

## Data Validation Report

Project:	Portland Harbor
Laboratory:	Alpha Analytical Laboratory
Environmental Test Record (ETR):	1511001
Analyses/Method:	Polycyclic Aromatic Hydrocarbons (PAH) and n-Alkanes and Total Petroleum Hydrocarbons (TPH)

### Summary

One tar ball sample was collected in Portland Harbor, Oregon on October 21, 2015. The sample was analyzed for polycyclic aromatic hydrocarbons (PAH) by EPA Method 8270D modified by selected ion monitoring mode (SIM) and n-alkanes and total petroleum hydrocarbons (TPH) by EPA Method 8015D 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 sample is associated with the laboratory ETR 1511001.

Sample ID	Laboratory ID	Matrix
PH15-38-A_TB	1511001-01	Solid

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
- Equipment blank contamination
- Surrogate spike recoveries
- Internal Standard recoveries
- Matrix spike/Matrix spike duplicate (MS/MSD) recoveries, relative percent difference (RPD)
- Standard Reference Material Sediment accuracy check
- Laboratory control sample (LCS), LCS Duplicate (LCSD) recoveries, RPD values
- Calculation checks
- Contract Required Quantitation Limit (CRQL)
- Field duplicate results
- Laboratory duplicate results
- Overall assessment of the data



Data validation is based on the QC criteria documented in *Portland Harbor Sediment Forensic Chemistry Study, Portland Harbor Oregon Quality Assurance Project Plan (QAPP)*,<sup>1</sup> dated July 29, 2014, and the *Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling Quality Assurance Project Plan (QAPP)*,<sup>2</sup> dated March 23, 2018. There were no data qualifiers assigned to the results reported in this sample set.

### **Sample Receipt**

Chain of custody documentation were reviewed for completeness of information relevant to the sample and requested analysis. Sample IDs and sample collection dates from the chain of custody records were matched to the reported data. The discrepancies noted below.

Tar balls were isolated by the laboratory from field sample PH15-38-A. The tar ball sample was logged into the laboratory as PH15-38-A\_TB.

The cooler was received within  $4 \pm 2^\circ\text{C}$ .

### **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 (EPA Method 8270D). PAH were detected in the method blank below the reporting limit. However the associated sample results were either non-detect or were greater than ten times the blank concentration. Data were not qualified based on method blank results.

The method blank met the QC acceptance criteria for n-alkanes and TPH (EPA Method 8015D). n-Alkanes were detected in the method blank below the reporting limit. However the associated sample results were either non-detect or greater than ten times the blank concentration. Data were not qualified base on method blank results.

Rinsate Blank: One rinsate blank (PH15-03-RB) was collected on October 23, 2015 (ETR 1510012). Detections of target compounds in rinsate blanks were evaluated relative to sediment method detection limits (MDL). No target analytes were found in rinsate blanks at relative concentrations at, or above, the sediment MDL. No data were qualified based on the rinsate blank results.

**Surrogate Spikes** – Acceptable.

---

<sup>1</sup> NewFields. (2014). Portland Harbor Sediment Forensic Chemistry Study, Portland Harbor Oregon Quality Assurance Project Plan (QAPP). July 29, 2014.

<sup>2</sup> AECOM and Geosyntec. 2018. Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling Portland Harbor Superfund Site, Quality Assurance Project Plan. March 23, 2018,



**Internal Standard Areas** – Acceptable.

**Laboratory Control Samples** – Acceptable.

**Matrix Spike/Spike Duplicate** – A matrix spike/spike duplicate was not performed for this ETR. The precision and accuracy of the method was demonstrated by the results of the LCS/LCSD.

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

**Laboratory Duplicate**– Acceptable.

**Target Compound Identifications**– Acceptable

**Compound Quantitation and CRQLs** – Acceptable

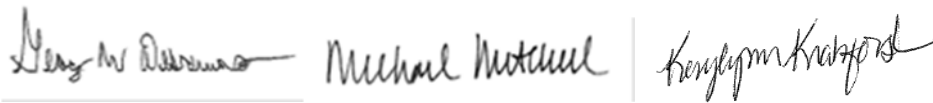
**OVERALL ASSESSMENT OF DATA**

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:**

George Desreuisseau, Mike Mitchel and Kerylynn Krahforst, December 2018.



Staff Scientists - NewFields