment endpoints
  - Filling of existing data gaps throughout the study area.

The PCN data required qualifications resulting from non-compliant internal standard results. No qualifications were made to the perchlorate data.

Method 8270C- Polychlorinated Naphthalenes (PCNs):

The PCN data were qualified as a result of analytical error. The following list summarizes the measurement error associated with analysis: non-compliant internal standard results.

- Initial calibration indicated target compound hexachloronaphthalene (16.2%), and surrogate nitrobenzene-d5 (20.8%) were outside the % RSD calibration criteria. All samples were impacted. However, no action was taken since all samples were non-detect for hexachloronaphthalene.
- Internal standard DCB did not meet QC criteria in all samples. No action was necessary since no compounds were reported using this IS for quantitation. Internal standard CRY did not meet QC criteria in samples D02254 and D02255. The positive and non-detected results for pentachloronaphthalene, hexachloronaphthalene, and heptachloronaphthalene were estimated (J,UJ) in both of those samples.

Perchlorate: No qualifications were made.

Initial Calibration-

Polychlorinated naphthalenes (PCNs):

The following table summarizes the PCNs that failed to meet the initial criteria with an advisory RRF of 0.0050 and 15% RSD.

Instrument	**MS-01**	**Action**
Compound	%RSD 10/22/09	
Hexachloronaphthalene	16.2	None, since no positive results
Nitrobenzene-d5	20.8	
Samples Affected	All	

Perchlorate:

All calibration criteria were met.

Internal Standard Performance (Form VIII)

PCNs:
The following table summarizes the internal standards that failed the QC limits:

Sample Number	IS Compound	IS Area	Acceptable Range	Action
D02251	DCB	172212	39138-156550	None
D02252	DCB	167611	39138-156550	None
D02253MS	DCB	194410	39138-156550	None
D02254	DCB CRY	208332 960166	39138-156550 201472-805886	None J,UJ
D02255	DCB CRY	189385 807267	39138-156550 201472-805886	None J,UJ
D02250	DCB	182496	39138-156550	None
D02253	DCB	176834	39138-156550	None
Affected Analytes:	CRY-The positive and non-detected results for pentachloronaphthalene, hexachloronaphthalene, and heptachloronaphthalene were estimated (UJ) in samples D02254 and D02255.			

No target compounds are quantitated using IS DCB, therefore; no action was taken.

Perchlorate:
There were no IS recoveries that failed the QC limits.

Matrix Spike/Matrix Spike Duplicate Results

PCNs:

A matrix spike and a matrix spike duplicative were performed on sample D02253. The percent recoveries were within the acceptable limits criteria. However, the RPD for octachloronaphthalene failed QC limits. Professional judgment was used and no action was taken since all recoveries met QC criteria.

Performance Evaluation Results

No performance evaluation samples were submitted for this SDG.

Please contact Gail DeRuzzo at (978) 703-6021 should you have any questions or comments regarding this information.

Very truly yours,

NOBIS ENGINEERING, INC.

Gail DeRuzzo
Lead Chemist

Diane Quigley, CHMM
Subcontractor Data Validator
WESTON SOLUTIONS, INC.

Tables:
Table I: Recommendation Summary Table for PCNs
Table II: Overall Evaluation of PCN Data
Table III: Recommendation Summary Table for Perchlorates
Table IV: Overall Evaluation of Perchlorate Data
Data Summary Tables

Attachments: Attachment 1: DAS-RAC2-025 Technical Specification, Analysis of Aqueous and Soil Samples for Methyl Mercury, Perchlorate and Polychlorinated Naphthalenes (PCNs)

Enclosures:
Data Validation Worksheets
Field Sampling Notes
CSF Audit (DC-2 Form)
DQO Summary

cc: Darryl Luce, EPA Site Manager (w/o Enclosures)

TABLE I
Recommendation Summary Table for PCNs
Chlor-Alkali Facility (Former) Superfund Site
Case 0038S SDG 500-21559-1

TABLE I: RECOMMENDATION SUMMARY TABLE		
Sample Number	**Matrix**	**Qualifiers**
D02250	Aqueous	A
D02251	Aqueous	A
D02252	Aqueous	A
D02253	Aqueous	A
D02254	Aqueous	UJ[1]
D02055	Aqueous	UJ[1]

A – Accept the data.

UJ[1]- Estimate non-detected (UJ) results for pentachloronaphthalene, hexachloronaphthalene, and heptachloronaphthalene due to non-compliant internal standard results.

TABLE II
Overall Evaluation of PCN Data
Chlor-Alkali Facility (Former) Superfund Site
Case 0038S SDG 500-21559-1

SEMIVOLATILE ORGANICS (PCN)					
DQO (list all DQOs)	**Sampling and/or Analytical Method Appropriate Yes or No**	**Measurement Error**		**Sampling Variability****	**Potential Usability Issues**
		Analytical Error	**Sampling Error***		
Accurate identification of environmental bioaccumulation risks from site contamination. Determination of where and what magnitude of risk applies for: -Humans, likely from incidental ingestion and dermal contact with sediments and surface waters, as well as consumption of fish; -Ecological assessment endpoints -Filling of existing data gaps throughout the study area.	Yes, analytical method SW846 8270C and sampling procedures according to the requirements of the *QAPP* are appropriate for all samples.	Refer to qualifications In R/S key: UJ[1]	Refer to qualifications in R/S key: None		UJ[1]-Estimate non-detected (UJ) results for hexachloronaphathlene, pentachloronaphthalene and heptachloronaphthalene due to non-compliant internal standard results.

* The evaluation of "sampling error" cannot be completely assessed in data validation
** Sampling variability is not assessed in data validation.

TABLE III
Recommendation Summary Table for Perchlorate
Chlor-Alkali Facility (Former) Superfund Site
Case 0038S SDG 500-21559-2

TABLE I: RECOMMENDATION SUMMARY TABLE		
Sample Number	**Matrix**	**Qualifiers**
D02250	Aqueous	A
D02251	Aqueous	A
D02252	Aqueous	A
D02253	Aqueous	A
D02254	Aqueous	A
D02055	Aqueous	A

A - Accept the data.

TABLE IV
Overall Evaluation of Perchlorate Data
Chlor-Alkali Facility (Former) Superfund Site
Case 0038S SDG 500-21559-2

SEMIVOLATILE ORGANICS (Perchlorate)					
DQO (list all DQOs)	**Sampling and/or Analytical Method Appropriate Yes or No**	**Measurement Error**		**Sampling Variability****	**Potential Usability Issues**
		Analytical Error	**Sampling Error***		
Accurate identification of environmental bioaccumulation risks from site contamination. Determination of where and what magnitude of risk applies for: -Humans, likely from incidental ingestion and dermal contact with sediments and surface waters, as well as consumption of fish; -Ecological assessment endpoints -Filling of existing data gaps throughout the study area.	Yes, analytical method EPA 6860 and sampling procedures according to the requirements of the *QAPP* are appropriate for all samples.	Refer to qualifications In R/S key: A	Refer to qualifications in R/S key: None		Accept the data.

* The evaluation of "sampling error" cannot be completely assessed in data validation
** Sampling variability is not assessed in data validation.

DATA SUMMARY TABLE
Tier II Validated Data
Polychlorinated Naphthalenes (PCNs)

SITE: Chlor-Alkali Facility (Former) - Berlin, NH
CASE NO.: 0038S SDG 500-21559-1

Sample Name		D02250		D02251		D02252	
Sample Location		MW-16A		MW-11A		MW-11A	
Lab Sample ID		500-21559-1		500-21559-2		500-21559-3	
Station ID		MW-16A-1005-1551		MW-11A-1005-1610		DUP-01-1005-1610A	
Dilution Factor		1		1		1	
Sample Date		05 Oct 09		05 Oct 09		05 Oct 09	
Units		ug/L		ug/L		ug/L	
Chemical	CRQL						
Dichloronaphthalene, Total	2.3	2.4	U	2.3	U	2.3	U
Heptachloronaphthalene, Total	2.3	2.4	U	2.3	U	2.3	U
Hexachloronaphthalene, Total	2.3	2.4	U	2.3	U	2.3	U
Monochloronaphthalene, Total	2.3	2.4	U	2.3	U	2.3	U
Octachloronaphthalene, Total	2.3	2.4	U	2.3	U	2.3	U
Pentachloronaphthalene, Total	2.3	2.4	U	2.3	U	2.3	U
Tetrachloronaphthalene, Total	2.3	2.4	U	2.3	U	2.3	U
Trichloronaphthalene, Total	2.3	2.4	U	2.3	U	2.3	U

DATA SUMMARY TABLE
Tier II Validated Data
Polychlorinated Naphthalenes (PCNs)

SITE: Chlor-Alkali Facility (Former) - Berlin, N
CASE NO.: 0038S SDG 500-21559-1

Sample Name		D02253		D02254		D02255	
Sample Location		MW-12		MW-11B		MW-6	
Lab Sample ID		500-21559-4		500-21559-5		500-21559-6	
Station ID		MW-12-1005-1600		MW-11B-1006-0945		MW-6-1006-1010	
Dilution Factor		1		1		1	
Sample Date		05 Oct 09		06 Oct 09		06 Oct 09	
Units		ug/L		ug/L		ug/L	
Chemical	CRQL						
Dichloronaphthalene, Total	2.3	2.7	U	2.4	U	2.3	U
Heptachloronaphthalene, Total	2.3	2.7	U	2.4	UJ	2.3	UJ
Hexachloronaphthalene, Total	2.3	2.7	U	2.4	UJ	2.3	UJ
Monochloronaphthalene, Total	2.3	2.7	U	2.4	U	2.3	U
Octachloronaphthalene, Total	2.3	2.7	U	2.4	U	2.3	U
Pentachloronaphthalene, Total	2.3	2.7	U	2.4	UJ	2.3	UJ
Tetrachloronaphthalene, Total	2.3	2.7	U	2.4	U	2.3	U
Trichloronaphthalene, Total	2.3	2.7	U	2.4	U	2.3	U

DATA SUMMARY TABLE
Tier II Validated Data
Perchlorate Analysis

SITE: Chlor-Alkali Facility (Former) - Berlin, NH
CASE NO.: 0038S SDG 500-21559-2

	Sample Name	D02250		D02251		D02252	
	Sample Location	MW-16A		MW-11A		MW-11A	
	Lab Sample ID	D9J080345001		D9J080345002		D9J080345003	
	Station ID	MW-16A-1005-1551		MW-11A-1005-1610		DUP-01-1005-1610A	
	Dilution Factor	1		1		1	
	Sample Date	05 Oct 09		05 Oct 09		05 Oct 09	
	Units	ug/L		ug/L		ug/L	
Chemical	CRQL						
Perchlorate (organic)	0.05	0.05	U	0.05	U	0.05	U

DATA SUMMARY TABLE
Tier II Validated Data
Perchlorate Analysis

SITE: Chlor-Alkali Facility (Former) - Berlin, NH
CASE NO.: 0038S SDG 500-21559-2

	Sample Name	D02253		D02254		D02255	
	Sample Location	MW-12		MW-11B		MW-6	
	Lab Sample ID	D9J080345004		D9J080345005		D9J080345006	
	Station ID	MW-12-1005-1600		MW-11B-1006-0945		MW-6-1006-1010	
	Dilution Factor	1		1		1	
	Sample Date	05 Oct 09		06 Oct 09		06 Oct 09	
	Units	ug/L		ug/L		ug/L	
Chemical	CRQL						
Perchlorate (organic)	0.05	0.05	U	0.05	U	0.061	