

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: K1808703

Analyses/Method: Chlorinated Pesticides and Total Solids

Validation Level: Stage 2A

AECOM Project

Number: 60566335 Task #2.12

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File Name: K1808703 DVR

SUMMARY

The data quality review of 2 surface sediment samples and one rinsate blank collected on September 7, 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 K1808703:

Sample ID	Laboratory ID
PDI-SG-B431	K1808703-001
PDI-SG-B479	K1808703-002
PDI-RB-VV-090718 (rinsate blank)	K1808703-003

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 September 11, 2018, and the sediments were placed on frozen hold. Samples PDI-SG-B479 and PDI-SG-B431 were authorized for analysis on September 26, and October 9, 2018, respectively. The rinsate blank was extracted and analyzed when received by the laboratory.

Data Validation Report
Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling
Surface Sediment – Downtown/Upriver Reaches
ALS Lab Group: K1808703

ORGANIC ANALYSIS

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

1. Holding Times – Acceptable

The sediment samples were extracted 14 (PDI-SG-B479) and 20 (PDI-SG-B431) days past the method-recommended holding time of 14 days. As describe above, the samples were frozen in archive until extraction and were thawed for less than 14 days; therefore, the samples were not extracted outside the holding time.

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

The percent differences (%Ds) for 2,4'-DDD (-30.4%), 4,4'-DDE (-37.9%), and dieldrin (-29.7%) were below the control limit of $\pm 25\%$ in the continuing calibration verification (CCV) analyzed on October 24, 2018. The samples associated with this CCV were batch quality control samples; therefore, data were not qualified based on these CCV results.

The %D for 4,4'-DDE (-39.5%) was below the control limits of $\pm 25\%$ in the CCV analyzed on October 25, 2018. The result for 4,4'-DDE in PDI-SG-B431 was qualified as estimated and flagged 'J' based on this CCV result.

3. Blanks – Acceptable except as noted below:

One rinsate blank (PDI-RB-VV-090718) was reported with this laboratory group. 4,4'-DDD (0.13 ng/L) was detected at a concentration between the method detection limit (MDL) and the reporting limit. Additional rinsate blanks may be associated with these samples and reported under separate cover. Target compounds may have been detected in the rinsate blanks associated with these samples. Sediment data were not qualified based on rinsate blank detections.

Aldrin (0.47 ng/L) was detected in the method blank extracted on September 14, 2018, at a concentration between the MDL and the reporting limit. Aldrin was not detected in the associated sample; therefore, data were not qualified based on this method blank result.

4. Surrogates – Acceptable

5. Internal Standards – Acceptable

6. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) – Acceptable

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

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-B479. Results were acceptable.

8. Reporting Limits – Acceptable except as noted below:

The results for 4,4'-DDD and 4,4'-DDE in PDI-SG-B431 and 4,4'-DDD in PDI-RB-VV-090718 were flagged 'J' by the laboratory to indicate the reported concentrations were above the



Data Validation Report

Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling

Surface Sediment – Downtown/Upriver Reaches

ALS Lab Group: K1808703

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 K1808703.

CONVENTIONAL ANALYSIS

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

1. Holding Times – Acceptable
2. Laboratory Duplicate – Acceptable

Laboratory duplicates were performed using two samples from projects unrelated to the Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling event. 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 K1808703 is 100%.

Table 1
QA/QC Data Summary Review
Portland Harbor
Surface Sediment - Downtown/Upriver Reaches
ALS Kelso Laboratory Group: K1808703

Sample ID	Laboratory ID	Method	Analyte	Laboratory Result	Units	Final Result	Reason Code
PDI-SG-B431	K1808703-001	CWA1699M	4,4'-DDE	0.30 J	ug/kg	0.30 J	c

Notes:

c - calibration issue
 J - estimated value
 ug/kg - microgram per kilogram