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MEMORANDUM

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

THROUGH: Rose Fong, ESAT Task Order Project Officer (TOPO)
Quality Assurance (QA) Program, PMD-3

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

ESAT Contract No.: 68-W-01-028
Technical Direction Form No.: 00905072

DATE: February 22, 2006

SUBJECT: Review of Analytical Data, Tier 2

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

Site:	Omega Chem OU2 ACE
Site Account No.:	09 BC LA02
CERCLIS ID No.:	CAD042245001
Case No.:	None
SDG Nos.:	044466, 044485, 044539, 045575, 045594, 045611, 045621, 045657, 045709, and 045740
Laboratory:	Applied Physics & Chemistry Laboratory (APCL)
Analysis:	Hexavalent Chromium
Samples:	38 Groundwater Samples (see Case Summary)
Collection Dates:	September 13, 14, 16, November 30, December 1, 2, 3, 6, 8, and 9, 2004
Reviewer:	Stan Kott, ESAT/Laboratory Data Consultants

This report has been reviewed by the EPA TOPO 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

SAMPLING ISSUES: [X] Yes [ ] No

Data Validation Report

Case No.: None
SDG No.: 045674
Site: Omega Chem OU2 ACE
Laboratory: Applied Physics & Chemistry Laboratory (APCL)
Reviewer: Stan Kott, ESAT/LDC
Date: February 22, 2006

I. CASE SUMMARY

Sample Information

SDG 044466 Samples:	OC2-MW4A-W-0-58, OC2-MW4B-W-0-59, OC2-MW4B-W-1-60, and OC2-MW4C-W-0-61
SDG 044485 Samples:	OC2-MW1B-W-0-62, OC2-MW1A-W-0-63, OC2-MW2A-W-1-64, OC2-MW6A-W-0-65, and OC2-MW5A-W-0-66
SDG 044539 Samples:	OC2-MW7A-W-0-73, OC2-MW7A-W-1-74, OC2-MW3A-W-0-75, OC2-MW10A-W-0-76, and OC2-MW11A-W-0-77
SDG 045575 Samples:	OC2-OW7-W-5-79, OC2-OW4B-W-0-80, and OC2-OW4A-W-0-81
SDG 045594 Samples:	OC2-OW6-W-0-82, OC2-OW1B-W-0-83, and OC2-OW3-W-0-85
SDG 045611 Samples:	OC2-OW8B-W-0-88, OC2-OW5-W-0-86, OC2-OW5-W-1-87, and OC2-OW2-W-0-89
SDG 045621 Sample:	OC2- OW8-W-0-91
SDG 045657 Samples:	OC2-MW4A-W-0-92, OC2-MW4B-W-0-93, OC2-MW4B-W-1-94, OC2-MW4C-W-0-95, and OC2-MW5A-W-0-97
SDG 045709 Samples:	OC2-OW1A-W-0-90, OC2-MW10A-W-0-104, OC2-MW3A-W-0-105, and OC2-MW2A-W-0-106
SDG 045740 Samples:	OC2-MW8A-W-0-107, OC2-MW8B-W-0-108, OC2-MW8C-W-0-109, and OC2-MW8D-W-0-110
Concentration and Matrix:	Low Concentration Groundwater
Analysis:	Hexavalent Chromium
SOW:	EPA Method 218.6
Collection Date:	September 13, 14, 16, November 30, December 1, 2, 3, 6, 8, and 9, 2004
Sample Receipt Date:	September 13, 14, 16, November 30, December 1, 2, 3, 6, 8, and 9, 2004
Preparation Date:	September 13, 14, 16, November 30, December 1, 2, 3, 6, 8, and 9, 2004

Analysis Date: September 13, 14, 16, November 30, December 1, 2, 3, 6, 8, and 9, 2004

Field QC

Field Blanks (FB): Not Provided
Equipment Blanks (EB): Not Provided
Background Samples (BG): Not Provided
Field Duplicates (D1): OC2-MW4B-W-0-59 and OC2-MW4B-W-1-60
Field Duplicates (D2): OC2-MW7A-W-0-73 and OC2-MW7A-W-1-74
Field Duplicates (D3): OC2-OW5-W-0-86 and OC2-OW5-W-1-89
Field Duplicates (D4): OC2-MW4B-W-0-93 and OC2-MW4B-W-1-94

Laboratory QC

Method Blanks (MB): MB
Associated Samples: Samples listed above
Matrix Spike (MS): OC2-MW4B-W-1-60MS, OC2-MW2A-W-0-64MS, OC2-MW7A-W-0-73MS, OC2-OW7-W-5-79MS, OC2-OW6-W-0-82MS, OC2-OW5-W-1-87MS, OC2- OC2-MW4B-W-1-94MS, and OC2-MW8B-W-0-108MS
Duplicates (D): Laboratory Control Sample (LCS)/ LCS Duplicate (LCSD)

Analysis: Hexavalent Chromium

Analyte	Sample Preparation Date	Analysis Date
Hexavalent Chromium	September 13, 14, 16, 2004 November 30, 2004 December 1, 2, 3, 6, 8, 9, 2004	September 13, 14, 16, 2004 November 30, 2004 December 1, 2, 3, 6, 8, 9, 2004

Sampling Issues

The Chain of Custody (COC) record forms for all SDGs, except 045575, did not specify a sample to be used for laboratory quality control (QC). As a result, the laboratory selected a sample for QC analysis. The effect on data quality is not known.

Additional Comments

As directed by the EPA TOPO, a Tier 2 data review was performed (Tier 3-level review minus inspection of raw data and verification of results by independent calculation. Table 1A is not required).

The analytical method does not require analysis of a practical quantitation limit (PQL) standard to confirm linearity of the calibration curve at the 1 µg/L PQL. Since the laboratory analyzed a 0.2 µg/L standard that is near the PQL as part of the instrument calibration, this is not expected to have a significantly adverse effect on data quality for hexavalent chromium for samples less than or equal to two times the PQL.

This report was prepared in accordance with the following documents:

X Region 9 Standard Operating Procedure 906, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Inorganic Data Packages*; and

X *USEPA Method 218.6, Determination of Dissolved Hexavalent Chromium in Drinking Water, Groundwater, and Industrial Wastewater Effluents by Ion Chromatography*, Revision 3.2, April 1991.

II. VALIDATION SUMMARY

The data were evaluated based on the following parameters:

	Parameter	Acceptable	Comment
1.	Data Completeness	Yes	
2.	Sample Preservation and Holding Times	Yes	
3.	Calibration	No	A
	a. Initial		
	b. Initial and Continuing Calibration Verification		
4.	Blanks	Yes	
5.	Laboratory Control Sample (LCS)	Yes	
6.	Duplicate Sample Analysis	Yes	
7.	Matrix Spike Sample Analysis	Yes	
8.	Field Duplicate Sample Analysis	No	B
9.	Sample Quantitation	Yes	
10.	Overall Assessment	Yes	

N/A = Not Applicable

III. VALIDITY AND COMMENTS

A. The following results are estimated because initial calibration verification (ICV) and continuing calibration verification (CCV) standard results are outside method QC limits.

X Hexavalent chromium in samples OC2-MW7A-W-0-73, OC2-MW7A-W-1-74, OC2-MW10A-W-0-76, and OC2-MW11A-W-0-77 (SDG 044539)

The ICV and CCV recovery results for hexavalent chromium do not meet the 95-105% criterion for accuracy. The recovery for hexavalent chromium is presented below and is based on an ideal recovery of 100%.

Analyte	% Recovery
Hexavalent Chromium (ICV)	108
Hexavalent Chromium (CCV)	108

Results greater than or equal to the practical quantitation limit (PQL) are considered quantitatively uncertain. The results reported for hexavalent chromium in the samples listed above may be biased high.

The inorganic method indicates that the laboratory verify that the instrument is properly calibrated on a continuing basis. Laboratory reagent blank (LRB) and laboratory performance check standards (LPC) are analyzed after every 10 analytical samples to determine the validity of the calibration.

B. A relative percent difference (RPD) of 51 was obtained for hexavalent chromium in the analysis of field duplicate pair samples OC2-OW5-W-0-86 and OC2-OW5-W-1-87 (SDG 045611). Since sampling variability is included in the measurement, field duplicate results are expected to vary more than laboratory duplicates which have a ∀25 RPD criterion for precision. The effect on data quality is not known.

The analysis of field duplicate samples is a measure of both field and analytical precision. The imprecision in the results of the analysis of the field duplicate pair may be due to the sample matrix, high levels of solids in the sample, or poor sampling or laboratory technique.