

Data Validation Report

Project: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling
Portland Harbor Superfund Site
Surface Sediment – Sediment Management Area

Laboratory: TestAmerica Laboratories, Incorporated, Seattle, WA

Laboratory Group: 580-79671-1

Analyses/Method: Polycyclic Aromatic Hydrocarbons (PAHs), Total Organic Carbon (TOC), Total Solids, and Grain Size

Validation Level: Stage 2A

AECOM Project

Number: 60566335 Task #2.12

Prepared by: Chelsey Cook/AECOM

Completed on: October 16, 2018

Reviewed by: Amy Dahl/AECOM

File Name: 580-79671-1 DVR

SUMMARY

The data quality review of one surface sediment sample collected on August 16, 2018, has been completed. Samples were analyzed for PAHs by EPA Method 8270D modified by selected ion monitoring (SIM), TOC by EPA Method 9060, total solids by American Society for Testing and Materials (ASTM) Method D-2216, moisture content at 70 degrees Celsius (°C), and grain size by ASTM Method D7928/D6913 by TestAmerica Laboratories, Incorporated (TA) located in Tacoma, Washington. The analyses were performed in general accordance with the methods specified in EPA's *Test Methods for Evaluating Solid Waste (SW-846)* and Annual Book of ASTM Standards, Philadelphia, Pennsylvania. The laboratory provided level 2 and level 4 data packages containing sample results, associated quality assurance (QA) and quality control (QC) data, preparation logs, and raw instrument outputs (where applicable). The following samples are associated with laboratory group 580-79671-1:

Sample ID	Laboratory ID
PDI-SG-S167	580-79671-1

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 this sample set are included in Table 1.

SAMPLE RECEIPT

Upon receipt by TA, the sample jar information was compared to the chain-of-custody (COC) and the cooler temperature was recorded. 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. No discrepancies related to sample identification were noted by TA.

ORGANIC ANALYSES

Samples were analyzed for PAHs by EPA Method 8270D SIM.

Data Validation Report

Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling

Surface Sediment – Sediment Management Area

TestAmerica Lab Group: 580-79671-1

1. Holding Times – Acceptable

The laboratory placed the PAH containers in freezer storage on August 28, 2018, to extend the holding time. The sample was thawed on October 2, 2018, and prepped for analysis on October 3, 2018, within holding time.

2. Blanks – Acceptable except as noted below:

A rinsate blank was not submitted with this laboratory group. Associated rinsate blanks are reported under separate cover. Target compounds may have been detected in the rinsate blanks associated with these samples. Data were not qualified based on rinsate blank results.

3. Surrogates – Acceptable except as noted below:

The percent recovery for the surrogate terphenyl-d14 (55%) was below the control limits of 57-120% in PDI-SG-S167. The sample was analyzed at a 10x dilution; therefore, data were not qualified based on this surrogate recovery.

4. Laboratory Control Sample (LCS) – Acceptable except as noted below:

The percent recovery for acenaphthylene in the LCS (66%) associated with analytical batch 285848 was below the control limits of 68-120%. The result for acenaphthylene in PDI-SG-S167 was qualified as estimated and flagged 'J' based on this LCS recovery.

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

An MS/MSD was not analyzed using the sample in this laboratory group. Accuracy was assessed using the LCS. Precision was not assessed.

6. Reporting Limits – Acceptable

The reporting limits for PDI-SG-S167 were raised because of the dilution that was required prior to analysis due to the nature of the sample matrix. The reporting limit for dibenz(a,h)anthracene reported as not detected exceeded the cleanup level for carcinogenic PAHs but the MDL did not.

One or more results were flagged 'J' by the laboratory to indicate the reported concentrations were above the 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.

CONVENTIONAL ANALYSES

Samples were analyzed for TOC and total solids by the methods identified in the introduction to this report.

1. Holding Times – Acceptable except as noted below:

Total Solids by ASTM Method D-2216/Moisture Content at 70°C – The 7-day holding time indicated for total solids in the QAPP was exceeded for PDI-SG-S167 by 12-27 days. No data qualifiers were assigned based on the holding time exceedance.

Data Validation Report

Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling

Surface Sediment – Sediment Management Area

TestAmerica Lab Group: 580-79671-1

2. Blanks – Acceptable

TOC by EPA Method 9060 – A rinsate blank was not submitted with this laboratory group. Associated rinsate blanks are reported under separate cover. Target compounds may have been detected in the rinsate blanks associated with these samples. Data were not qualified based on rinsate blank results.

3. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) - Acceptable

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

TOC by Method 9060 – An MS/MSD was not performed using a sample from this laboratory group. Accuracy and precision were assessed using the LCS/LCSD.

5. Laboratory Replicate

General – Laboratory duplicates were not performed using the sample from this laboratory group in association with these analyses. Precision was assessed using the LCS/LCSD where applicable.

6. Reporting Limits – Acceptable

GRAIN SIZE ANALYSES

Samples were analyzed for grain size by the methods identified in the introduction to this report. The data were reviewed to confirm that the required grain size fractions identified in the QAPP were reported for each sample.

1. Laboratory Duplicate

The laboratory performed duplicate analysis at a rate of 1 per 20 samples per their internal requirements. A laboratory duplicate was not performed using a sample from this laboratory group.

OVERALL ASSESSMENT OF DATA

The data reported in this laboratory group, as qualified, is considered usable for meeting project objectives. The completeness for laboratory group 580-79671-1 is 100%.

Table 1
QA/QC Data Summary Review
Portland Harbor
Surface Sediment - Sediment Management Area
TestAmerica Laboratory Group: 580-79671-1

Sample ID	Laboratory ID	Method	Analyte	Laboratory Result	Units	Final Result	Reason Code
PDI-SG-S167	580-79671-1	SW8270DSIM	Acenaphthylene	4.4 J	ug/kg	4.4 J	I

J - estimated value

I - LCS recoveries

LCS - laboratory control sample

ug/kg - microgram per kilogram