**High-Resolution Gas Chromatography/High-Resolution Mass Spectrometry**
PCB Congeners (EPA Method 1668C)
**Stage 2A Review**
**Data Quality Control (QC)**

| | |
|---|---|
| Site: PHSS-Swan Island Basin | SDG #: 21401 |
| Laboratory: CFA | Project #: DT2002.03.03.03.01 |
| HydroGeoLogic, Inc. Validator: John Tracy | Validation Date: 09.18.2023 |
| HGL QC Reviewer: Ken Rapuano | Peer Review Date: 09.25.23 |

| Client Sample ID | Laboratory Sample ID | Matrix |
|---|---|---|
| SIB-SC-WR186-030923 | 21401001 | Stormwater |
| SIB-SC-WR15-030923 | 21401002 | Stormwater |

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 – All samples arrived intact at the laboratory in acceptable condition and temperature and were properly preserved.

*Qualification:* None required.

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

*Qualification:* None required.

Method Blanks – The method 1668C method blank associated with all samples in this SDG was contaminated with the following PCBs; associated detections below the qualification threshold should be qualified U.

| PCB Congener | Concentration (pg/L) | Qualification Threshold (pg/L) |
|---|---|---|
| PCB-11 | 83 | 415 |
| PCB-18/30 | 4.18 | 20.9 |
| PCB-20/28 | 5.54 | 27.7 |
| PCB-21/33 | 4.1 | 20.5 |
| PCB-31 | 5.1 | 25.5 |
| PCB-44/47/65 | 9.34 | 46.7 |
| PCB-49/69 | 2.82 | 14.1 |
| PCB-52 | 8.72 | 43.6 |
| PCB-56 | 2.84 | 14.2 |
| PCB-60 | 2.22 | 11.1 |
| PCB-61/70/74/76 | 10.2 | 51 |
| PCB-64 | 2.12 | 10.6 |
| PCB-66 | 3.82 | 19.1 |
| PCB-86/87/97/109/119/125 | 8.62 | 43.1 |
| PCB-90/101/113 | 7.88 | 39.4 |

| PCB Congener | Concentration (pg/L) | Qualification Threshold (pg/L) |
|---|---|---|
| PCB-95 | 7.98 | 39.9 |
| PCB-99 | 2.82 | 14.1 |
| PCB-105 | 3.14 | 15.7 |
| PCB-110/115 | 8.36 | 41.8 |
| PCB-118 | 6.04 | 30.2 |
| PCB-129/138/163 | 5.38 | 26.9 |
| PCB-135/151 | 2.42 | 12.1 |
| PCB-136 | 1.3 | 6.5 |
| PCB-147/149 | 4.58 | 22.9 |
| PCB-153/168 | 4.38 | 21.9 |
| PCB-156/157 | 2.22 | 11.1 |
| PCB-174 | 1.82 | 9.1 |
| PCB-180/193 | 3.08 | 15.4 |
| PCB-187 | 1.78 | 8.9 |
| PCB-194 | 2.44 | 12.2 |

**The following results are qualified U-MBL:**

- **SIB-SW-WR186-030923: PCB-11, PCB-18/30, PCB-20/28, PCB-21/33, PCB-31, PCB-44/47/65, PCB-49/69, PCB-56, PCB-60, PCB-61/70/74/76, PCB-64**
- **SIB-SW-WR15-030923: PCB-11, PCB-18/30, PCB-20/28, PCB-21/33, PCB-31, PCB-44/47/65, PCB-49/69, PCB-52, PCB-56, PCB-60, PCB-61/70/74/76, PCB-64, PCB-66, PCB-90/101/113, PCB-95, PCB-99, PCB-105, PCB-110/115, PCB-118**

***Qualification:*** **Detections of contaminated compounds detected below the qualification threshold are qualified U, reason code MBL. Affected results are listed above.**

Equipment Blanks – No equipment blanks were associated with this SDG.

*Qualification:* None required.

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

*Qualification:* None required.

Surrogates – All surrogates (EISs) were within QAPP control limits with the exception of two recoveries below control limits in the LCSD associated with this SDG. Qualification of QC samples is not required.

*Qualification:* None required.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) –No MS/MSD analyses were performed with this SDG.

*Qualification:* None required.

Field Duplicate – No field duplicates were submitted with this SDG.

*Qualification:* None required.

Laboratory Duplicate – A laboratory duplicate was not performed in this SDG.

*Qualification:* None required.

Compound Quantitation – Analyte non-detections were reported as ND with the associated DL, LOD, and LOQ included on the result summary pages. This reporting format is equivalent to reporting non-detected data in the DoD "LOD U" format. Analytes detected between the DL and LOQ 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 are qualified J-EMPC unless superseded by a higher priority qualifier.

*Qualification:* None required.

Qualification Summary Table (results in pg/L):

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|---|---|---|---|---|---|---|
| SIB-SW-WR186-030923 | 2,2',3,3',4,4',5,5',6,6'-DECACHLOROBIPHENYL (209) | 2.34 | JK | 2.34 | J | EMPC |
| SIB-SW-WR186-030923 | 3,3'-DICHLOROBIPHENYL (11) | 48 | BJ | 48 | U | MBL |
| SIB-SW-WR186-030923 | PCB-183/185 | 26.1 | CJK | 26.1 | J | EMPC |
| SIB-SW-WR186-030923 | 2,3,3',4,4',5',6-HEPTACHLOROBIPHENYL (191) | 2.38 | JK | 2.38 | J | EMPC |
| SIB-SW-WR186-030923 | 2,2',3,3',5,6-HEXACHLOROBIPHENYL (134) | 17.7 | JK | 17.7 | J | EMPC |
| SIB-SW-WR186-030923 | 2,3,3',4,5,5'-HEXACHLOROBIPHENYL (159) | 1.89 | JK | 1.89 | J | EMPC |
| SIB-SW-WR186-030923 | 2,2',3,3',4,4',5,5',6-NONACHLOROBIPHENYL (206) | 6.97 | JK | 6.97 | J | EMPC |
| SIB-SW-WR186-030923 | 2,2',3,3',4,4',5,6,6'-NONACHLOROBIPHENYL (207) | 1.46 | JK | 1.46 | J | EMPC |
| SIB-SW-WR186-030923 | PCB-197/200 | 2.77 | CJK | 2.77 | J | EMPC |
| SIB-SW-WR186-030923 | 2,2',3,3',4,5',6,6'-OCTACHLOROBIPHENYL (201) | 2.01 | JK | 2.01 | J | EMPC |
| SIB-SW-WR186-030923 | PCB-85/116/117 | 27.7 | CJK | 27.7 | J | EMPC |
| SIB-SW-WR186-030923 | PCB-61/70/74/76 | 46 | BCJ | 46 | U | MBL |
| SIB-SW-WR186-030923 | PCB-44/47/65 | 27.3 | BCJ | 27.3 | U | MBL |
| SIB-SW-WR186-030923 | 2,2',3,6'-TETRACHLOROBIPHENYL (46) | 1.56 | JK | 1.56 | J | EMPC |
| SIB-SW-WR186-030923 | PCB-49/69 | 10.8 | BCJ | 10.8 | U | MBL |
| SIB-SW-WR186-030923 | 2,3,3',4'-TETRACHLOROBIPHENYL (56) | 9.35 | BJ | 9.35 | U | MBL |
| SIB-SW-WR186-030923 | 2,3,4,4'-TETRACHLOROBIPHENYL (60) | 4.43 | BJ | 4.43 | U | MBL |
| SIB-SW-WR186-030923 | 2,3,4',6-TETRACHLOROBIPHENYL (64) | 8.5 | BJ | 8.5 | U | MBL |
| SIB-SW-WR186-030923 | 3,3',4,4'-TETRACHLOROBIPHENYL (77) | 12.3 | JK | 12.3 | J | EMPC |
| SIB-SW-WR186-030923 | PCB-18/30 | 3.85 | BCJ | 3.85 | U | MBL |
| SIB-SW-WR186-030923 | PCB-20/28 | 8.1 | BCJ | 8.1 | U | MBL |
| SIB-SW-WR186-030923 | PCB-21/33 | 5.21 | BCJ | 5.21 | U | MBL |
| SIB-SW-WR186-030923 | 2,4',5-TRICHLOROBIPHENYL (31) | 4.73 | BJ | 4.73 | U | MBL |
| SIB-SW-WR15-030923 | 4,4'-DICHLOROBIPHENYL (15) | 6.46 | JK | 6.46 | J | EMPC |
| SIB-SW-WR15-030923 | 4-CHLOROBIPHENYL (3) | 3.39 | JK | 3.39 | J | EMPC |
| SIB-SW-WR15-030923 | 2,2',3,3',4,4',5,5',6,6'-DECACHLOROBIPHENYL (209) | 1.45 | JK | 1.45 | J | EMPC |
| SIB-SW-WR15-030923 | 2,3'-DICHLOROBIPHENYL (6) | 7.6 | JK | 7.6 | J | EMPC |

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|---|---|---|---|---|---|---|
| SIB-SW-WR15-030923 | 3,3'-DICHLOROBIPHENYL (11) | 374 | B | 374 | U | MBL |
| SIB-SW-WR15-030923 | PCB-12/13 | 6.69 | CJK | 6.69 | J | EMPC |
| SIB-SW-WR15-030923 | 2,3,3',4,4',5',6-HEPTACHLOROBIPHENYL (191) | 4.57 | JK | 4.57 | J | EMPC |
| SIB-SW-WR15-030923 | 2,2',3,3',5,6-HEXACHLOROBIPHENYL (134) | 3.56 | JK | 3.56 | J | EMPC |
| SIB-SW-WR15-030923 | 2,2',3,3',6,6'-HEXACHLOROBIPHENYL (136) | 8.61 | BJK | 8.61 | J | EMPC |
| SIB-SW-WR15-030923 | 2,2',3,4,5',6-HEXACHLOROBIPHENYL (144) | 6.67 | JK | 6.67 | J | EMPC |
| SIB-SW-WR15-030923 | 2,2',3,3',6-PENTACHLOROBIPHENYL (84) | 4.83 | JK | 4.83 | J | EMPC |
| SIB-SW-WR15-030923 | PCB-85/116/117 | 3.6 | CJK | 3.6 | J | EMPC |
| SIB-SW-WR15-030923 | PCB-90/101/113 | 25.5 | BCJ | 25.5 | U | MBL |
| SIB-SW-WR15-030923 | 2,2',3,5',6-PENTACHLOROBIPHENYL (95) | 19.1 | BJK | 19.1 | UJ | MBL,EMPC |
| SIB-SW-WR15-030923 | 2,2',4,4',5-PENTACHLOROBIPHENYL (99) | 7.58 | BJ | 7.58 | U | MBL |
| SIB-SW-WR15-030923 | 2,3,3',4,4'-PENTACHLOROBIPHENYL (105) | 9.19 | BJ | 9.19 | U | MBL |
| SIB-SW-WR15-030923 | 2,3,3',4',5-PENTACHLOROBIPHENYL (107) | 2.61 | JK | 2.61 | J | EMPC |
| SIB-SW-WR15-030923 | PCB-110/115 | 30.7 | BCJ | 30.7 | U | MBL |
| SIB-SW-WR15-030923 | 2,3',4,4',5-PENTACHLOROBIPHENYL (118) | 23.3 | BJ | 23.3 | U | MBL |
| SIB-SW-WR15-030923 | PCB-61/70/74/76 | 16.8 | BCJ | 16.8 | U | MBL |
| SIB-SW-WR15-030923 | PCB-40/71 | 5.11 | CJK | 5.11 | J | EMPC |
| SIB-SW-WR15-030923 | PCB-44/47/65 | 14 | BCJ | 14 | U | MBL |
| SIB-SW-WR15-030923 | PCB-45/51 | 3.17 | CJK | 3.17 | J | EMPC |
| SIB-SW-WR15-030923 | PCB-49/69 | 5.31 | BCJ | 5.31 | U | MBL |
| SIB-SW-WR15-030923 | PCB-50/53 | 1.64 | CJK | 1.64 | J | EMPC |
| SIB-SW-WR15-030923 | 2,2',5,5'-TETRACHLOROBIPHENYL (52) | 15.1 | BJ | 15.1 | U | MBL |
| SIB-SW-WR15-030923 | 2,3,3',4'-TETRACHLOROBIPHENYL (56) | 3.84 | BJK | 3.84 | UJ | MBL,EMPC |
| SIB-SW-WR15-030923 | 2,3,4,4'-TETRACHLOROBIPHENYL (60) | 2.71 | BJ | 2.71 | U | MBL |
| SIB-SW-WR15-030923 | 2,3',4,4'-TETRACHLOROBIPHENYL (66) | 7.56 | BJK | 7.56 | UJ | MBL,EMPC |
| SIB-SW-WR15-030923 | 2,3,4',6-TETRACHLOROBIPHENYL (64) | 4.4 | BJ | 4.4 | U | MBL |
| SIB-SW-WR15-030923 | 2,2',3-TRICHLOROBIPHENYL (16) | 4.08 | JK | 4.08 | J | EMPC |
| SIB-SW-WR15-030923 | PCB-18/30 | 6.16 | BCJ | 6.16 | U | MBL |
| SIB-SW-WR15-030923 | PCB-20/28 | 11.1 | BCJ | 11.1 | U | MBL |
| SIB-SW-WR15-030923 | PCB-21/33 | 7.13 | BCJ | 7.13 | U | MBL |
| SIB-SW-WR15-030923 | 2,4',5-TRICHLOROBIPHENYL (31) | 9.31 | BJ | 9.31 | U | MBL |