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MEMORANDUM

TO: Chris Lichens, Remedial Project Manager
Site Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong, ESAT Task Order Manager (TOM)
Quality Assurance (QA) Program, MTS-3

FROM: Doug Lindelof, Data Review Task Manager
Region 9 Environmental Services Assistance Team (ESAT)

ESAT Contract No.: EP-W-06-041
Technical Direction Form No.: 00105053

DATE: May 3, 2007

SUBJECT: Review of Analytical Data, Tier 3

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

Site:	Omega Chem OU2
Site Account No.:	09 BC LA02
CERCLIS ID NO.:	CAD042245001
Case No.:	36072
SDG No.:	Y34K9
Laboratory:	DataChem Laboratories, Inc. (DATAC)
Analysis:	1,4-Dioxane, 1,2-Dibromoethane , and 1,2-Dibromo-3-chloropropane (Trace SIM Volatiles)
Samples:	19 Ground Water Samples (see Case Summary)
Collection Date:	March 12 through 15, 2007
Reviewer:	Santiago Lee, ESAT/Laboratory Data Consultants

This report has been reviewed by the EPA TOM for the ESAT contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

cc: Carol Beard, CLP PO USEPA Region 8
Steve Remaley, CLP PO USEPA Region 9

CLP PO: [X] Attention [X] Action

SAMPLING ISSUES: [X] Yes [ ] No

Data Validation Report

Case No.: 36072
SDG No.: Y34K9
Site: Omega Chem OU2
Laboratory: DataChem Laboratories, Inc.
Reviewer: Santiago Lee, ESAT/LDC
Date: May 3, 2007

I. CASE SUMMARY

Sample Information

Samples:	Y34K9 through Y34L2 and Y34L4 through Y34M8
Concentration and Matrix:	Low/Medium Concentration Water
Analysis:	1,4-Dioxane, 1,2-Dibromoethane , and 1,2-Dibromo-3-chloropropane by Trace Volatiles Selective Ion Monitoring (SIM)
SOW:	SOM01.1
Collection Date:	March 12 through 15, 2007
Sample Receipt Date:	March 14 and 16, 2007
Extraction Date:	Not Applicable
Analysis Date:	March 19 and 20, 2007

Field QC

Field Blanks (FB):	Y34M3
Equipment Blanks (EB):	Y34K9
Trip Blank (TB):	Y34L7
Background Samples (BG):	Not Provided
Field Duplicates (D1):	Y34L5 and Y34L6

Laboratory QC

Method Blanks & Associated Samples:

VBLKS1:	All samples and storage blank VHBLKS1

Tables

1A:	Analytical Results with Qualifications
1B:	Data Qualifier Definitions for Organic Data Review
2:	Calibration Summary

CLP PO Action

Nondetected results for 1,4-dioxane are qualified as rejected (R) due to very low response factors (<0.01) in initial and continuing calibrations (see Comment A).

CLP PO Attention

1. Detected results for 1,4-dioxane are qualified as estimated (J) due to very low response factors (<0.01) in initial and continuing calibrations (see Comment B).

2. Detected results for 1,4-dioxane in samples Y34L2, Y34L4, Y34L5, Y34L8 through Y34M2, Y34M4, and Y34M8 are qualified as estimated (J) due to high deuterated monitoring compound (DMC) recoveries (see Comment D).

3. Results for all analytes in sample Y34M3 are qualified as estimated (J) due to high internal standard (IS) areas (see Comment E).

Sampling Issues

1. The laboratory indicated on the sample log-in sheet that the temperature indicator bottle was absent from the cooler containing samples Y34K9 through Y34L8 (see p. 853 in data package). The SDG Narrative did not indicate how the cooler temperature was recorded.

2. The SDG Narrative (attached, p. 4 in data package) indicated that the pH of samples Y34L0, Y34L2, Y34M0, and Y34M1 were 4, 5, 3, and 3, respectively.

3. The sampler signature is missing on the traffic report & chain of custody record (TR/COCs) for sample Y34L8 (see attached TR/COC, p. 9 in data package).

4. Equipment blank, field duplicate, and trip blank were not submitted Ablind@ to the laboratory since AEB@, "FD", and "TB", respectively, were used as part of station locations on traffic report & chain of custody records (attached, p. 4 through 6 in data package).

Additional Comments

The laboratory performed manual integrations on calibrations due to incorrect auto integration. Manual integrations were reviewed and found to be satisfactory and in compliance with proper integration techniques.

This report was prepared in accordance with the following documents:

X ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services Volatile and Semivolatile Data Packages*;

X *USEPA Contract Laboratory Program Statement of Work for Organics Analysis, Multi-Media, Multi-Concentration,* SOM01.1, May 2005; and

X *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,* January 2005.

II. VALIDATION SUMMARY

The data were evaluated based on the following parameters:

	Parameter	Acceptable	Comment
1.	Holding Time/Preservation	Yes	
2.	GC/MS Tune/GC Performance	Yes	
3.	Initial Calibration	No	A, B
4.	Continuing Calibration	No	A, B
5.	Laboratory Blanks	Yes	
6.	Field Blanks	Yes	
7.	Deuterated Monitoring Compounds	No	D
8.	Matrix Spike/Matrix Spike Duplicates	N/A	
9.	Laboratory Control Samples/Duplicates	N/A	
10.	Internal Standards	No	E
11.	Compound Identification	Yes	
12.	Compound Quantitation	Yes	C
13.	System Performance	Yes	
14.	Field Duplicate Sample Analysis	Yes	

N/A = Not Applicable

III. VALIDITY AND COMMENTS

A. Nondetected results for the following analyte are qualified as rejected due to very low relative response factors (RRFs) in initial and continuing calibrations and are flagged "R" in Table 1A.

X 1,4-Dioxane in samples Y33K9 through Y34L1, Y34L7, and Y34M3, method blank VBLKS1, and storage blank VHBLKS1

RRFs below 0.01 were reported for 1,4-dioxane in initial and continuing calibrations (see Table 2). Since results are nondetected, false negatives may exist.

DMC 1,4-dioxane-d8 also had RRFs below 0.01 in initial and continuing calibrations (see Table 2).

The RRF evaluates instrument sensitivity and is used in the quantitation of target analytes.

B. Detected results for the following analyte are qualified as estimated due to very low relative response factors (RRFs) in initial and continuing calibrations and are flagged "J" in Table 1A.

X 1,4-Dioxane in samples Y34L2, Y34L4 through Y34L6, Y34L8 through Y34M2, and Y34M4 through Y34M8

RRFs below 0.01 were reported for 1,4-dioxane in initial and continuing calibrations (see Table 2). Detected results may be biased low.

DMC 1,4-dioxane-d8 also had RRFs below 0.01 in initial and continuing calibrations (see Table 2).

C. The following results, denoted with an AL@ qualifier, are estimated and flagged AJ@ in Table 1A.

X All detected results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

D. Results for the following analyte are qualified as estimated due to DMC recoveries above QC limits and are flagged AJ@ in Table 1A.

{1,4-Dioxane-d8}

X 1,4-Dioxane in samples Y34L2, Y34L4, Y34L5, Y34L8 through Y34M2, Y34M4, and Y34M8

DMC recoveries above QC limits are shown below.

Sample	DMC	% Recovery	QC Limits
Y34L4	1,2-Dichloroethane-d4	291	78-129
Y34L0	1,4-Dioxane-d8	171	50-150
Y34L1	1,4-Dioxane-d8	198	50-150
Y34L2	1,4-Dioxane-d8	277	50-150
Y34L4	1,4-Dioxane-d8	842	50-150
Y34L5	1,4-Dioxane-d8	253	50-150
Y34L8	1,4-Dioxane-d8	269	50-150
Y34L9	1,4-Dioxane-d8	158	50-150
Y34M0	1,4-Dioxane-d8	160	50-150
Y34M1	1,4-Dioxane-d8	311	50-150
Y34M2	1,4-Dioxane-d8	182	50-150
Y34M4	1,4-Dioxane-d8	190	50-150
Y34M8	1,4-Dioxane-d8	173	50-150
Y34M1	1,1,2,2-Tetrachloroethane-d2	126	73-125

Qualified results may be biased high. For DMC recoveries that exceeded QC limits, only detected results for associated analytes are qualified. Recoveries for DMCs 1,2-dichloroethane-d4 and 1,1,2,2-tetrachloroethane-d2 exceeded the QC limits but associated results were not qualified because they were nondetects. The samples were not reanalyzed.

Surrogates (e.g., deuterated monitoring compounds (DMCs)) are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in

environmental samples. All samples are spiked with DMCs prior to purging. DMCs provide information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

E. Results for the following analytes are qualified as estimated due to high internal standard (IS) areas and are flagged AJ@ in Table 1A.

X All analytes in sample Y34M3

IS areas outside QC limits are shown below.

Sample	Internal Standard	Area	QC Limits
Y34M3	Chlorobenzene-d5	1,360,026	536,554-1,251,958
Y34M3	1,4-Difluorobenzene	1,715,102	712,085-1,661,531
Y34M3	1,4-Dichlorobenzene-d4	614,069	257,449-600,715

Results for the affected analytes are considered quantitatively questionable. Where results are nondetected, false negatives may exist. The samples were not reanalyzed.

Data users should note that the result for 1,4-dioxane in sample Y34M3 was qualified as rejected (see Comment A).

Internal standards, introduced into every calibration standard, blank, sample, and QC sample, monitor changes in analyte response due to matrix effects and fluctuations in instrument sensitivity throughout the analytical sequence. Internal standards are used to quantitate the concentration of target analytes and surrogate standards.

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR ORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared according to the document, "USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review," January 2005.

U The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted Contract Required Quantitation Limit (CRQL) for sample and method.

L Indicates results which fall below the Contract Required Quantitation Limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

J The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the CRQL).

NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ The analyte was not detected at a level greater than or equal to the adjusted CRQL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.

Table 2
Calibration Summary

Case No.: 36072
SDG No.: Y34K9
Site: Omega Chem OU2
Laboratory: DataChem Laboratories, Inc.
Reviewer: Santiago Lee, ESAT/LDC
Date: May 3, 2007

RELATIVE RESPONSE FACTORS

	RRF	RRF	RRF
Analysis date:	12/19/06	03/19/07	03/20/07
Analysis time:	16:21	15:00	02:26
GC/MS I.D.:	V2	V2	V2
Analyte	Init.	Cont.	Cont.
1,4-Dioxane	0.001	0.001	0.001
1,4-Dioxane-d8	0.001	0.001	0.001

ASSOCIATED SAMPLES AND METHOD BLANKS

Initial, 12/19/07: All samples, method blank VBLKS1, and storage blank VHBLKS1
Cont., 03/19/07 (16:21): All samples, method blank VBLKS1, and storage blank VHBLKS1
Cont., 03/20/07 (02:26): All samples, method blank VBLKS1, and storage blank VHBLKS1.