

Data Validation Report

Project: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling
 Portland Harbor Superfund Site
 Surface Sediment – Downtown/Upriver Reaches

Laboratory: ALS Environmental, Kelso, WA

Laboratory Group: K1807967

Analyses/Method: Chlorinated Pesticides and Total Solids

Validation Level: Stage 2A

AECOM Project

Number: 60566335 Task #2.12

Prepared by: Lucy Panteleeff/AECOM

Completed on: October 30, 2018

Reviewed by: Jennifer Garner/AECOM

File Name: K1807967 DVR

SUMMARY

The data quality review of 4 surface sediment samples and one rinsate blank collected on August 18, 2018, has been completed. The samples were analyzed for chlorinated pesticides by EPA Method 1699-modified (GC/MS/MS) and/or total solids by EPA Method 160.3-modified at ALS Environmental (ALS) located in Kelso, Washington. The analyses were performed in general accordance with the methods specified in EPA's *Method 1699: Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS*, December 2007 (modified by ALS SOP SVM-PESTMS2) and *Methods for Chemical Analysis of Water and Wastes*, March 1983. The laboratory provided level 2 and level 4 data packages containing sample results and associated quality assurance (QA) and quality control (QC) data, preparation logs, and raw instrument outputs (where applicable). The following samples were associated with laboratory group K1807967:

Sample ID	Laboratory ID
PDI-SG-B473	K1807967-001
PDI-SG-B467	K1807967-002
PDI-SG-B465	K1807967-003
PDI-SG-B431	K1807967-004
PDI-RB-VV-180818 (rinsate blank)	K1807967-005

Data validation is based on method performance criteria and QC criteria documented in the *Quality Assurance Project Plan (QAPP)*, dated March 23, 2018, as amended. If data qualification was required, data were qualified based on the definitions and use of qualifying flags outlined in the EPA documents *USEPA National Functional Guidelines for Organic Superfund Methods Data Review*, January 2017, and *USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review*, January 2017. Data qualifiers assigned to results reported in this sample set are included in Table 1.

SAMPLE RECEIPT

Upon receipt by ALS, the sample jar information was compared to the chain-of-custody (COC) and the cooler temperature was recorded. No discrepancies related to sample identification were noted by ALS and the cooler was received at a temperature within the EPA-recommended limits of greater than 0°C and less than or equal to 6°C. The samples were received by the laboratory on August 21, 2018, and AECOM requested that the samples be placed on hold. The laboratory inadvertently extracted and analyzed the samples prior to authorization. Samples PDI-SG-B473, PDI-SG-B467,

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and PDI-SG-B465 were authorized for analysis on September 9, 2018, and the results for chlorinated pesticides and total solids were reported for these samples. Analysis of sample PDI-SG-B431 was cancelled at the request of AECOM; however, the sample had already been analyzed for total solids and this result was reported with this laboratory group.

ORGANIC ANALYSIS

The samples were analyzed for chlorinated pesticides by EPA Method 1699-modified.

1. Holding Times – Acceptable
2. Initial and Continuing Calibration Verifications – Acceptable except as noted below:

The percent difference (%D) for 2,4'-DDT (30.2%) exceeded the control limit of $\pm 25\%$ in the continuing calibration verification (CCV) analyzed on September 6, 2018, at 09:38. 2,4'-DDT was not detected in the associated samples; therefore, data were not qualified based on this CCV result.

The %D for heptachlor (-37.6%) was below the control limits of $\pm 25\%$ in the CCV analyzed on September 6, 2018, at 16:32. The result for heptachlor was qualified as estimated and flagged 'UJ' in the associated sample (rinsate blank) based on this CCV result.

3. Blanks – Acceptable

One rinsate blank was reported with this laboratory group and is associated with the sediment samples reported in K1807967. No target analytes were detected in PDI-RB-VV-180818.
4. Surrogates – Acceptable
5. Internal Standards – Acceptable
6. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) – Acceptable except as noted below:

The percent recoveries for the following analytes in the LCSs and/or the LCSDs were outside the control limits:

Extraction Date	Analyte	LCS	LCSD	Control limits
8/22/18 (sediments)	2,4'-DDT	124%	NA	77-118%
	alpha-Chlordane	176%	NA	74-130%
	cis-Nonachlor	196%	NA	69-134%
	gamma-Chlordane	177%	NA	76-128%
	trans-Nonachlor	175%	NA	76-124%
8/24/18 (rinsate blank)	2,4'-DDE	64%	70%	75-117%
	alpha-Chlordane	136%	152%	69-130%
	cis-Nonachlor	161%	194%	59-138%
	gamma-Chlordane	ok	145%	72-127%
	Heptachlor	67%	71%	81-115%
	trans-Nonachlor	141%	160%	72-127%

ok – acceptable

NA – not applicable

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2,4'-DDT, alpha-chlordane, cis-nonachlor, gamma-chlordane, and trans-nonachlor were not detected in the samples extracted on August 22, 2018; therefore, data were not qualified based on the associated LCS recoveries.

alpha-Chlordane, cis-nonachlor, gamma-chlordane, and trans-nonachlor were either not detected in the rinsate blank extracted on August 24, 2018, or 2 out of 3 quality control parameters (LCS, LCSD, and/or relative percent difference [RPD]) were acceptable; therefore, data were not qualified for these analytes based on these LCS/LCSD recoveries. The result for heptachlor in PDI-RB-VV-180818 was qualified as estimated based on the associated CCV result as described in Section 2; therefore, not further qualification for this analyte was necessary. The result for 2,4'-DDE in PDI-RB-VV-180818 was qualified as estimated and flagged 'UJ' based on these LCS/LCSD recoveries.

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

An MS/MSD was not performed in association with the rinsate blank. Precision and accuracy were assessed using the LCS/LCSD results.

An MS/MSD was performed using PDI-SG-B438 (laboratory group K1807859, discussed under separate cover). Data in this laboratory group were not qualified based on these MS/MSD results. Qualification, if any, is discussed in the associated data validation report.

8. Reporting Limits – Acceptable except as noted below:

The results for dieldrin in PDI-SG-B473 and 4,4'-DDD in PDI-SG-B465 were flagged 'J' by the laboratory to indicate the reported concentrations were above the method detection limits (MDLs) but below the reporting limits. Laboratory 'J'-flagged results are considered estimated. As the result is between the MDL and the reporting limit, there is a greater level of uncertainty associated with the numerical result.

The reporting limits for the chlorinated pesticides reported as not detected in these sediment samples were elevated due to the moisture content and/or lower extraction volume used due to matrix interference. The reporting limits and MDLs for dieldrin exceeded the cleanup level in all sediment samples reported in laboratory group K1807967.

CONVENTIONAL ANALYSIS

The samples were analyzed for total solids by EPA Method 160.3-modified.

1. Holding Times – Acceptable

2. Laboratory Duplicate – Acceptable

A laboratory duplicate was performed using PDI-SG-B473. Results were comparable.

3. Reporting Limits – Acceptable

OVERALL ASSESSMENT OF DATA

The data reported in this laboratory group is considered usable for meeting project objectives. The completeness for laboratory group K1807967 is 100%.

Table 1
QA/QC Data Summary Review
Portland Harbor
Surface Sediment - Downtown/Upriver Reaches
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Sample ID	Laboratory ID	Method	Analyte	Laboratory Result	Units	Final Result	Reason Code
PDI-RB-VV-180818	K1807967-005	CWA1699M	2,4-DDE	0.50 U	ng/L	0.50 UJ	I
PDI-RB-VV-180818	K1807967-005	CWA1699M	Heptachlor	1.0 U	ng/L	1.0 UJ	c

Notes:

- c - calibration issue
- J - estimated value
- I - laboratory control sample/laboratory control sample duplicate recovery
- ng/L - nanogram per liter
- U - Compound was analyzed for, but not detected above the value shown.