

Data Validation Report

Project: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling
 Portland Harbor Superfund Site
 Surface Water – August 2018

Laboratory: TestAmerica Laboratories, Incorporated, Seattle, WA

Laboratory Group: 580-79894-1

Analyses: Ethylbenzene, Methylchlorophenoxypropionic Acid (MCP), Metals, Total Hardness by calculation, Total Organic Carbon (TOC), Dissolved Organic Carbon (DOC), Total Suspended Solids (TSS), and Total Dissolved Solids (TDS)

Validation Level: Stage 2A

AECOM Project
 Number: 60566335, Task #2.12

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SUMMARY

The data quality review of 12 surface water samples and 3 trip blanks collected on August 24 and August 25, 2018, has been completed. Samples were analyzed for ethylbenzene by United States Environmental Protection Agency (EPA) Method 8260C, MCP by EPA Method 8151A, metals by EPA Methods 6010C (dissolved calcium and magnesium) and 6020B (total and dissolved arsenic, chromium, copper, and zinc), total hardness by Standard Method (SM) 2340B, TOC and DOC by SM 5310B, TSS by SM 2540D, and TDS by SM 2540C 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 *Standard Methods for the Examination of Water and Wastewater*. 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 are associated with laboratory group 580-79894-1:

Sample ID	Laboratory ID
PDI-WS-T02-1808	580-79894-1
PDI-WS-T06-1808	580-79894-2
PDI-WS-T01-1808	580-79894-3
PDI-WS-T01W-1808	580-79894-4
PDI-WS-T02W-1808	580-79894-5
PDI-WS-T02N-1808	580-79894-6
PDI-WS-T02E-1808	580-79894-7
PDI-WS-T06NAV-1808	580-79894-8
PDI-WS-T06E-1808	580-79894-9
Trip Blank-T06	580-79894-10
PDI-WS-T06W-1808	580-79894-11
PDI-WS-T01N-1808	580-79894-12
PDI-WS-T01E-1808	580-79894-13
Trip Blank-T01	580-79894-14
Trip Blank-T02	580-79894-15



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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 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. The laboratory noted that several sample IDs and collection dates and times were changed as directed by AECOM because of errors on the original COC. PDI-WS-T06NAV-1808 was submitted with the incorrect sample ID nomenclature and was updated in the database to PDI-WS-T06N-1808. This data validation report refers to the samples as identified on the COC and in the laboratory reports.

ORGANIC ANALYSES

Samples were analyzed for ethylbenzene and MCPB by the methods identified in the introduction of this report.

1. Holding Times – Acceptable
2. Blanks – Acceptable except as noted below

General – One rinsate blank was reported with laboratory group 580-79792-1 and is applicable to the samples reported with this laboratory group. Ethylbenzene (0.85 ug/L) was detected in the rinsate blank at a concentration between the method detection limit (MDL) and the reporting limit. Ethylbenzene was not detected in the associated samples; therefore, data were not qualified based on the rinsate blank detection.

3. Surrogates – Acceptable
4. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) – Acceptable
5. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

General – MS/MSDs were not performed using a sample from this laboratory group. Precision and accuracy were assessed using the LCS/LCSD results.

6. Reporting Limits – Acceptable

METALS ANALYSES

Samples were analyzed for metals and calculated for hardness by the methods identified in the introduction to this report.

1. Holding Times – Acceptable

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2. Blanks – Acceptable except as noted below:

General – One rinsate blank was reported with laboratory group 580-79792-1 and is applicable to the samples reported with this laboratory group. Total chromium (0.18 ug/L) and dissolved zinc (2.9 ug/L) were detected in this rinsate blank at concentrations between the MDLs and the reporting limits and dissolved chromium (0.76 ug/L) was detected in this rinsate blank at a concentration greater than the reporting limit. Total chromium in PDI-WS-T02-1808, PDI-WS-T06-1808, and PDI-WS-T01-1808 and dissolved chromium and dissolved zinc in PDI-WS-T06-1808 and PDI-WS-T01-1808 were detected at concentrations between the MDLs and the reporting limits; therefore, the results were qualified as not detected and flagged 'U' at the reporting limits.

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

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) and Post Digestion Spike (PDS, where applicable)

General – MS/MSDs were not performed using a sample from this laboratory group. Precision and accuracy were assessed using the LCS/LCSD results.

5. Laboratory Duplicate

General – Laboratory duplicates were not performed using a sample from this laboratory group. Precision was assessed using the LCS/LCSD.

6. Serial Dilution

General – Serial dilutions were not performed using a sample from this laboratory group. Precision was assessed using the LCS/LCSD.

7. Reporting Limits – Acceptable

General – Analyte concentrations detected between the MDLs and the reporting limits are reported by the laboratory with 'J' flags. One or more results were flagged 'J' by the laboratory. Laboratory 'J'-flagged results are considered estimated results. As the results are between the MDLs and the reporting limits, there is a greater level of uncertainty associated with the numerical results.

CONVENTIONAL ANALYSES

Samples were analyzed for TOC, DOC, TSS, and TDS by the methods identified in the introduction to this report.

1. Holding Times – Acceptable

2. Blanks – Acceptable except as noted below:

General – One rinsate blank was reported with laboratory group 580-79792-1 and is applicable to the samples reported with this laboratory group. TOC (0.72 mg/L) and DOC (0.73 mg/L) were detected at concentrations between the MDLs and the reporting limits. TOC and DOC were detected in PDI-WS-T02-1808, PDI-WS-T06-1808, and PDI-WS-T01-1808 at concentrations greater than the reporting limits but less than ten times the rinsate



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blank results; therefore, the results were qualified as estimated and flagged 'J' based on the rinsate blank results.

3. Laboratory Control Sample (LCS) – Acceptable
4. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

General – MS/MSDs were not performed using a sample from this laboratory group. Accuracy was assessed using the LCS results. Precision was not assessed.

5. Laboratory Duplicate – Acceptable

TOC/DOC by Method 5310B – Laboratory duplicates were not performed using a sample from this laboratory group. Accuracy was assessed using the LCS. Precision was not assessed.

TSS by Method 2540D – A laboratory duplicate was performed using PDI-WS-T02-1808. Results were comparable.

TDS by Method 2540C – A laboratory duplicate was performed using PDI-WS-T02-1808. Results were comparable.

6. Reporting Limits – Acceptable

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 580-79894-1 is 100%.

Table 1
QA/QC Data Summary Review
Portland Harbor
Surface Water - August 2018
TestAmerica Laboratory Group: 580-79894-1

Sample ID	Laboratory ID	Method	Analyte	Fraction	Laboratory Result	Units	Final Result	Reason Code
PDI-WS-T02-1808	580-79894-1	SM5310B	Dissolved Organic Carbon	D	2.0	mg/L	2.0 J	be
PDI-WS-T02-1808	580-79894-1	SM5310B	Total Organic Carbon	T	2.0	mg/L	2.0 J	be
PDI-WS-T02-1808	580-79894-1	SW6020B	Chromium	T	0.32 J	ug/L	0.40 U	be
PDI-WS-T06-1808	580-79894-2	SM5310B	Dissolved Organic Carbon	D	3.2	mg/L	3.2 J	be
PDI-WS-T06-1808	580-79894-2	SM5310B	Total Organic Carbon	T	2.8	mg/L	2.8 J	be
PDI-WS-T06-1808	580-79894-2	SW6020B	Chromium	D	0.24 J	ug/L	0.40 U	be
PDI-WS-T06-1808	580-79894-2	SW6020B	Chromium	T	0.30 J	ug/L	0.40 U	be
PDI-WS-T06-1808	580-79894-2	SW6020B	Zinc	D	2.0 J	ug/L	7.0 U	be
PDI-WS-T01-1808	580-79894-3	SM5310B	Dissolved Organic Carbon	D	2.3	mg/L	2.3 J	be
PDI-WS-T01-1808	580-79894-3	SM5310B	Total Organic Carbon	T	2.0	mg/L	2.0 J	be
PDI-WS-T01-1808	580-79894-3	SW6020B	Chromium	D	0.25 J	ug/L	0.40 U	be
PDI-WS-T01-1808	580-79894-3	SW6020B	Chromium	T	0.28 J	ug/L	0.40 U	be
PDI-WS-T01-1808	580-79894-3	SW6020B	Zinc	D	2.8 J	ug/L	7.0 U	be

be - equipment blank contamination

D - dissolved fraction

J - estimated value

mg/L - milligram per liter

T - total fraction

U - Compound was analyzed for, but not detected above the value shown.

ug/L - microgram per liter

Note: Line items where the laboratory result contains a "J" and the final result contains a "U" with a data validation reason code "be" indicate that the final result is reported as not detected ("U" flag) at the reporting limit.