

Data Validation Report

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

Laboratory: ALS Environmental, Kelso, WA

Laboratory Group: K1808117

Analyses/Method: Tributyltin, bis(2-Ethylhexyl)phthalate, and Pentachlorophenol (PCP)

Validation Level: Stage 2

AECOM Project

Number: 60566335 Task #2.12

Prepared by: Chelsey Cook/AECOM

Completed on: January 7, 2019

Reviewed by: Jennifer Garner/AECOM

File Name: K1808117 DVR

SUMMARY

The data quality review of 4 surface water samples collected between August 21 and August 23, 2018, has been completed. The samples were analyzed for tributyltin by Unger et al. and low-level bis(2-ethylhexyl)phthalate and PCP by EPA Method 8270D by ALS Environmental (ALS) located in Kelso, Washington. The analyses were performed in general accordance with the methods specified in EPA's *Test Methods for Evaluating Solid Waste (SW-846)* and Unger, MA et al., *Determination of Butyltins in Natural Waters by Flame Photometric Detection of Hexane Derivatives and Mass Spectrometric Confirmation, Chemosphere, 1886,16(4):461-470*. 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 K1808117:

Sample ID	Laboratory ID
PDI-WS-T03-1808	K1808117-001
PDI-WS-T04-1808	K1808117-002
PDI-WS-T07-1808	K1808117-003
PDI-WS-T05-1808	K1808117-004

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 Organic 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. The coolers were received at temperatures above the EPA-recommended limits of greater than 0°C and less than or equal to 6°C at 6.1°C and 7.4°C. Data qualifiers were not assigned based on the elevated cooler temperatures. Only five of the six bottles for PDI-WS-T07-1808 were received in the coolers associated with this laboratory group. The remaining bottle was shipped with laboratory group K1808140 and received on August 27, 2018.

Data Validation Report
Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling
Surface Water – August 2018
ALS Lab Group: K1808117

ORGANIC ANALYSES

Samples were analyzed for tributyltin, bis(2-ethylhexyl)phthalate, and PCP by the methods identified in the introduction of this report.

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

General – One rinsate blank was reported with laboratory group K1807964 and is applicable to the samples reported with this laboratory group. bis(2-Ethylhexyl)phthalate (0.41 ug/L) was detected in the rinsate blank at a concentration between the method detection limit (MDL) and the reporting limit. bis(2-Ethylhexyl)phthalate was detected in PDI-WS-T04-1808 at a concentration between the reporting limit and the MDL; therefore, this result was qualified as not detected and flagged 'U' at the reporting limit.

4. Surrogates – Acceptable except as noted below:

bis(2-Ethylhexyl)phthalate and PCP by EPA 8270D – The percent recoveries for the surrogate p-terphenyl-d14 in PDI-WS-T04-1808 (36%), the matrix spike (MS) performed using PDI-WS-T07-1808 (46%), and the MS (39%) and matrix spike duplicate (MSD, 41%) performed using PDI-WS-T01-1808 (reported under separate cover in laboratory group K1808140) were outside of the control limits of 48-109%. The result for bis(2-ethylhexyl)phthalate in PDI-WS-T04-1808 was qualified as estimated and flagged 'UJ' based on this low surrogate recovery. Data were not qualified based on surrogates in QC samples.

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

bis(2-Ethylhexyl)phthalate and PCP by EPA 8270D – The percent recovery for bis(2-ethylhexyl)phthalate in the LCS (33%) associated with analytical batch KQ1811891 was below the control limits of 42-147%. The results for bis(2-ethylhexyl)phthalate in PDI-WS-T03-1808, PDI-WS-T07-1808, and PDI-WS-T05-1808 were qualified as estimated and flagged 'J' or 'UJ' based on this low LCS recovery. bis(2-Ethylhexyl)phthalate was qualified as estimated and flagged 'UJ' in PDI-WS-T04-1808 based on the associated surrogate recovery and no further qualification was necessary based on the LCS.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) – Acceptable except as noted below:

Tributyltin by Unger et al. – An MS/MSD was performed using PDI-WS-T07-1808. Results were acceptable.

bis(2-Ethylhexyl)phthalate and PCP by EPA 8270D – An MS/MSD was performed using PDI-WS-T07-1808. The relative percent difference (RPD) for bis(2-ethylhexyl)phthalate (52%) exceeded the control limit of 30%. The percent recoveries in the MS and MSD were acceptable; therefore, data were not qualified based on this elevated RPD.

An MS/MSD was performed using PDI-WS-T01-1808 (reported under separate cover in laboratory group K1808140). 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.



Data Validation Report

Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling

Surface Water – August 2018

ALS Lab Group: K1808117

7. Reporting Limits – Acceptable except as noted below:

bis(2-ethylhexyl)phthalate and PCP by EPA 8270D – Analyte concentrations detected between the MDL and the reporting limit are reported by the laboratory with a 'J' flag. The result for bis(2-ethylhexyl)phthalate in PDI-WS-T04-1808 was flagged 'J' by the laboratory; however, this result was flagged 'U' based on the associated rinsate blank result. 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.

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 K1808117 is 100%.

Table 1
QA/QC Data Summary Review
Portland Harbor
Surface Water - August 2018
ALS Laboratory Group: K1808117

Sample ID	Laboratory ID	Method	Analyte	Laboratory Result	Units	Final Result	Reason Code
PDI-WS-T03-1808	K1808117-001	SW8270D	Bis(2-ethylhexyl)phthalate	0.95 U	ug/L	0.95 UJ	I
PDI-WS-T04-1808	K1808117-002	SW8270D	Bis(2-ethylhexyl)phthalate	0.14 J	ug/L	1.0 UJ	be,s
PDI-WS-T07-1808	K1808117-003	SW8270D	Bis(2-ethylhexyl)phthalate	1.1	ug/L	1.1 J	I
PDI-WS-T05-1808	K1808117-004	SW8270D	Bis(2-ethylhexyl)phthalate	0.94 U	ug/L	0.94 UJ	I

Notes:

be - equipment blank contamination

I - LCS recovery

s - surrogate recovery

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.