

Data Validation Report

Project:	Portland Harbor
Laboratory:	Alpha Analytical Laboratory
Environmental Test Record (ETR):	1510015
Analyses/Method:	Polycyclic Aromatic Hydrocarbons (PAH), n-Alkanes and Total Petroleum Hydrocarbons (TPH), and Total Organic Carbon (TOC)

Summary

Nineteen sediment samples were collected in Portland Harbor, Oregon on October 20, 2015 and October 21, 2015. Samples were analyzed for polycyclic aromatic hydrocarbons (PAH) by EPA Method 8270D modified by selected ion monitoring mode (SIM), n-alkanes and total petroleum hydrocarbons (TPH) by EPA Method 8015D, and total organic carbon (TOC) by EPA Method 9060A 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 sediment samples are associated with the laboratory ETR 1510015.

Sample ID	Lab ID	Matrix
PH15-12-A	1510015-01	Sediment
PH15-12-D	1510015-02	Sediment
PH15-14-C	1510015-03	Sediment
PH15-14-D	1510015-04	Sediment
PH15-15-C	1510015-05	Sediment
PH15-15-D	1510015-06	Sediment
PH15-16-A	1510015-07	Sediment
PH15-16-B	1510015-08	Sediment
PH15-16-C	1510015-09	Sediment
PH15-16-D	1510015-10	Sediment
PH15-17-B	1510015-11	Sediment
PH15-17-C	1510015-12	Sediment
PH15-17-D	1510015-13	Sediment
PH15-18-C	1510015-14	Sediment
PH15-18-D	1510015-15	Sediment
PH15-19-A	1510015-16	Sediment
PH15-19-C	1510015-17	Sediment
PH15-19-C-FD	1510015-18	Sediment
PH15-19-D	1510015-19	Sediment

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 Supplemental Sediment Study, Portland Oregon Quality Assurance Project Plan (QAPP)*,¹ dated October 14, 2015, and the *Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling Quality Assurance Project Plan (QAPP)*,² dated March 23, 2018. Data qualifiers assigned to results reported in this sample set are included in Table 1. Reason codes and explanations for qualified data are provided in Table 2.

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.

All coolers were 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

¹ NewFields. (2015). Portland Harbor Supplemental Sediment Study, Portland Oregon Quality Assurance Project Plan (QAPP). October 14, 2015.

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



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 sample results were either non-detect or were greater than 10X the blank 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	0.0828	µg/Kg	J
C1-Naphthalenes	0.113	µg/Kg	J
C3-Naphthalenes	0.225	µg/Kg	J
Biphenyl	0.0922	µg/Kg	J
Dibenzofuran	0.0225	µg/Kg	J
Acenaphthylene	0.0208	µg/Kg	J
Fluorene	0.101	µg/Kg	J
Anthracene	0.0740	µg/Kg	J
Phenanthrene	0.205	µg/Kg	J
C1-Phenanthrenes/Anthracenes	0.196	µg/Kg	J
Dibenzothiophene	0.0400	µg/Kg	J
C1-Dibenzothiophenes	0.0621	µg/Kg	J
Fluoranthene	0.0843	µg/Kg	J
Pyrene	0.0800	µg/Kg	J
Naphthobenzothiophenes	0.0431	µg/Kg	J
Benz[a]anthracene	0.0485	µg/Kg	J
Chrysene/Triphenylene	0.0683	µg/Kg	J
Benzo[b]fluoranthene	0.0723	µg/Kg	J
Benzo[j]fluoranthene/Benzo[k]fluoranthene	0.0565	µg/Kg	J
Benzo[e]pyrene	0.0809	µg/Kg	J
Benzo[a]pyrene	0.0665	µg/Kg	J
Indeno[1,2,3-cd]pyrene	0.0809	µg/Kg	J
Dibenz[ah]anthracene/Dibenz[ac]anthracene	0.0500	µg/Kg	J
Benzo[g,h,i]perylene	0.0508	µg/Kg	J
4-Methyldibenzothiophene	0.0255	µg/Kg	J
1-Methyldibenzothiophene	0.0234	µg/Kg	J
3-Methylphenanthrene	0.0435	µg/Kg	J
2-Methylphenanthrene	0.0443	µg/Kg	J
9/4-Methylphenanthrene	0.0401	µg/Kg	J
1-Methylphenanthrene	0.0358	µg/Kg	J
2-Methylnaphthalene	0.0575	µg/Kg	J
1-Methylnaphthalene	0.0414	µg/Kg	J
2,6-Dimethylnaphthalene	0.0927	µg/Kg	J
2,3,5-Trimethylnaphthalene	0.0349	µg/Kg	J



The method blank met the QC acceptance criteria for n-alkanes and TPH. n-Alkanes were detected in the method blank below the reporting limit. However, with the exception of the analytes below, the associated sample results were either non-detect or were greater than 10X the blank 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.

n-Alkanes and TPH Compounds	Result	Unit	Lab Qualifier
n-Nonane (C9)	0.000800	mg/Kg	J
n-Decane (C10)	0.00247	mg/Kg	J
n-Octadecane (C18)	0.0337	mg/Kg	CJ
n-Docosane (C22)	0.000733	mg/Kg	J
n-Pentacosane (C25)	0.0319	mg/Kg	CJ
n-Hexacosane (C26)	0.00180	mg/Kg	J
n-Heptacosane (C27)	0.00180	mg/Kg	J
n-Octacosane (C28)	0.00380	mg/Kg	J
n-Nonacosane (C29)	0.00193	mg/Kg	J
n-Triacontane (C30)	0.00167	mg/Kg	J

Rinsate Blank: Two rinsate blanks were collected on October 22, 2015 and October 23, 2015 (PH15-02-RB and PH15-3-RB, respectively [ETR 1510012]) and are associated with the sediment samples in this ETR.

- PH15-02-RB is associated with: PH15-14-C, PH15-14-D, PH15-15-C, PH15-15-D, PH15-16-A, PH15-16-B, PH15-16-C, PH15-16-D, PH15-17-B, PH15-17-C, PH15-17-D, PH15-18-C, PH15-18-D, PH15-19-A, PH15-19-C, PH15-19-C-FD, and PH15-19-D.
- PH15-03-RB is associated with: PH15-12-A and PH15-12-D.

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.

Internal Standard Areas – Acceptable.

Laboratory Control Samples – Acceptable.

Matrix Spike/Spike Duplicate – Acceptable except as noted below:

The following percent recoveries were outside QC limits:

Sample ID	Analyte	MS (%)	MSD (%)	QC Limit (%)	RPD (%)	QC Limit (%)
PH15-19-D	n-Hexatriacontane (C36)	ok	ok	50 - 125	45	30

The results for n-hexatriacontane in the native sample were qualified as estimated and flagged “J” based on these MS/MSD results.

The precision of the method was demonstrated by the results of the LCS/LCSD.



Standard Reference Material – Acceptable.

Field Duplicate– Acceptable except as noted below:

A field duplicate was submitted for PH15-19-C and was identified as PH15-19-C-FD. The results for the field duplicates were comparable except as noted below.

Sample ID	Field Duplicate ID	Analyte	RPD (%)	QC Limit (%)
PH15-19-C	PH15-19-C -FD	Phenanthrene	149	50
		C1-Phenanthrenes/Anthracenes	124	50
		C2-Phenanthrenes/Anthracenes	93	50
		Fluoranthene	121	50
		Pyrene	121	50
		C1-Fluoranthenes/Pyrenes	112	50
		C2-Fluoranthenes/Pyrenes	77	50
		Benz[a]anthracene	120	50
		Chrysene/Triphenylene	132	50
		C1-Chrysenes	110	50
		Benzo[b]fluoranthene	126	50
		Benzo[j]fluoranthene/Benzo[k]fluoranthene	126	50
		Benzo[e]pyrene	128	50
		Benzo[a]pyrene	122	50
		Indeno[1,2,3-cd]pyrene	142	50
Benzo[g,h,i]perylene	146	50		

The samples contained elevated PAHs indicative of tar-derived residues. Heterogeneity of sample matrix expected and reconciles with QC exceedance. The results for the analytes listed above were qualified as estimated and flagged “J” based on elevated field duplicates.

Laboratory Duplicate– Acceptable except as noted below:

Sample ID	Analytes	RPD (%)	QC Limit (%)
PH15-19-D	Acenaphthene	37	30

The results for the analytes listed above were qualified as estimated and flagged “J” based on elevated laboratory duplicates.

Target Compound Identifications– Acceptable.

Compound Quantitation and CRQLs – Acceptable.

CONVENTIONAL ANALYSES

Holding Time and Sample Preservation – Acceptable.



Initial Calibration and Continuing Calibration Verifications – Acceptable.

Blanks– Acceptable.

Matrix Spike/Spike Duplicate – Acceptable.

Standard Reference Material – Acceptable.

Field Duplicate– Acceptable.

Laboratory Duplicate– Acceptable except as noted below:

Sample ID	Analytes	RPD (%)	QC Limit (%)
PH15-17-B	TOC	31	25

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.

Three handwritten signatures are shown, separated by a vertical line. The first signature is on the left, the second is in the middle, and the third is on the right.

Staff Scientists - NewFields

Table 1. QA/QC Summary Review

Sdg	SoilSampID	Lab_ID	AnalMeth	Analyte	Result	Lab_Flag	Units	NFG Result	NFG Qualifier	validator_reason_code
1510015	PH15-12-D	1510015-02	EPA 8270D	2,6-Dimethylnaphthalene	0.566	JB	µg/Kg	0.945	U	bl
1510015	PH15-12-D	1510015-02	EPA 8270D	Biphenyl	0.35	JB	µg/Kg	0.945	U	bl
1510015	PH15-12-D	1510015-02	EPA 8270D	C1-Naphthalenes	0.652	JB	µg/Kg	0.945	U	bl
1510015	PH15-12-D	1510015-02	EPA 8270D	1-Methylnaphthalene	0.363	JB	µg/Kg	0.945	U	bl
1510015	PH15-14-C	1510015-03	EPA 8270D	Dibenzofuran	0.154	JB	µg/Kg	0.738	U	bl
1510015	PH15-14-C	1510015-03	EPA 8270D	C1-Naphthalenes	0.475	JB	µg/Kg	0.738	U	bl
1510015	PH15-14-C	1510015-03	EPA 8270D	Biphenyl	0.113	JB	µg/Kg	0.738	U	bl
1510015	PH15-14-C	1510015-03	EPA 8270D	2-Methylnaphthalene	0.189	JB	µg/Kg	0.738	U	bl
1510015	PH15-14-D	1510015-04	EPA 8270D	Naphthobenzothiophenes	0.109	JB	µg/Kg	0.892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8270D	Fluorene	0.396	JB	µg/Kg	0.892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8270D	Fluoranthene	0.682	JB	µg/Kg	0.892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8270D	Dibenzothiophene	0.128	JB	µg/Kg	0.892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8270D	Phenanthrene	0.562	JB	µg/Kg	0.892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8270D	Dibenzofuran	0.0336	JB	µg/Kg	0.892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8270D	1-Methylnaphthalene	0.162	JB	µg/Kg	0.892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8270D	2-Methylnaphthalene	0.107	JB	µg/Kg	0.892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8270D	2-Methylphenanthrene	0.0812	JB	µg/Kg	0.892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8270D	Acenaphthylene	0.139	JB	µg/Kg	0.892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8270D	Chrysene/Triphenylene	0.321	JB	µg/Kg	0.892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8270D	C1-Naphthalenes	0.201	JB	µg/Kg	0.892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8270D	Benz[a]anthracene	0.26	JB	µg/Kg	0.892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8270D	Biphenyl	0.0813	JB	µg/Kg	0.892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8270D	Benzo[g,h,i]perylene	0.333	JB	µg/Kg	0.892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8270D	C1-Phenanthrenes/Anthracenes	0.342	JB	µg/Kg	0.892	U	bl
1510015	PH15-15-C	1510015-05	EPA 8270D	2-Methylnaphthalene	0.381	JB	µg/Kg	0.732	U	bl
1510015	PH15-15-D	1510015-06	EPA 8270D	Biphenyl	0.0737	JB	µg/Kg	0.804	U	bl
1510015	PH15-15-D	1510015-06	EPA 8270D	2-Methylnaphthalene	0.123	JB	µg/Kg	0.804	U	bl
1510015	PH15-15-D	1510015-06	EPA 8270D	1-Methylnaphthalene	0.0823	JB	µg/Kg	0.804	U	bl
1510015	PH15-15-D	1510015-06	EPA 8270D	C1-Naphthalenes	0.146	JB	µg/Kg	0.804	U	bl
1510015	PH15-15-D	1510015-06	EPA 8270D	Dibenzofuran	0.102	JB	µg/Kg	0.804	U	bl
1510015	PH15-15-D	1510015-06	EPA 8270D	Fluorene	0.509	JB	µg/Kg	0.804	U	bl
1510015	PH15-16-B	1510015-08	EPA 8270D	Biphenyl	0.243	JB	µg/Kg	0.742	U	bl
1510015	PH15-16-C	1510015-09	EPA 8270D	1-Methylnaphthalene	0.325	JB	µg/Kg	0.732	U	bl
1510015	PH15-16-C	1510015-09	EPA 8270D	2-Methylnaphthalene	0.301	JB	µg/Kg	0.732	U	bl
1510015	PH15-16-C	1510015-09	EPA 8270D	Dibenzofuran	0.117	JB	µg/Kg	0.732	U	bl
1510015	PH15-16-C	1510015-09	EPA 8270D	C1-Naphthalenes	0.404	JB	µg/Kg	0.732	U	bl
1510015	PH15-16-C	1510015-09	EPA 8270D	Biphenyl	0.105	JB	µg/Kg	0.732	U	bl
1510015	PH15-16-D	1510015-10	EPA 8270D	Pyrene	0.664	JB	µg/Kg	0.829	U	bl
1510015	PH15-16-D	1510015-10	EPA 8270D	Naphthobenzothiophenes	0.0926	JB	µg/Kg	0.829	U	bl
1510015	PH15-16-D	1510015-10	EPA 8270D	Fluoranthene	0.508	JB	µg/Kg	0.829	U	bl
1510015	PH15-16-D	1510015-10	EPA 8270D	Dibenzofuran	0.178	JB	µg/Kg	0.829	U	bl
1510015	PH15-16-D	1510015-10	EPA 8270D	2-Methylphenanthrene	0.135	JB	µg/Kg	0.829	U	bl
1510015	PH15-16-D	1510015-10	EPA 8270D	2-Methylnaphthalene	0.369	JB	µg/Kg	0.829	U	bl
1510015	PH15-16-D	1510015-10	EPA 8270D	1-Methylnaphthalene	0.304	JB	µg/Kg	0.829	U	bl
1510015	PH15-16-D	1510015-10	EPA 8270D	Benz[a]anthracene	0.22	JB	µg/Kg	0.829	U	bl
1510015	PH15-16-D	1510015-10	EPA 8270D	C1-Phenanthrenes/Anthracenes	0.77	JB	µg/Kg	0.829	U	bl
1510015	PH15-16-D	1510015-10	EPA 8270D	Chrysene/Triphenylene	0.247	JB	µg/Kg	0.829	U	bl
1510015	PH15-16-D	1510015-10	EPA 8270D	C1-Naphthalenes	0.455	JB	µg/Kg	0.829	U	bl
1510015	PH15-16-D	1510015-10	EPA 8270D	Biphenyl	0.103	JB	µg/Kg	0.829	U	bl
1510015	PH15-16-D	1510015-10	EPA 8270D	Benzo[g,h,i]perylene	0.314	JB	µg/Kg	0.829	U	bl
1510015	PH15-17-B	1510015-11	EPA 8270D	C1-Naphthalenes	0.506	JB	µg/Kg	0.794	U	bl
1510015	PH15-17-B	1510015-11	EPA 8270D	Biphenyl	0.211	JB	µg/Kg	0.794	U	bl
1510015	PH15-17-B	1510015-11	EPA 8270D	2-Methylnaphthalene	0.429	JB	µg/Kg	0.794	U	bl
1510015	PH15-17-B	1510015-11	EPA 8270D	1-Methylnaphthalene	0.358	JB	µg/Kg	0.794	U	bl
1510015	PH15-17-C	1510015-12	EPA 8270D	2-Methylphenanthrene	0.258	JB	µg/Kg	0.735	U	bl
1510015	PH15-17-C	1510015-12	EPA 8270D	1-Methylnaphthalene	0.0964	JB	µg/Kg	0.735	U	bl
1510015	PH15-17-C	1510015-12	EPA 8270D	2-Methylnaphthalene	0.0951	JB	µg/Kg	0.735	U	bl
1510015	PH15-17-C	1510015-12	EPA 8270D	Dibenzofuran	0.0426	JB	µg/Kg	0.735	U	bl
1510015	PH15-17-C	1510015-12	EPA 8270D	Biphenyl	0.0855	JB	µg/Kg	0.735	U	bl
1510015	PH15-17-C	1510015-12	EPA 8270D	C1-Naphthalenes	0.155	JB	µg/Kg	0.735	U	bl
1510015	PH15-17-D	1510015-13	EPA 8270D	C1-Naphthalenes	0.503	JB	µg/Kg	0.856	U	bl
1510015	PH15-17-D	1510015-13	EPA 8270D	Biphenyl	0.123	JB	µg/Kg	0.856	U	bl
1510015	PH15-17-D	1510015-13	EPA 8270D	2-Methylnaphthalene	0.234	JB	µg/Kg	0.856	U	bl
1510015	PH15-18-C	1510015-14	EPA 8270D	2-Methylnaphthalene	0.429	JB	µg/Kg	0.734	U	bl
1510015	PH15-18-C	1510015-14	EPA 8270D	Biphenyl	0.264	JB	µg/Kg	0.734	U	bl
1510015	PH15-18-D	1510015-15	EPA 8270D	Naphthobenzothiophenes	0.245	JB	µg/Kg	0.785	U	bl
1510015	PH15-18-D	1510015-15	EPA 8270D	2-Methylnaphthalene	0.129	JB	µg/Kg	0.785	U	bl
1510015	PH15-18-D	1510015-15	EPA 8270D	Acenaphthylene	0.169	JB	µg/Kg	0.785	U	bl
1510015	PH15-18-D	1510015-15	EPA 8270D	Benzo[g,h,i]perylene	0.503	JB	µg/Kg	0.785	U	bl
1510015	PH15-18-D	1510015-15	EPA 8270D	Biphenyl	0.0836	JB	µg/Kg	0.785	U	bl
1510015	PH15-18-D	1510015-15	EPA 8270D	C1-Naphthalenes	0.693	JB	µg/Kg	0.785	U	bl
1510015	PH15-19-C	1510015-17	EPA 8270D	Dibenzofuran	0.0631	JB	µg/Kg	0.716	U	bl

Sdg	SoilSampID	Lab_ID	AnalMeth	Analyte	Result	Lab_Flag	Units	NFG	NFG	validator_
								Result	Qualifier	reason_code
1510015	PH15-19-C	1510015-17	EPA 8270D	Fluorene	0.446	JB	µg/Kg	0.716	U	bl
1510015	PH15-19-C	1510015-17	EPA 8270D	Biphenyl	0.0668	JB	µg/Kg	0.716	U	bl
1510015	PH15-19-C	1510015-17	EPA 8270D	2-Methylnaphthalene	0.114	JB	µg/Kg	0.716	U	bl
1510015	PH15-19-C	1510015-17	EPA 8270D	2-Methylphenanthrene	0.16	JB	µg/Kg	0.716	U	bl
1510015	PH15-19-C	1510015-17	EPA 8270D	1-Methylnaphthalene	0.195	JB	µg/Kg	0.716	U	bl
1510015	PH15-19-C	1510015-17	EPA 8270D	C1-Naphthalenes	0.239	JB	µg/Kg	0.716	U	bl
1510015	PH15-19-C-FD	1510015-18	EPA 8270D	Fluorene	0.712	JB	µg/Kg	0.726	U	bl
1510015	PH15-19-C-FD	1510015-18	EPA 8270D	Dibenzofuran	0.0766	JB	µg/Kg	0.726	U	bl
1510015	PH15-19-C-FD	1510015-18	EPA 8270D	1-Methylnaphthalene	0.275	JB	µg/Kg	0.726	U	bl
1510015	PH15-19-C-FD	1510015-18	EPA 8270D	2-Methylnaphthalene	0.102	JB	µg/Kg	0.726	U	bl
1510015	PH15-19-C-FD	1510015-18	EPA 8270D	Biphenyl	0.0519	JB	µg/Kg	0.726	U	bl
1510015	PH15-19-C-FD	1510015-18	EPA 8270D	C1-Naphthalenes	0.262	JB	µg/Kg	0.726	U	bl
1510015	PH15-19-D	1510015-19	EPA 8270D	Fluoranthene	0.161	JB	µg/Kg	0.831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8270D	Pyrene	0.197	JB	µg/Kg	0.831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8270D	Phenanthrene	0.272	JB	µg/Kg	0.831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8270D	Naphthobenzothiophenes	0.045	JB	µg/Kg	0.831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8270D	Fluorene	0.141	JB	µg/Kg	0.831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8270D	Dibenzothiophene	0.0951	JB	µg/Kg	0.831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8270D	1-Methylnaphthalene	0.152	JB	µg/Kg	0.831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8270D	2-Methylnaphthalene	0.109	JB	µg/Kg	0.831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8270D	2-Methylphenanthrene	0.0543	JB	µg/Kg	0.831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8270D	Acenaphthylene	0.125	JB	µg/Kg	0.831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8270D	Dibenzofuran	0.0347	JB	µg/Kg	0.831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8270D	Benz[a]anthracene	0.112	JB	µg/Kg	0.831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8270D	Benzo[g,h,i]perylene	0.298	JB	µg/Kg	0.831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8270D	Biphenyl	0.0741	JB	µg/Kg	0.831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8270D	C1-Naphthalenes	0.197	JB	µg/Kg	0.831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8270D	C1-Phenanthrenes/Anthracenes	0.217	JB	µg/Kg	0.831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8270D	Chrysene/Triphenylene	0.153	JB	µg/Kg	0.831	U	bl
1510015	PH15-14-C	1510015-03	EPA 8270D	Naphthalene	0.631	JB	µg/Kg	0.738	U	bl
1510015	PH15-14-D	1510015-04	EPA 8270D	Naphthalene	0.162	JB	µg/Kg	0.892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8270D	Indeno[1,2,3-cd]pyrene	0.255	JB	µg/Kg	0.892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8270D	Benzo[e]pyrene	0.283	JB	µg/Kg	0.892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8270D	9/4-Methylphenanthrene	0.067	JB	µg/Kg	0.892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8270D	Benzo[j]fluoranthene/Benzo[k]fluoranthene	0.253	JB	µg/Kg	0.892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8270D	Dibenz[ah]anthracene/Dibenz[ac]anthracene	0.0614	JB	µg/Kg	0.892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8270D	1-Methylphenanthrene	0.06	JB	µg/Kg	0.892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8270D	2,3,5-Trimethylnaphthalene	0.0657	JB	µg/Kg	0.892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8270D	2,6-Dimethylnaphthalene	0.127	JB	µg/Kg	0.892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8270D	4-Methyldibenzothiophene	0.0294	JB	µg/Kg	0.892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8270D	Anthracene	0.124	JB	µg/Kg	0.892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8270D	C1-Dibenzothiophenes	0.109	JB	µg/Kg	0.892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8270D	C3-Naphthalenes	0.628	JB	µg/Kg	0.892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8270D	3-Methylphenanthrene	0.0765	JB	µg/Kg	0.892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8270D	1-Methyldibenzothiophene	0.0242	JB	µg/Kg	0.892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8270D	Benzo[b]fluoranthene	0.363	JB	µg/Kg	0.892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8270D	Benzo[a]pyrene	0.382	JB	µg/Kg	0.892	U	bl
1510015	PH15-15-C	1510015-05	EPA 8270D	1-Methyldibenzothiophene	0.188	JB	µg/Kg	0.732	U	bl
1510015	PH15-15-D	1510015-06	EPA 8270D	2,3,5-Trimethylnaphthalene	0.104	JB	µg/Kg	0.804	U	bl
1510015	PH15-15-D	1510015-06	EPA 8270D	2,6-Dimethylnaphthalene	0.188	JB	µg/Kg	0.804	U	bl
1510015	PH15-15-D	1510015-06	EPA 8270D	4-Methyldibenzothiophene	0.211	JB	µg/Kg	0.804	U	bl
1510015	PH15-15-D	1510015-06	EPA 8270D	C1-Dibenzothiophenes	0.53	JB	µg/Kg	0.804	U	bl
1510015	PH15-15-D	1510015-06	EPA 8270D	Naphthalene	0.285	JB	µg/Kg	0.804	U	bl
1510015	PH15-15-D	1510015-06	EPA 8270D	1-Methyldibenzothiophene	0.0698	JB	µg/Kg	0.804	U	bl
1510015	PH15-16-C	1510015-09	EPA 8270D	Naphthalene	0.649	JB	µg/Kg	0.732	U	bl
1510015	PH15-16-D	1510015-10	EPA 8270D	Indeno[1,2,3-cd]pyrene	0.252	JB	µg/Kg	0.829	U	bl
1510015	PH15-16-D	1510015-10	EPA 8270D	Naphthalene	0.729	JB	µg/Kg	0.829	U	bl
1510015	PH15-16-D	1510015-10	EPA 8270D	4-Methyldibenzothiophene	0.063	JB	µg/Kg	0.829	U	bl
1510015	PH15-16-D	1510015-10	EPA 8270D	Dibenz[ah]anthracene/Dibenz[ac]anthracene	0.0584	JB	µg/Kg	0.829	U	bl
1510015	PH15-16-D	1510015-10	EPA 8270D	1-Methyldibenzothiophene	0.0457	JB	µg/Kg	0.829	U	bl
1510015	PH15-16-D	1510015-10	EPA 8270D	1-Methylphenanthrene	0.105	JB	µg/Kg	0.829	U	bl
1510015	PH15-16-D	1510015-10	EPA 8270D	3-Methylphenanthrene	0.334	JB	µg/Kg	0.829	U	bl
1510015	PH15-16-D	1510015-10	EPA 8270D	9/4-Methylphenanthrene	0.128	JB	µg/Kg	0.829	U	bl
1510015	PH15-16-D	1510015-10	EPA 8270D	C1-Dibenzothiophenes	0.254	JB	µg/Kg	0.829	U	bl
1510015	PH15-16-D	1510015-10	EPA 8270D	Benzo[a]pyrene	0.369	JB	µg/Kg	0.829	U	bl
1510015	PH15-16-D	1510015-10	EPA 8270D	Benzo[j]fluoranthene/Benzo[k]fluoranthene	0.244	JB	µg/Kg	0.829	U	bl
1510015	PH15-16-D	1510015-10	EPA 8270D	Benzo[e]pyrene	0.244	JB	µg/Kg	0.829	U	bl
1510015	PH15-16-D	1510015-10	EPA 8270D	Benzo[b]fluoranthene	0.288	JB	µg/Kg	0.829	U	bl
1510015	PH15-17-C	1510015-12	EPA 8270D	1-Methyldibenzothiophene	0.0305	JB	µg/Kg	0.735	U	bl
1510015	PH15-17-C	1510015-12	EPA 8270D	Naphthalene	0.216	JB	µg/Kg	0.735	U	bl
1510015	PH15-17-C	1510015-12	EPA 8270D	1-Methylphenanthrene	0.181	JB	µg/Kg	0.735	U	bl
1510015	PH15-17-C	1510015-12	EPA 8270D	3-Methylphenanthrene	0.232	JB	µg/Kg	0.735	U	bl
1510015	PH15-17-C	1510015-12	EPA 8270D	4-Methyldibenzothiophene	0.0934	JB	µg/Kg	0.735	U	bl

Sdg	SoilSampID	Lab_ID	AnalMeth	Analyte	Result	Lab_Flag	Units	NFG NFG		validator_ reason_code
								Result	Qualifier	
1510015	PH15-17-C	1510015-12	EPA 8270D	Dibenz[ah]anthracene/Dibenz[ac]anthracene	0.185	JB	µg/Kg	0.735	U	bl
1510015	PH15-17-C	1510015-12	EPA 8270D	C1-Dibenzothiophenes	0.247	JB	µg/Kg	0.735	U	bl
1510015	PH15-17-C	1510015-12	EPA 8270D	9/4-Methylphenanthrene	0.2	JB	µg/Kg	0.735	U	bl
1510015	PH15-17-C	1510015-12	EPA 8270D	2,3,5-Trimethylnaphthalene	0.302	JB	µg/Kg	0.735	U	bl
1510015	PH15-17-D	1510015-13	EPA 8270D	Naphthalene	0.692	JB	µg/Kg	0.856	U	bl
1510015	PH15-18-D	1510015-15	EPA 8270D	2,3,5-Trimethylnaphthalene	0.215	JB	µg/Kg	0.785	U	bl
1510015	PH15-18-D	1510015-15	EPA 8270D	Naphthalene	0.301	JB	µg/Kg	0.785	U	bl
1510015	PH15-18-D	1510015-15	EPA 8270D	Benzo[b]fluoranthene	0.427	JB	µg/Kg	0.785	U	bl
1510015	PH15-18-D	1510015-15	EPA 8270D	Indeno[1,2,3-cd]pyrene	0.353	JB	µg/Kg	0.785	U	bl
1510015	PH15-18-D	1510015-15	EPA 8270D	4-Methyldibenzothiophene	0.216	JB	µg/Kg	0.785	U	bl
1510015	PH15-18-D	1510015-15	EPA 8270D	1-Methyldibenzothiophene	0.0818	JB	µg/Kg	0.785	U	bl
1510015	PH15-18-D	1510015-15	EPA 8270D	Benzo[a]pyrene	0.636	JB	µg/Kg	0.785	U	bl
1510015	PH15-18-D	1510015-15	EPA 8270D	Benzo[e]pyrene	0.412	JB	µg/Kg	0.785	U	bl
1510015	PH15-18-D	1510015-15	EPA 8270D	Benzo[j]fluoranthene/Benzo[k]fluoranthene	0.417	JB	µg/Kg	0.785	U	bl
1510015	PH15-18-D	1510015-15	EPA 8270D	C1-Dibenzothiophenes	0.512	JB	µg/Kg	0.785	U	bl
1510015	PH15-18-D	1510015-15	EPA 8270D	Dibenz[ah]anthracene/Dibenz[ac]anthracene	0.0767	JB	µg/Kg	0.785	U	bl
1510015	PH15-19-C	1510015-17	EPA 8270D	Naphthalene	0.321	JB	µg/Kg	0.716	U	bl
1510015	PH15-19-C	1510015-17	EPA 8270D	Dibenz[ah]anthracene/Dibenz[ac]anthracene	0.229	JB	µg/Kg	0.716	U	bl
1510015	PH15-19-C	1510015-17	EPA 8270D	2,3,5-Trimethylnaphthalene	0.0428	JB	µg/Kg	0.716	U	bl
1510015	PH15-19-C	1510015-17	EPA 8270D	1-Methyldibenzothiophene	0.0413	JB	µg/Kg	0.716	U	bl
1510015	PH15-19-C	1510015-17	EPA 8270D	1-Methylphenanthrene	0.138	JB	µg/Kg	0.716	U	bl
1510015	PH15-19-C	1510015-17	EPA 8270D	2,6-Dimethylnaphthalene	0.202	JB	µg/Kg	0.716	U	bl
1510015	PH15-19-C	1510015-17	EPA 8270D	3-Methylphenanthrene	0.173	JB	µg/Kg	0.716	U	bl
1510015	PH15-19-C	1510015-17	EPA 8270D	4-Methyldibenzothiophene	0.088	JB	µg/Kg	0.716	U	bl
1510015	PH15-19-C	1510015-17	EPA 8270D	9/4-Methylphenanthrene	0.2	JB	µg/Kg	0.716	U	bl
1510015	PH15-19-C	1510015-17	EPA 8270D	Anthracene	0.436	JB	µg/Kg	0.716	U	bl
1510015	PH15-19-C	1510015-17	EPA 8270D	C1-Dibenzothiophenes	0.213	JB	µg/Kg	0.716	U	bl
1510015	PH15-19-C-FD	1510015-18	EPA 8270D	Naphthalene	0.308	JB	µg/Kg	0.726	U	bl
1510015	PH15-19-C-FD	1510015-18	EPA 8270D	4-Methyldibenzothiophene	0.227	JB	µg/Kg	0.726	U	bl
1510015	PH15-19-C-FD	1510015-18	EPA 8270D	1-Methyldibenzothiophene	0.0816	JB	µg/Kg	0.726	U	bl
1510015	PH15-19-C-FD	1510015-18	EPA 8270D	2,3,5-Trimethylnaphthalene	0.0958	JB	µg/Kg	0.726	U	bl
1510015	PH15-19-C-FD	1510015-18	EPA 8270D	C1-Dibenzothiophenes	0.567	JB	µg/Kg	0.726	U	bl
1510015	PH15-19-C-FD	1510015-18	EPA 8270D	2,6-Dimethylnaphthalene	0.273	JB	µg/Kg	0.726	U	bl
1510015	PH15-19-D	1510015-19	EPA 8270D	Naphthalene	0.25	JB	µg/Kg	0.831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8270D	Indeno[1,2,3-cd]pyrene	0.237	JB	µg/Kg	0.831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8270D	Benzo[a]pyrene	0.16	JB	µg/Kg	0.831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8270D	Anthracene	0.0574	JB	µg/Kg	0.831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8270D	1-Methylphenanthrene	0.0435	JB	µg/Kg	0.831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8270D	2,3,5-Trimethylnaphthalene	0.0303	JB	µg/Kg	0.831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8270D	2,6-Dimethylnaphthalene	0.0876	JB	µg/Kg	0.831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8270D	3-Methylphenanthrene	0.0531	JB	µg/Kg	0.831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8270D	4-Methyldibenzothiophene	0.0276	JB	µg/Kg	0.831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8270D	9/4-Methylphenanthrene	0.0464	JB	µg/Kg	0.831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8270D	Benzo[e]pyrene	0.156	JB	µg/Kg	0.831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8270D	Benzo[b]fluoranthene	0.186	JB	µg/Kg	0.831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8270D	Benzo[j]fluoranthene/Benzo[k]fluoranthene	0.162	JB	µg/Kg	0.831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8270D	C1-Dibenzothiophenes	0.0973	JB	µg/Kg	0.831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8270D	C3-Naphthalenes	0.696	JB	µg/Kg	0.831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8270D	Dibenz[ah]anthracene/Dibenz[ac]anthracene	0.0755	JB	µg/Kg	0.831	U	bl
1510015	PH15-19-C	1510015-17	EPA 8270D	Chrysene/Triphenylene	1.62		µg/Kg		J	fd
1510015	PH15-19-C	1510015-17	EPA 8270D	Indeno[1,2,3-cd]pyrene	1.2		µg/Kg		J	fd
1510015	PH15-19-C	1510015-17	EPA 8270D	Fluoranthene	3.69		µg/Kg		J	fd
1510015	PH15-19-C	1510015-17	EPA 8270D	Phenanthrene	1.1	B	µg/Kg		J	fd
1510015	PH15-19-C	1510015-17	EPA 8270D	Pyrene	4.59		µg/Kg		J	fd
1510015	PH15-19-C	1510015-17	EPA 8270D	Benzo[g,h,i]perylene	1.45		µg/Kg		J	fd
1510015	PH15-19-C	1510015-17	EPA 8270D	C2-Phenanthrenes/Anthracenes	0.878		µg/Kg		J	fd
1510015	PH15-19-C	1510015-17	EPA 8270D	C1-Fluoranthenes/Pyrenes	1.45		µg/Kg		J	fd
1510015	PH15-19-C	1510015-17	EPA 8270D	C2-Fluoranthenes/Pyrenes	0.731		µg/Kg		J	fd
1510015	PH15-19-C	1510015-17	EPA 8270D	Benz[a]anthracene	1.39		µg/Kg		J	fd
1510015	PH15-19-C	1510015-17	EPA 8270D	C1-Phenanthrenes/Anthracenes	0.833	B	µg/Kg		J	fd
1510015	PH15-19-C	1510015-17	EPA 8270D	C1-Chrysenes	0.719		µg/Kg		J	fd
1510015	PH15-19-C	1510015-17	EPA 8270D	Benzo[j]fluoranthene/Benzo[k]fluoranthene	1.28		µg/Kg		J	fd
1510015	PH15-19-C	1510015-17	EPA 8270D	Benzo[e]pyrene	1.17		µg/Kg		J	fd
1510015	PH15-19-C	1510015-17	EPA 8270D	Benzo[b]fluoranthene	1.29		µg/Kg		J	fd
1510015	PH15-19-C	1510015-17	EPA 8270D	Benzo[a]pyrene	1.82		µg/Kg		J	fd
1510015	PH15-19-C-FD	1510015-18	EPA 8270D	Fluoranthene	15.1		µg/Kg		J	fd
1510015	PH15-19-C-FD	1510015-18	EPA 8270D	Indeno[1,2,3-cd]pyrene	7.05		µg/Kg		J	fd
1510015	PH15-19-C-FD	1510015-18	EPA 8270D	Phenanthrene	7.58		µg/Kg		J	fd
1510015	PH15-19-C-FD	1510015-18	EPA 8270D	Pyrene	18.6		µg/Kg		J	fd
1510015	PH15-19-C-FD	1510015-18	EPA 8270D	Chrysene/Triphenylene	7.9		µg/Kg		J	fd
1510015	PH15-19-C-FD	1510015-18	EPA 8270D	Benz[a]anthracene	5.55		µg/Kg		J	fd
1510015	PH15-19-C-FD	1510015-18	EPA 8270D	Benzo[a]pyrene	7.54		µg/Kg		J	fd
1510015	PH15-19-C-FD	1510015-18	EPA 8270D	Benzo[b]fluoranthene	5.67		µg/Kg		J	fd

Sdg	SoilSampID	Lab_ID	AnalMeth	Analyte	Result	Lab_Flag	Units	NFG	NFG	validator_
								Result	Qualifier	reason_code
1510015	PH15-19-C-FD	1510015-18	EPA 8270D	Benzo[e]pyrene	5.37		µg/Kg	J		fd
1510015	PH15-19-C-FD	1510015-18	EPA 8270D	Benzo[j]fluoranthene/Benzo[k]fluoranthene	5.63		µg/Kg	J		fd
1510015	PH15-19-C-FD	1510015-18	EPA 8270D	C1-Chrysenes	2.46		µg/Kg	J		fd
1510015	PH15-19-C-FD	1510015-18	EPA 8270D	C2-Phenanthrenes/Anthracenes	2.4		µg/Kg	J		fd
1510015	PH15-19-C-FD	1510015-18	EPA 8270D	C1-Fluoranthenes/Pyrenes	5.16		µg/Kg	J		fd
1510015	PH15-19-C-FD	1510015-18	EPA 8270D	C1-Phenanthrenes/Anthracenes	3.54		µg/Kg	J		fd
1510015	PH15-19-C-FD	1510015-18	EPA 8270D	Benzo[g,h,i]perylene	9.26		µg/Kg	J		fd
1510015	PH15-19-C-FD	1510015-18	EPA 8270D	C2-Fluoranthenes/Pyrenes	1.65		µg/Kg	J		fd
1510015	PH15-19-D	1510015-19	EPA 8270D	Acenaphthene	9.03		µg/Kg	J		ld
1510015	PH15-19-D-DUP	1510015-19D	EPA 8270D	Acenaphthene	13.1	⌘	µg/Kg	J		ld
1510015	PH15-12-A	1510015-01	EPA 8015M	n-Nonane (C9)	0.00503	JB	mg/Kg	0.1119	U	bl
1510015	PH15-12-A	1510015-01	EPA 8015M	n-Octadecane (C18)	0.0745	JB	mg/Kg	0.1119	U	bl
1510015	PH15-12-D	1510015-02	EPA 8015M	n-Hexacosane (C26)	0.0127	JB	mg/Kg	0.0945	U	bl
1510015	PH15-12-D	1510015-02	EPA 8015M	n-Octacosane (C28)	0.02	JB	mg/Kg	0.0945	U	bl
1510015	PH15-12-D	1510015-02	EPA 8015M	n-Octadecane (C18)	0.0441	CJB	mg/Kg	0.0945	U	bl
1510015	PH15-12-D	1510015-02	EPA 8015M	n-Triacontane (C30)	0.0107	JB	mg/Kg	0.0945	U	bl
1510015	PH15-12-D	1510015-02	EPA 8015M	n-Nonane (C9)	0.00113	JB	mg/Kg	0.0945	U	bl
1510015	PH15-12-D	1510015-02	EPA 8015M	n-Decane (C10)	0.00274	JB	mg/Kg	0.0945	U	bl
1510015	PH15-14-C	1510015-03	EPA 8015M	n-Decane (C10)	0.00273	JB	mg/Kg	0.0738	U	bl
1510015	PH15-14-C	1510015-03	EPA 8015M	n-Triacontane (C30)	0.00251	JB	mg/Kg	0.0738	U	bl
1510015	PH15-14-C	1510015-03	EPA 8015M	n-Pentacosane (C25)	0.0423	CJB	mg/Kg	0.0738	U	bl
1510015	PH15-14-C	1510015-03	EPA 8015M	n-Octadecane (C18)	0.0297	CJB	mg/Kg	0.0738	U	bl
1510015	PH15-14-C	1510015-03	EPA 8015M	n-Octacosane (C28)	0.00479	JB	mg/Kg	0.0738	U	bl
1510015	PH15-14-C	1510015-03	EPA 8015M	n-Nonacosane (C29)	0.00819	JB	mg/Kg	0.0738	U	bl
1510015	PH15-14-C	1510015-03	EPA 8015M	n-Hexacosane (C26)	0.00236	JB	mg/Kg	0.0738	U	bl
1510015	PH15-14-C	1510015-03	EPA 8015M	n-Heptacosane (C27)	0.00819	JB	mg/Kg	0.0738	U	bl
1510015	PH15-14-D	1510015-04	EPA 8015M	n-Docosane (C22)	0.00152	JB	mg/Kg	0.0892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8015M	n-Decane (C10)	0.00294	JB	mg/Kg	0.0892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8015M	n-Pentacosane (C25)	0.0667	JB	mg/Kg	0.0892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8015M	n-Hexacosane (C26)	0.00232	JB	mg/Kg	0.0892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8015M	n-Nonacosane (C29)	0.0103	JB	mg/Kg	0.0892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8015M	n-Nonane (C9)	0.00134	JB	mg/Kg	0.0892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8015M	n-Octadecane (C18)	0.0436	CJB	mg/Kg	0.0892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8015M	n-Triacontane (C30)	0.00268	JB	mg/Kg	0.0892	U	bl
1510015	PH15-14-D	1510015-04	EPA 8015M	n-Octacosane (C28)	0.00553	JB	mg/Kg	0.0892	U	bl
1510015	PH15-15-C	1510015-05	EPA 8015M	n-Octadecane (C18)	0.0336	CJB	mg/Kg	0.0732	U	bl
1510015	PH15-15-C	1510015-05	EPA 8015M	n-Nonane (C9)	0.00139	JB	mg/Kg	0.0732	U	bl
1510015	PH15-15-C	1510015-05	EPA 8015M	n-Decane (C10)	0.00183	JB	mg/Kg	0.0732	U	bl
1510015	PH15-15-C	1510015-05	EPA 8015M	n-Docosane (C22)	0.00469	JB	mg/Kg	0.0732	U	bl
1510015	PH15-15-D	1510015-06	EPA 8015M	n-Heptacosane (C27)	0.0109	JB	mg/Kg	0.0804	U	bl
1510015	PH15-15-D	1510015-06	EPA 8015M	n-Hexacosane (C26)	0.0086	JB	mg/Kg	0.0804	U	bl
1510015	PH15-15-D	1510015-06	EPA 8015M	n-Nonacosane (C29)	0.00884	JB	mg/Kg	0.0804	U	bl
1510015	PH15-15-D	1510015-06	EPA 8015M	n-Nonane (C9)	0.00121	JB	mg/Kg	0.0804	U	bl
1510015	PH15-15-D	1510015-06	EPA 8015M	n-Octacosane (C28)	0.0115	JB	mg/Kg	0.0804	U	bl
1510015	PH15-15-D	1510015-06	EPA 8015M	n-Octadecane (C18)	0.0346	CJB	mg/Kg	0.0804	U	bl
1510015	PH15-15-D	1510015-06	EPA 8015M	n-Pentacosane (C25)	0.0459	CJB	mg/Kg	0.0804	U	bl
1510015	PH15-15-D	1510015-06	EPA 8015M	n-Triacontane (C30)	0.00619	JB	mg/Kg	0.0804	U	bl
1510015	PH15-15-D	1510015-06	EPA 8015M	n-Decane (C10)	0.00297	JB	mg/Kg	0.0804	U	bl
1510015	PH15-16-A	1510015-07	EPA 8015M	n-Octadecane (C18)	0.0297	JB	mg/Kg	0.0729	U	bl
1510015	PH15-16-A	1510015-07	EPA 8015M	n-Nonane (C9)	0.00386	JB	mg/Kg	0.0729	U	bl
1510015	PH15-16-A	1510015-07	EPA 8015M	n-Decane (C10)	0.00364	JB	mg/Kg	0.0729	U	bl
1510015	PH15-16-B	1510015-08	EPA 8015M	n-Hexacosane (C26)	0.00208	JB	mg/Kg	0.0742	U	bl
1510015	PH15-16-B	1510015-08	EPA 8015M	n-Triacontane (C30)	0.0049	JB	mg/Kg	0.0742	U	bl
1510015	PH15-16-B	1510015-08	EPA 8015M	n-Pentacosane (C25)	0.0438	CJB	mg/Kg	0.0742	U	bl
1510015	PH15-16-B	1510015-08	EPA 8015M	n-Octadecane (C18)	0.0288	CJB	mg/Kg	0.0742	U	bl
1510015	PH15-16-B	1510015-08	EPA 8015M	n-Octacosane (C28)	0.00638	JB	mg/Kg	0.0742	U	bl
1510015	PH15-16-B	1510015-08	EPA 8015M	n-Nonacosane (C29)	0.00868	JB	mg/Kg	0.0742	U	bl
1510015	PH15-16-B	1510015-08	EPA 8015M	n-Heptacosane (C27)	0.00787	JB	mg/Kg	0.0742	U	bl
1510015	PH15-16-B	1510015-08	EPA 8015M	n-Decane (C10)	0.00267	JB	mg/Kg	0.0742	U	bl
1510015	PH15-16-C	1510015-09	EPA 8015M	n-Nonacosane (C29)	0.00498	JB	mg/Kg	0.0732	U	bl
1510015	PH15-16-C	1510015-09	EPA 8015M	n-Nonane (C9)	0.000732	JB	mg/Kg	0.0732	U	bl
1510015	PH15-16-C	1510015-09	EPA 8015M	n-Octacosane (C28)	0.00425	JB	mg/Kg	0.0732	U	bl
1510015	PH15-16-C	1510015-09	EPA 8015M	n-Octadecane (C18)	0.0274	CJB	mg/Kg	0.0732	U	bl
1510015	PH15-16-C	1510015-09	EPA 8015M	n-Pentacosane (C25)	0.0373	CJB	mg/Kg	0.0732	U	bl
1510015	PH15-16-C	1510015-09	EPA 8015M	n-Hexacosane (C26)	0.00227	JB	mg/Kg	0.0732	U	bl
1510015	PH15-16-C	1510015-09	EPA 8015M	n-Triacontane (C30)	0.00286	JB	mg/Kg	0.0732	U	bl
1510015	PH15-16-C	1510015-09	EPA 8015M	n-Docosane (C22)	0.00132	JB	mg/Kg	0.0732	U	bl
1510015	PH15-16-C	1510015-09	EPA 8015M	n-Decane (C10)	0.00139	JB	mg/Kg	0.0732	U	bl
1510015	PH15-16-C	1510015-09	EPA 8015M	n-Heptacosane (C27)	0.00615	JB	mg/Kg	0.0732	U	bl
1510015	PH15-16-D	1510015-10	EPA 8015M	n-Docosane (C22)	0.00207	JB	mg/Kg	0.0829	U	bl
1510015	PH15-16-D	1510015-10	EPA 8015M	n-Decane (C10)	0.00249	JB	mg/Kg	0.0829	U	bl
1510015	PH15-16-D	1510015-10	EPA 8015M	n-Pentacosane (C25)	0.0447	CJB	mg/Kg	0.0829	U	bl
1510015	PH15-16-D	1510015-10	EPA 8015M	n-Heptacosane (C27)	0.00903	JB	mg/Kg	0.0829	U	bl

Sdg	SoilSampID	Lab_ID	AnalMeth	Analyte	Result	Lab_Flag	Units	NFG	NFG	validator_
								Result	Qualifier	reason_code
1510015	PH15-16-D	1510015-10	EPA 8015M	n-Hexacosane (C26)	0.00348	JB	mg/Kg	0.0829	U	bl
1510015	PH15-16-D	1510015-10	EPA 8015M	n-Nonacosane (C29)	0.00787	JB	mg/Kg	0.0829	U	bl
1510015	PH15-16-D	1510015-10	EPA 8015M	n-Octacosane (C28)	0.0053	JB	mg/Kg	0.0829	U	bl
1510015	PH15-16-D	1510015-10	EPA 8015M	n-Octadecane (C18)	0.0346	CJB	mg/Kg	0.0829	U	bl
1510015	PH15-16-D	1510015-10	EPA 8015M	n-Triacontane (C30)	0.00348	JB	mg/Kg	0.0829	U	bl
1510015	PH15-17-B	1510015-11	EPA 8015M	n-Octacosane (C28)	0.00524	JB	mg/Kg	0.0794	U	bl
1510015	PH15-17-B	1510015-11	EPA 8015M	n-Pentadecane (C15)	0.033	J	mg/Kg	0.0794	U	bl
1510015	PH15-17-B	1510015-11	EPA 8015M	n-Tricosane (C23)	0.00707	J	mg/Kg	0.0794	U	bl
1510015	PH15-17-B	1510015-11	EPA 8015M	n-Nonacosane (C29)	0.00778	JB	mg/Kg	0.0794	U	bl
1510015	PH15-17-B	1510015-11	EPA 8015M	n-Triacontane (C30)	0.00429	JB	mg/Kg	0.0794	U	bl
1510015	PH15-17-B	1510015-11	EPA 8015M	n-Hexacosane (C26)	0.00262	JB	mg/Kg	0.0794	U	bl
1510015	PH15-17-B	1510015-11	EPA 8015M	n-Heptacosane (C27)	0.00707	JB	mg/Kg	0.0794	U	bl
1510015	PH15-17-B	1510015-11	EPA 8015M	n-Hentriacontane (C31)	0.00572	J	mg/Kg	0.0794	U	bl
1510015	PH15-17-B	1510015-11	EPA 8015M	n-Dotriacontane (C32)	0.00381	J	mg/Kg	0.0794	U	bl
1510015	PH15-17-B	1510015-11	EPA 8015M	n-Docosane (C22)	0.00191	JB	mg/Kg	0.0794	U	bl
1510015	PH15-17-B	1510015-11	EPA 8015M	n-Decane (C10)	0.00214	JB	mg/Kg	0.0794	U	bl
1510015	PH15-17-C	1510015-12	EPA 8015M	n-Docosane (C22)	0.00118	JB	mg/Kg	0.0735	U	bl
1510015	PH15-17-C	1510015-12	EPA 8015M	n-Triacontane (C30)	0.00184	JB	mg/Kg	0.0735	U	bl
1510015	PH15-17-C	1510015-12	EPA 8015M	n-Pentacosane (C25)	0.0417	CJB	mg/Kg	0.0735	U	bl
1510015	PH15-17-C	1510015-12	EPA 8015M	n-Octadecane (C18)	0.0285	CJB	mg/Kg	0.0735	U	bl
1510015	PH15-17-C	1510015-12	EPA 8015M	n-Nonacosane (C29)	0.005	JB	mg/Kg	0.0735	U	bl
1510015	PH15-17-C	1510015-12	EPA 8015M	n-Hexacosane (C26)	0.00162	JB	mg/Kg	0.0735	U	bl
1510015	PH15-17-C	1510015-12	EPA 8015M	n-Heptacosane (C27)	0.00412	JB	mg/Kg	0.0735	U	bl
1510015	PH15-17-C	1510015-12	EPA 8015M	n-Decane (C10)	0.00221	JB	mg/Kg	0.0735	U	bl
1510015	PH15-17-D	1510015-13	EPA 8015M	n-Octadecane (C18)	0.0338	CJB	mg/Kg	0.0856	U	bl
1510015	PH15-17-D	1510015-13	EPA 8015M	n-Pentacosane (C25)	0.0448	CJB	mg/Kg	0.0856	U	bl
1510015	PH15-17-D	1510015-13	EPA 8015M	n-Triacontane (C30)	0.00257	JB	mg/Kg	0.0856	U	bl
1510015	PH15-17-D	1510015-13	EPA 8015M	n-Hexacosane (C26)	0.0018	JB	mg/Kg	0.0856	U	bl
1510015	PH15-17-D	1510015-13	EPA 8015M	n-Nonacosane (C29)	0.00556	JB	mg/Kg	0.0856	U	bl
1510015	PH15-17-D	1510015-13	EPA 8015M	n-Octacosane (C28)	0.00376	JB	mg/Kg	0.0856	U	bl
1510015	PH15-17-D	1510015-13	EPA 8015M	n-Decane (C10)	0.00257	JB	mg/Kg	0.0856	U	bl
1510015	PH15-17-D	1510015-13	EPA 8015M	n-Heptacosane (C27)	0.00582	JB	mg/Kg	0.0856	U	bl
1510015	PH15-18-C	1510015-14	EPA 8015M	n-Octacosane (C28)	0.0208	JB	mg/Kg	0.0734	U	bl
1510015	PH15-18-C	1510015-14	EPA 8015M	n-Triacontane (C30)	0.00543	JB	mg/Kg	0.0734	U	bl
1510015	PH15-18-C	1510015-14	EPA 8015M	n-Octadecane (C18)	0.0283	CJB	mg/Kg	0.0734	U	bl
1510015	PH15-18-C	1510015-14	EPA 8015M	n-Nonane (C9)	0.0011	JB	mg/Kg	0.0734	U	bl
1510015	PH15-18-C	1510015-14	EPA 8015M	n-Docosane (C22)	0.00433	JB	mg/Kg	0.0734	U	bl
1510015	PH15-18-C	1510015-14	EPA 8015M	n-Decane (C10)	0.00338	JB	mg/Kg	0.0734	U	bl
1510015	PH15-18-D	1510015-15	EPA 8015M	n-Docosane (C22)	0.00149	JB	mg/Kg	0.0785	U	bl
1510015	PH15-18-D	1510015-15	EPA 8015M	n-Decane (C10)	0.0022	JB	mg/Kg	0.0785	U	bl
1510015	PH15-18-D	1510015-15	EPA 8015M	n-Nonane (C9)	0.000785	JB	mg/Kg	0.0785	U	bl
1510015	PH15-18-D	1510015-15	EPA 8015M	n-Octacosane (C28)	0.0164	JB	mg/Kg	0.0785	U	bl
1510015	PH15-18-D	1510015-15	EPA 8015M	n-Pentacosane (C25)	0.0666	JB	mg/Kg	0.0785	U	bl
1510015	PH15-18-D	1510015-15	EPA 8015M	n-Triacontane (C30)	0.00314	JB	mg/Kg	0.0785	U	bl
1510015	PH15-18-D	1510015-15	EPA 8015M	n-Octadecane (C18)	0.0286	CJB	mg/Kg	0.0785	U	bl
1510015	PH15-19-A	1510015-16	EPA 8015M	n-Octadecane (C18)	0.0317	CJB	mg/Kg	0.0752	U	bl
1510015	PH15-19-A	1510015-16	EPA 8015M	n-Hexacosane (C26)	0.0174	JB	mg/Kg	0.0752	U	bl
1510015	PH15-19-A	1510015-16	EPA 8015M	n-Docosane (C22)	0.00549	JB	mg/Kg	0.0752	U	bl
1510015	PH15-19-A	1510015-16	EPA 8015M	n-Decane (C10)	0.00451	JB	mg/Kg	0.0752	U	bl
1510015	PH15-19-C	1510015-17	EPA 8015M	n-Docosane (C22)	0.00086	JB	mg/Kg	0.0716	U	bl
1510015	PH15-19-C	1510015-17	EPA 8015M	n-Decane (C10)	0.00272	JB	mg/Kg	0.0716	U	bl
1510015	PH15-19-C	1510015-17	EPA 8015M	n-Nonacosane (C29)	0.0117	JB	mg/Kg	0.0716	U	bl
1510015	PH15-19-C	1510015-17	EPA 8015M	n-Hexacosane (C26)	0.00279	JB	mg/Kg	0.0716	U	bl
1510015	PH15-19-C	1510015-17	EPA 8015M	n-Octacosane (C28)	0.00616	JB	mg/Kg	0.0716	U	bl
1510015	PH15-19-C	1510015-17	EPA 8015M	n-Octadecane (C18)	0.033	CJB	mg/Kg	0.0716	U	bl
1510015	PH15-19-C	1510015-17	EPA 8015M	n-Pentacosane (C25)	0.0499	CJB	mg/Kg	0.0716	U	bl
1510015	PH15-19-C	1510015-17	EPA 8015M	n-Triacontane (C30)	0.00244	JB	mg/Kg	0.0716	U	bl
1510015	PH15-19-C	1510015-17	EPA 8015M	n-Heptacosane (C27)	0.0141	JB	mg/Kg	0.0716	U	bl
1510015	PH15-19-C-FD	1510015-18	EPA 8015M	n-Octadecane (C18)	0.0277	CJB	mg/Kg	0.0726	U	bl
1510015	PH15-19-C-FD	1510015-18	EPA 8015M	n-Pentacosane (C25)	0.0434	CJB	mg/Kg	0.0726	U	bl
1510015	PH15-19-D	1510015-19	EPA 8015M	n-Docosane (C22)	0.0015	JB	mg/Kg	0.0831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8015M	n-Decane (C10)	0.00316	JB	mg/Kg	0.0831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8015M	n-Heptacosane (C27)	0.0069	JB	mg/Kg	0.0831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8015M	n-Hexacosane (C26)	0.00299	JB	mg/Kg	0.0831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8015M	n-Nonacosane (C29)	0.00831	JB	mg/Kg	0.0831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8015M	n-Nonane (C9)	0.00116	JB	mg/Kg	0.0831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8015M	n-Octacosane (C28)	0.00673	JB	mg/Kg	0.0831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8015M	n-Pentacosane (C25)	0.0358	CJB	mg/Kg	0.0831	U	bl
1510015	PH15-19-D	1510015-19	EPA 8015M	n-Triacontane (C30)	0.00266	JB	mg/Kg	0.0831	U	bl
1510015	PH15-17-B	1510015-11	EPA 8015M	n-Nonadecane (C19)	0.00429	J	mg/Kg	0.0794	U	bl
1510015	PH15-17-B	1510015-11	EPA 8015M	n-Tritriacontane (C33)	0.005	J	mg/Kg	0.0794	U	bl
1510015	PH15-17-B	1510015-11	EPA 8015M	Norpristane (1650)	0.00167	J	mg/Kg	0.0794	U	bl
1510015	PH15-17-B	1510015-11	EPA 8015M	n-Tetracosane (C24)	0.00453	J	mg/Kg	0.0794	U	bl

Sdg	SoilSampID	Lab_ID	AnalMeth	Analyte	Result	Lab_Flag	Units	NFG NFG Result Qualifier	validator_ reason_code
1510015	PH15-17-B	1510015-11	EPA 8015M	Pristane	0.00397	J	mg/Kg	0.0794 U	bl
1510015	PH15-17-B	1510015-11	EPA 8015M	n-Hexadecane (C16)	0.011	J	mg/Kg	0.0794 U	bl
1510015	PH15-17-B	1510015-11	EPA 8015M	n-Eicosane (C20)	0.00874	J	mg/Kg	0.0794 U	bl
1510015	PH15-17-B	1510015-11	EPA 8015M	2,6,10 Trimethyldodecane (1380)	0.000715	J	mg/Kg	0.0794 U	bl
1510015	PH15-19-C-FD	1510015-18	EPA 8015M	n-Heptacosane (C27)	0.0142	JB	mg/Kg	0.0726 U	bl
1510015	PH15-19-C-FD	1510015-18	EPA 8015M	n-Decane (C10)	0.00349	JB	mg/Kg	0.0726 U	bl
1510015	PH15-19-C-FD	1510015-18	EPA 8015M	n-Docosane (C22)	0.00174	JB	mg/Kg	0.0726 U	bl
1510015	PH15-19-C-FD	1510015-18	EPA 8015M	n-Hexacosane (C26)	0.00298	JB	mg/Kg	0.0726 U	bl
1510015	PH15-19-C-FD	1510015-18	EPA 8015M	n-Nonacosane (C29)	0.0107	JB	mg/Kg	0.0726 U	bl
1510015	PH15-19-C-FD	1510015-18	EPA 8015M	n-Triacontane (C30)	0.0032	JB	mg/Kg	0.0726 U	bl
1510015	PH15-19-C-FD	1510015-18	EPA 8015M	n-Octacosane (C28)	0.00654	JB	mg/Kg	0.0726 U	bl
1510015	PH15-19-D	1510015-19	EPA 8015M	n-Hexatriacontane (C36)	0	U	mg/Kg	J	m, md
1510015	PH15-17-B	1510015-11	EPA 9060	Total Organic Carbon	0.027		%	J	ld
1510015	PH15-17-B-DUP	1510015-11D	EPA 9060	Total Organic Carbon	0.037	⌘	%	J	ld

Table 2. Reason Codes and Explanations

Reason Code	Explanation
bf	Field blank contamination
bl	Laboratory blank contamination
C	Calibration issue
el	Clean-up standard recovery
d	Reporting limit raised due to chromatographic interference
fd	Field duplicate RPDs
h	Holding Times
i	Internal standard areas
k	Estimated Maximum Possible Concentration (EMPC)
l	LCS or OPR recoveries
le	Labeled compound recovery
ld	Laboratory duplicate RPDs
lp	Laboratory control sample laboratory control sample duplicate RPDs
m	Matrix spike recovery
md	Matrix spike/matrix spike duplicate RPDs
nb	Negative laboratory blank contamination
p	Chemical preservation issue
r	Dual column RPD
q	Quantitation issue
s	Surrogate recovery
su	Ion suppression
t	Temperature preservation issue
x	Percent solids
y	Serial dilution results
z	ICS results