Data Validation Report

Project:	Portland Harbor
Laboratory:	SGS
Sample Delivery Group (SDG):	A8344
Analyses/Method:	Polychlorinated dibenzo-p-dioxins and furans (PCDD/Fs)

Summary

Two rinsate blank samples were collected in Portland Harbor, Oregon on October 26, 2015 and October 27, 2015. Samples were analyzed for polychlorinated dibenzo-p-dioxins and furans (PCDD/Fs) by EPA Method 1613B by SGS Laboratory located in Wilmington, North Carolina. 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 SDG A8344.

Sample ID	Lab ID	Matrix
PH15-04-RB	A8344_001	Water
PH15-05-RB	A8344_002	Water

The data have been independently validated using *USEPA Contact Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* EPA-542-B-16-001, dated April 2016. 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
- High Resolution Mass Spectrometer (HRMS) check
- 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)
- 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 ± 2°C.

ORGANIC ANALYSES

Holding Time and Sample Preservation

All samples were extracted and analyzed within holding times.

HRMS Resolution Check – Acceptable

Initial Calibration and Continuing Calibration Verifications – Acceptable

Blanks – Acceptable except as noted below:

The method blank met the QC acceptance criteria for PCDD/F. PCDD/F 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 greater than five times the blank concentration. Samples containing the below listed analytes at concentrations below the reporting limit and less than five times the blank result were qualified as not detected, and were flagged "U" at the reporting limit based on the method blank result.

PCDD/F Compounds	Result	Unit	Lab Qualifier
123789-HxCDD	0.719	pg/L	J
1234678-HpCDD	1.44	pg/L	EMPC J
OCDD	8.45	pg/L	J
1234678-HpCDF	1.38	pg/L	J
OCDF	7.66	pg/L	J
Total TCDD	1.45	pg/L	EMPC
Total HxCDD	0.719	pg/L	
Total HpCDD	3.14	pg/L	EMPC
Total HpCDF	3.66	pg/L	

[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,

Surrogate Spikes – Acceptable.

Internal Standard Areas – Acceptable.

Laboratory Control Samples – 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

Table 1. QA/QC Summary Review

Sdg	SoilSampID	Lab_ID	AnalMeth	Analyte	Result	Lab_Flag	Units	NFG Result	NFG Qualifier	validator_ reason_code
A8344	PH15-04-RB	A8344_13726_DF_001	EPA 1613B	Total TCDD	1.28		pg/L		J	bl
A8344	PH15-04-RB	A8344_13726_DF_001	EPA 1613B	Total HxCDD	0.946		pg/L		J	bl
A8344	PH15-04-RB	A8344_13726_DF_001	EPA 1613B	Total HpCDF	0.773	EMPC	pg/L	0.349	U	bl
A8344	PH15-04-RB	A8344_13726_DF_001	EPA 1613B	OCDF	2.09	J B	pg/L	2.09	U	bl
A8344	PH15-04-RB	A8344_13726_DF_001	EPA 1613B	OCDD	6.39	J B	pg/L	6.39	U	bl
A8344	PH15-04-RB	A8344_13726_DF_001	EPA 1613B	1234678-HpCDF	0.349	J B	pg/L	0.349	U	bl
A8344	PH15-04-RB	A8344_13726_DF_001	EPA 1613B	1234678-HpCDD	1.13	EMPC J B	pg/L	1.13	U	bl
A8344	PH15-05-RB	A8344_13726_DF_002	EPA 1613B	Total TCDD	1.35	EMPC	pg/L	0.43	U	bl
A8344	PH15-05-RB	A8344_13726_DF_002	EPA 1613B	Total HpCDF	0.674		pg/L	0.674	U	bl
A8344	PH15-05-RB	A8344_13726_DF_002	EPA 1613B	Total HpCDD	2.05	EMPC	pg/L	0.89	U	bl
A8344	PH15-05-RB	A8344_13726_DF_002	EPA 1613B	OCDF	0.974	J B	pg/L	0.974	U	bl
A8344	PH15-05-RB	A8344_13726_DF_002	EPA 1613B	OCDD	3.19	J B	pg/L	3.19	U	bl
A8344	PH15-05-RB	A8344_13726_DF_002	EPA 1613B	123789-HxCDD	0.7	EMPC J B	pg/L	0.7	U	bl
A8344	PH15-05-RB	A8344_13726_DF_002	EPA 1613B	1234678-HpCDF	0.397	J B	pg/L	0.397	U	bl
A8344	PH15-05-RB	A8344_13726_DF_002	EPA 1613B	1234678-HpCDD	0.89	J B	pg/L	0.89	U	bl

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