High-Resolution Gas Chromatography/High-Resolution Mass Spectrometry
PCCDs/PCDFs (EPA Method 1613B)
Stage 2A Review
Data Quality Control (QC)

Site: PHSS-Swan Island Basin	SDG #: 20651
Laboratory: CFA	Project #: DT2002.03.03.04.01
HydroGeoLogic, Inc. Validator: John Tracy	Validation Date: 08.10.23
HGL Peer Reviewer: Ken Rapuano	Peer Review Date: 8.28.23

Client Sample ID	Laboratory Sample ID	Matrix
SIB-066-MLW-0-1-10182022	20651001	Sediment
SIB-066-OHW-0-1-10182022	20651002	Sediment
SIB-066-TOB-0-1-10182022	20651003	Sediment
SIB-066-TOB-0-1-10182022 MS	20651004	Sediment
SIB-066-TOB-0-1-10182022 MSD	20651005	Sediment
FD09-10182022	20651006	Sediment
SIB-063-TOB-0-1-10182022	20651007	Sediment
SIB-063-MLW-0-1-10182022	20651008	Sediment
SIB-065-MLW-0-1-10182022	20651009	Sediment
SIB-065-OHW-0-1-10182022	20651010	Sediment
SIB-065-TOB-0-1-10182022	20651011	Sediment
FD10-10182022	20651012	Sediment
SIB-064-MLW-0-1-10182022	20651013	Sediment
SIB-064-OHW-0-1-10182022	20651014	Sediment
SIB-064-TOB-0-1-10182022	20651015	Sediment
SIB-062-TOB-0-1-10182022	20651016	Sediment
SIB-062-OHW-0-1-10182022	20651017	Sediment
SIB-062-MLW-0-1-10182022	20651018	Sediment

The following Stage 2A review was performed on the requested analyses. No results were rejected, and analytical completeness is 100%.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No completeness issues were noted.

Qualification: None required.

Sample Delivery and Condition – With the exception of several labeling discrepancies, which were resolved, all samples arrived intact at the laboratory in acceptable condition and temperature and were properly preserved. No other discrepancies were noted.

Qualification: None required.

Holding Times – All samples were prepared and analyzed within their required holding times.

Qualification: None required.

Method Blanks – The method 1613B method bank was free from contamination.

Qualification: None required.

Rinsate Blanks – Rinse blank EB03-10/19/2022 (results reported in SDG 20699) is associated with all samples with results reported in this SDG. The rinsate blank was contaminated with 1,2,3,4,6,7,8,9-OCDD at 4.08 pg/L leading to a qualification limit of 2.04 pg/g. All detections of 1,2,3,4,6,7,8,9-OCDD are greater than the qualification limit in all samples.

Qualification: None required.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) – LCS/LCSD %Rs and RPDs were within QAPP control limits.

Qualification: None required.

Surrogates – All surrogates (labeled standards) were within control limits.

Qualification: None required.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) – An MS/MSD was performed using sample SIB-066-TOB-0-1-10182022. All %Rs and RPDs were within QAPP control limits.

Qualification: None required.

Field Duplicate – Sample FD09-10182022 is a field duplicate of sample SIB-066-OHW-0-1-10182022. All results in this duplicate pair met precision criteria.

Sample FD10-10182022 is a field duplicate of sample SIB-065-OHW-0-1-10182022. All results in this duplicate pair met precision criteria.

Qualification: None required.

Compound Quantitation – Analyte non-detections were reported as the EDL and qualified U. Analytes detected between the EDL and PQL were reported as J-qualified results by the laboratory. These J qualifiers were retained unless superseded by a more severe qualifier.

If a detected analyte has an ion ration outside the characteristic ion ratio window, the result is reported as an estimated maximum potential concentration. All results reported as an EMPC (a "K" flag is present in the laboratory qualifier) are qualified J-EMPC unless superseded by a higher priority qualifier.

2,3,7,8-TCDF is not fully resolved on the DB-5MS column; when detected above the PQL on the DB-5MS column, the result was confirmed on a DB-225 column using the instrument ID listed in the case narrative. In cases where two results are reported for 2,3,7,8-TCDF for a sample, the result from the DB-225 column is selected for use and the result from the DB-5MS is qualified DNR-EXC.

In cases where a target analyte is detected at a concentration above the calibrated range, the laboratory's practice is to report the result with a laboratory qualifier of E without running a dilution so long as the detector is not saturated. The OCDD results for 2 affected samples are qualified J-ACR.

***Qualification:* The following results are qualified:**

- **All results reported with a laboratory qualifier of K are qualified J with reason code EMPC.**
- **All 2,3,7,8-TCDF results reported from the DB-5MS column that are paired with a 2,3,7,8-TCDF result from the DB-225 column are qualified DNR, reason code EXC; note that the reportable_result field for these results are populated with "Yes" by the laboratory and are changed to "No" for the affected results.**

- **Two OCDD results reported with a laboratory qualifier of E are qualified J with reason code ACR; note that the reportable_result field for these results are populated with "No" by the laboratory and are changed to "Yes" for the affected results.**

Qualification Summary Table (results in pg/g):

Sample	Analyte	Lab Value	Lab Qualifier	Validated Value	Validated Qualifier	Reason Code
SIB-066-OHW-0-1-10182022	1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	2.26	JK	2.26	J	EMPC
SIB-066-OHW-0-1-10182022	1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	2.17	JK	2.17	J	EMPC
SIB-066-TOB-0-1-10182022	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN	6.92	K	6.92	J	EMPC
SIB-066-TOB-0-1-10182022	2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	0.404	JK	0.404	J	EMPC
SIB-066-TOB-0-1-10182022	OCTACHLORODIBENZOFURAN	4.61	JK	4.61	J	EMPC
FD09-10182022	2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	0.548	K	0.548	J	EMPC
SIB-063-TOB-0-1-10182022	1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	4.83	JK	4.83	J	EMPC
SIB-063-TOB-0-1-10182022	1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	2.57	JK	2.57	J	EMPC
SIB-063-TOB-0-1-10182022	2,3,4,7,8-PENTACHLORODIBENZOFURAN	2.44	JK	2.44	J	EMPC
SIB-063-TOB-0-1-10182022	2,3,7,8-TETRACHLORODIBENZOFURAN	1.18	K	1.18	DNR	EXC
SIB-063-TOB-0-1-10182022	2,3,7,8-TETRACHLORODIBENZOFURAN	0.798	JK	0.798	J	EMPC
SIB-063-TOB-0-1-10182022	2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	0.47	JK	0.47	J	EMPC
SIB-063-MLW-0-1-10182022	2,3,4,7,8-PENTACHLORODIBENZOFURAN	1.84	JK	1.84	J	EMPC
SIB-063-MLW-0-1-10182022	2,3,7,8-TETRACHLORODIBENZOFURAN	1.01	--	1.01	DNR	EXC
SIB-065-MLW-0-1-10182022	1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	6.92	K	6.92	J	EMPC
SIB-065-MLW-0-1-10182022	OCTACHLORODIBENZOFURAN	18.5	K	18.5	J	EMPC
FD10-10182022	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN	13.2	K	13.2	J	EMPC
SIB-064-MLW-0-1-10182022	1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	7.38	K	7.38	J	EMPC
SIB-064-MLW-0-1-10182022	1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	1.85	JK	1.85	J	EMPC
SIB-064-MLW-0-1-10182022	1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	9.32	K	9.32	J	EMPC
SIB-064-MLW-0-1-10182022	1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	3.47	JK	3.47	J	EMPC
SIB-064-MLW-0-1-10182022	2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	2.48	JK	2.48	J	EMPC
SIB-064-MLW-0-1-10182022	2,3,7,8-TETRACHLORODIBENZOFURAN	1.09	--	1.09	DNR	EXC
SIB-064-MLW-0-1-10182022	2,3,7,8-TETRACHLORODIBENZOFURAN	1.13	K	1.13	J	EMPC
SIB-064-MLW-0-1-10182022	OCTACHLORODIBENZO-P-DIOXIN	4480	E	4480	J	ACR
SIB-062-TOB-0-1-10182022	1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	4.78	JK	4.78	J	EMPC
SIB-062-TOB-0-1-10182022	1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	4.84	JK	4.84	J	EMPC
SIB-062-OHW-0-1-10182022	1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	7.77	K	7.77	J	EMPC

Sample	Analyte	Lab Value	Lab Qualifier	Validated Value	Validated Qualifier	Reason Code
SIB-062-OHW-0-1-10182022	1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	27.2	K	27.2	J	EMPC
SIB-062-OHW-0-1-10182022	1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	4.27	JK	4.27	J	EMPC
SIB-062-OHW-0-1-10182022	2,3,7,8-TETRACHLORODIBENZOFURAN	6.78	--	6.78	DNR	EXC
SIB-062-OHW-0-1-10182022	2,3,7,8-TETRACHLORODIBENZOFURAN	3.96	K	3.96	J	EMPC
SIB-062-OHW-0-1-10182022	2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	1.32	K	1.32	J	EMPC
SIB-062-OHW-0-1-10182022	OCTACHLORODIBENZO-P-DIOXIN	6710	E	6710	J	ACR
SIB-062-MLW-0-1-10182022	1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	3.37	JK	3.37	J	EMPC
SIB-062-MLW-0-1-10182022	2,3,4,7,8-PENTACHLORODIBENZOFURAN	1.36	JK	1.36	J	EMPC
SIB-062-MLW-0-1-10182022	OCTACHLORODIBENZOFURAN	12.9	K	12.9	J	EMPC