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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:	580-77797-1
Analyses:	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: August 20, 2018
Reviewed by:	Karen Mixon/AECOM — File Name: 580-77797-1 DVR

SUMMARY

The data quality review of 11 surface sediment samples collected between May 3 and May 14, 2018, has been completed. Samples were analyzed for TOC by EPA Method 9060, total solids by American Society for Testing and Materials (ASTM) Method D-2216, moisture content at 70 degrees centigrade (70°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, American Society for Testing & Materials (ASTM), 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 580-77797-1:

Sample ID	Laboratory ID
PDI-SG-S204	580-77797-1
PDI-SG-S147	580-77797-2
PDI-SG-S084	580-77797-3
PDI-SG-S090	580-77797-4
PDI-SG-S010	580-77797-5
PDI-SG-S255	580-77797-6
PDI-SG-S097	580-77797-7
PDI-SG-S115	580-77797-8
PDI-SG-S078	580-77797-9
PDI-SG-S135	580-77797-10
PDI-SG-S157	580-77797-11

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 document *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 temperatures were recorded. The coolers were received at temperatures within the EPA-recommended limits of greater than 0°C and less than or equal to 6°C. All the samples in this laboratory group were frozen at the field warehouse after sampling until they were shipped to TA on May 25, 2018. When they were received by the laboratory they were frozen and placed on hold. On June 7, 2018, all samples were released by AECOM for analysis and TA was instructed to make a note on the COC. The sample date for PDI-SG-S204 was noted incorrectly on the COC as 5/3/18. It was confirmed by AECOM that the correct sample date was 5/2/18. The sample date was updated in the database to reflect the correct sample time.

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 D-2216 – The 7-day holding time indicated for total solids in the QAPP was exceeded for the samples in this laboratory group as the samples were temporarily held in freezer storage before shipping to TA. Total solids were analyzed within the time that other analyses were performed for samples in this laboratory group. No data qualifiers were assigned based on the holding time exceedance.

   Moisture Content at 70°C – The 7-day holding time indicated for total solids in the QAPP was exceeded for the samples in this laboratory group as the samples were temporarily held in freezer storage before shipping to TA. Total solids were analyzed within the time that other analyses were performed for samples in this laboratory group. No data qualifiers were assigned based on the holding time exceedance.

2. Blanks – Acceptable where applicable, except as noted below:

   TOC by Method 9060 – Six rinsate blanks were collected between May 2 and May 14, 2018, were reported with laboratory groups 580-77073 (ID 580-77073-28), 580-77110 (ID 580-77110-29), 580-77177 (ID 580-77177-17), 580-77291 (IDs 580-77291-29 and 580-77291-30), and 580-77301 (ID 580-77301-11), and are applicable to the samples reported in this laboratory group. TOC was detected in 580-77073-28 (0.29 mg/L), 580-77110-29 (0.48 mg/L), and 580-77177-17 (0.43 mg/L) but was qualified as not detected based on the associated method blanks. TOC was detected in 580-77291-29 (0.28 mg/L), 580-77291-30 (0.30 mg/L), and 580-77301-11 (0.31 mg/L) at concentrations below the reporting limits but above the method detection limits (MDLs). 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 report. Precision and accuracy were assessed using the LCS/LCSD.

5. Laboratory Replicate – Acceptable except as noted below:

   TOC by Method 9060 – A laboratory duplicate and triplicate were not performed using a sample from this laboratory report. Precision and accuracy were assessed using the LCS/LCSD.

   Total Solids by Method D2216 – A laboratory duplicate was performed using PDI-SG-S204. Results were comparable.

6. Reporting Limits – Acceptable except as noted below:

   TOC by SM 5310B – Analyte concentrations detected between the MDL and the reporting limit are reported by the laboratory with a 'J' flag. TOC in PDI-SG-S084 was detected below the reporting limit but above the MDL and flagged 'J' by the laboratory. Laboratory 'J'-flagged results are considered estimated results. As the result is between the MDL and the reporting limit, there is a greater level of uncertainty associated with the numerical result.

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. As indicated under sample receipt, the sample volume used for grain size analysis was frozen prior to the analysis. No data qualifiers were assigned to grain size results based on sample condition.

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 580-77797-1 is 100%.

Table 1
QA/QC Data Summary Review
Portland Harbor
Surface Sediment - Sediment Management Area
TestAmerica Laboratory Group: 580-77797-1

Sample ID	Laboratory ID	Method	Analyte	Laboratory Result	Units	Final Result	Reason Code
No data qualifiers were assigned to results reported in 580-77797-1 based on this data validation.							