

# 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: K1808140

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

Validation Level: Stage 2

AECOM Project

Number: 60566335 Task #2.12

Prepared by: Lucy Panteleeff/AECOM

Completed on: January 3, 2019

Reviewed by: Jennifer B. Garner/AECOM

File Name: K1808140 DVR

## SUMMARY

The data quality review of 4 surface water samples collected on August 24 and August 25, 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 K1808140:

Sample ID	Laboratory ID
PDI-WS-T02-1808	K1808140-001
PDI-WS-T02-1808D (Duplicate of PDI-WS-T02-1808)	K1808140-002
PDI-WS-T06-1808	K1808140-003
PDI-WS-T01-1808	K1808140-004

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 temperatures were recorded. No discrepancies related to sample identification were noted by ALS and the coolers were received at temperatures within the EPA-recommended limits of greater than 0°C and less than or equal to 6°C. One bottle for PDI-WS-T07-1808 (reported with laboratory group K1808177) was received in the coolers associated with this laboratory group.

**Data Validation Report**  
**Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling**  
**Surface Water – August 2018**  
**ALS Lab Group: K1808140**

## 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-T02-1808 and PDI-WS-T01-1808 at concentrations between the reporting limits and the MDLs; therefore, the results for bis(2-ethylhexyl)phthalate in these samples were qualified as not detected and flagged ‘U’ at the reporting limits.

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 were outside of the control limits of 48-109% in the following samples.

Sample	Percent Recovery
PDI-WS-T02-1808D	38%
PDI-WS-T07-1808 (matrix spike)*	46%
PDI-WS-T01-1808 (matrix spike)	39%
PDI-WS-T01-1808 (matrix spike duplicate)	41%

\*reported under separate cover in laboratory group K1808177

Data were not qualified based on surrogate outliers in QC samples (matrix spike and matrix spike duplicate). The result for bis(2-ethylhexyl)phthalate in PDI-WS-T02-1808D was qualified as estimated and flagged ‘UJ’ based on the surrogate recovery.

5. Internal Standards - Acceptable
6. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) – Acceptable except as noted below:

bis(2-Ethylhexyl)phthalate and PCP by EPA 8270D – The percent recovery for bis(2-ethylhexyl)phthalate (33%) was outside the control limits of 42-147% in the LCS extracted on August 28, 2018. The result for bis(2-ethylhexyl)phthalate in PDI-WS-T02-1808D was qualified based on surrogate recovery; therefore, no further qualification based on this LCS was required for this sample. The results for bis(2-ethylhexyl)phthalate in PDI-WS-T02-1808, PDI-WS-T06-1808, and PDI-WS-T01-1808 were qualified as estimated and flagged ‘UJ’ based on this LCS recovery.



**Data Validation Report**  
**Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling**  
**Surface Water – August 2018**  
**ALS Lab Group: K1808140**

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

Tributyl Tin by Unger et al. – An MS/MSD was not performed using a sample reported in this laboratory group. Precision and accuracy were assessed using the LCS/LCSD results.

bis(2-Ethylhexyl)phthalate and PCP by EPA 8270D – An MS/MSD was performed using PDI-WS-T01-1808. The relative percent differences (RPDs) for bis(2-ethylhexyl)phthalate (34%) and PCP (34%) exceeded the control limit of 30%. The percent recoveries for bis(2-ethylhexyl)phthalate and PCP in the MS and MSD were acceptable; therefore, data were not qualified based on these RPDs.

An MS/MSD was performed using PDI-WS-T07-1808 (reported under separate cover in laboratory group K1808117). 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.

8. Field Duplicate – Acceptable except as noted below:

General – A field duplicate was submitted for PDI-WS-T02-1808 and identified as PDI-WS-T02-1808D. Results were comparable.

9. Reporting Limits – Acceptable except as noted below:

bis(2-ethylhexyl)phthalate and PCP by EPA 8270D – The results for bis(2-ethylhexyl)phthalate in PDI-WS-T02-1808 and PDI-WS-T01-1808 were flagged 'J' by the laboratory to indicate the reported concentrations were above the MDLs but below the reporting limits. The results for bis(2-ethylhexyl)phthalate in these samples were flagged 'U' based on the associated rinsate blank result. 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.

**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 K1808140 is 100%.

**Table 1**  
**QA/QC Data Summary Review**  
**Portland Harbor**  
**Surface Water - August 2018**  
**ALS Kelso Laboratory Group: K1808140**

Sample ID	Laboratory ID	Method	Analyte	Laboratory Result	Units	Final Result	Reason Code
PDI-WS-T02-1808	K1808140-001	SW8270D	bis(2-Ethylhexyl)phthalate	0.14 J	ug/L	1.0 UJ	be,l
PDI-WS-T02-1808D	K1808140-002	SW8270D	bis(2-Ethylhexyl)phthalate	1.0 U	ug/L	1.0 UJ	s
PDI-WS-T06-1808	K1808140-003	SW8270D	bis(2-Ethylhexyl)phthalate	0.94 U	ug/L	0.94 UJ	l
PDI-WS-T01-1808	K1808140-004	SW8270D	bis(2-Ethylhexyl)phthalate	0.14 J	ug/L	1.0 UJ	be,l

**Notes:**

be - equipment blank contamination

J - estimated value

l - laboratory control sample recoveries

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.