

Data Validation Report

Project:	Portland Harbor
Laboratory:	Alpha Analytical Laboratory
Environmental Test Record (ETR):	1410006
Analyses/Method:	Polycyclic Aromatic Hydrocarbons (PAH)

Summary

Sixteen solvent extracts were analyzed for polycyclic aromatic hydrocarbons (PAH) by EPA Method 8270D modified by selected ion monitoring mode (SIM) by Alpha Analytical Laboratory located in Mansfield, Massachusetts. The laboratory provided Level 4 data packages containing samples results and associated quality assurance (QA) and quality control (QC) data, preparation logs, and raw instrument output. The following samples are associated with the laboratory ETR 1410006.

Sample ID	Lab ID	Matrix
PH14-T04-S	1410006-01	Extract
PH14-T04-Z	1410006-02	Extract
PH14-T04-Z-D	1410006-03	Extract
PH14-T03-S	1410006-04	Extract
PH14-T03-Z	1410006-05	Extract
PH14-T08-S	1410006-06	Extract
PH14-T08-Z	1410006-07	Extract
PH14-T09-S	1410006-08	Extract
PH14-T05-S	1410006-09	Extract
PH14-T06-S	1410006-10	Extract
PH14-T07-S	1410006-11	Extract
PH14-T10-S	1410006-12	Extract
PH14-T09-Z	1410006-13	Extract
Solvent Blank	1410006-14	Extract
Verification Standards PAH 16 plus BeP (150 ppb)	1410006-15	Extract
Verification Standards Deuterated PAH (150 ppb)	1410006-16	Extract

The data have been independently validated using *USEPA Contact Laboratory Program National Functional Guidelines for Organic Superfund Methods Data Review* EPA-540-R-2017-002, dated January 2017. Validation includes reconstruction of the analytical data to verify that data are traceable and sufficiently complete in order for a qualified individual other than the originator to perform reconstruction of the data. The validation included the following checks:

- Sample Receipt/Transcription error check
- Sample preservation
- Sample holding times



- Tune Summary
- Initial calibration
- Continuing calibration verification (CCV)
- Laboratory blank contamination
- Internal Standard recoveries
- Laboratory control sample (LCS), LCS Duplicate (LCSD) recoveries, RPD values
- Calculation checks
- Contract Required Quantitation Limit (CRQL)
- Field duplicate results
- Overall assessment of the data

Data validation is based on the QC criteria documented in *Ex-Situ Porewater Measurements for Sediment Assessment Portland Harbor Sampling and Analysis Plan*,¹ dated July 21, 2014, *Portland Harbor Sediment Forensic Chemistry Study, Portland Harbor Oregon Quality Assurance Project Plan (QAPP)*,² dated July 29, 2014, and the *Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling Quality Assurance Project Plan (QAPP)*,³ dated March 23, 2018. Data qualifiers assigned to results reported in this sample set are included in Table 1. There were no data qualifiers assigned to the samples in this data set.

Sample Receipt

Chain of custody documentation were reviewed for completeness of information relevant to the samples and requested analysis. Sample IDs and sample collection dates from the chain of custody records were matched to the reported data. No discrepancies noted.

The cooler received was above $4 \pm 2^\circ\text{C}$. Data were not qualified based on the elevated cooler temperature.

ORGANIC ANALYSES

Holding Time and Sample Preservation

All samples were extracted and analyzed within holding times.

GC/MS Instrument Performance Check – Acceptable

Initial Calibration and Continuing Calibration Verifications – Acceptable

Blanks– Acceptable except as noted below:

Method Blank: The method blank met the QC acceptance criteria for PAH. PAH were detected in the method blank below the reporting limit. However, with the exception of the analytes below, the associated sediment sample results were either non-detect or were greater than 10X the blank

¹ University of Texas. (2014). *Ex-Situ Porewater Measurements for Sediment Assessment Portland Harbor Sampling and Analysis Plan*. July 21, 2014.

² NewFields. (2014). *Portland Harbor Sediment Forensic Chemistry Study, Portland Harbor Oregon Quality Assurance Project Plan (QAPP)*. July 29, 2014.

³ AECOM and Geosyntec. 2018. *Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling Portland Harbor Superfund Site, Quality Assurance Project Plan*. March 23, 2018,



concentration. Samples containing the below listed analytes at concentrations below the reporting limit were qualified as not detected, and were flagged “U” at the reporting limit based on the method blank result.

PAH Compounds	Result	Unit	Lab Qualifier
Naphthalene	0.557	ng/extract	J
C1-Naphthalenes	0.697	ng/extract	J
Biphenyl	1.43	ng/extract	J
Phenanthrene	1.36	ng/extract	J
Dibenzothiophene	0.162	ng/extract	J
Fluoranthene	0.939	ng/extract	J
Pyrene	1.20	ng/extract	J
Benz[a]anthracene	0.121	ng/extract	J
Chrysene/Triphenylene	0.267	ng/extract	J
2-Methylnaphthalene	0.424	ng/extract	J
1-Methylnaphthalene	0.281	ng/extract	J

Surrogate Spikes – Due to the experimental design and for the intended use of the data, the surrogate recoveries were not calculated. The data was not qualified.

Internal Standard Areas – Acceptable.

Laboratory Control Samples – Acceptable.

Matrix Spike/Spike Duplicate – There were no MS/MSDs associated with this ETR. The precision of the method was demonstrated by the results of the LCS/LCSD.

Field Duplicate– Acceptable.

Laboratory Duplicate– There were no laboratory duplicates associated with this ETR. The precision of the method was demonstrated by the results of the LCS/LCSD.

Target Compound Identifications– Acceptable.

Compound Quantitation and CRQLs – Acceptable.

OVERALL ASSESSMENT OF DATA

The data reported in this laboratory ETR is considered usable for meeting the project objectives.

The completeness is calculated by the number of usable data points divided by the total number of data points generated, multiplied by 100. The completeness for the laboratory ETR is 100%.

Validation performed by and Date:

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Staff Scientists - NewFields

