Stage 2A Review
Data Quality Control (QC)

Site: PHSS-SIB PDI	SDG #: Case 22J0289
Laboratory: ARI	Date: 8/4/2023
HydroGeoLogic, Inc. Reviewer: Deanna Valdebenito Peer Reviewer: Ken Rapuano (8.29.23)	Project: DT2002

Client Sample ID	Laboratory Sample ID	Analyses	Matrix
SIB-067-TOB-0-1-10142022	22J0289-02	PCB Aroclors and Total Metals	Solid
SIB-067-OHW-0-1-10142022	22J0289-05	PCB Aroclors and Total Metals	Solid
SIB-067-MLW-0-1-10142022	22J0289-08	PCB Aroclors and Total Metals	Solid
SIB-000-TOB-0-1-10172022	22J0289-10	PCB Aroclors and Total Metals	Solid
SIB-000-OHW-0-1-10172022	22J0289-11	PCB Aroclors and Total Metals	Solid
SIB-001-TOB-0-1-10172022	22J0289-12	PCB Aroclors and Total Metals	Solid
SIB-001-OHW-0-1-10172022	22J0289-13	PCB Aroclors and Total Metals	Solid
SIB-002-TOB-0-1-10172022	22J0289-14	PCB Aroclors and Total Metals	Solid
SIB-002-OHW-0-1-10172022	22J0289-15	PCB Aroclors and Total Metals	Solid
SIB-003-TOB-0-1-10172022	22J0289-16	PCB Aroclors and Total Metals	Solid
SIB-003-OHW-0-1-10172022	22J0289-17	PCB Aroclors and Total Metals	Solid
SIB-004-TOB-0-1-10172022	22J0289-18	PCB Aroclors and Total Metals	Solid
SIB-004-OHW-0-1-10172022	22J0289-19	PCB Aroclors and Total Metals	Solid
SIB-005-TOB-0-1-10172022	22J0289-20	PCB Aroclors and Total Metals	Solid
SIB-005-OHW-0-1-10172022	22J0289-21	PCB Aroclors and Total Metals	Solid
SIB-005-MLW-0-1-10172022	22J0289-23	PCB Aroclors and Total Metals	Solid
SIB-006-TOB-0-1-10172022	22J0289-24	PCB Aroclors and Total Metals	Solid
SIB-006-OHW-0-1-10172022	22J0289-25	PCB Aroclors and Total Metals	Solid
SIB-007-TOB-0-1-10172022	22J0289-26	PCB Aroclors and Total Metals	Solid
SIB-007-OHW-0-1-10172022	22J0289-27	PCB Aroclors and Total Metals	Solid
SIB-008-TOB-0-1-10172022	22J0289-28	PCB Aroclors and Total Metals	Solid
SIB-008-OHW-0-1-10172022	22J0289-29	PCB Aroclors and Total Metals	Solid
SIB-008-MLW-0-1-10172022	22J0289-30	PCB Aroclors and Total Metals	Solid
SIB-009-TOB-0-1-10172022	22J0289-31	PCB Aroclors and Total Metals	Solid
SIB-009-OHW-0-1-10172022	22J0289-32	PCB Aroclors and Total Metals	Solid
SIB-010-TOB-0-1-10172022	22J0289-33	PCB Aroclors and Total Metals	Solid
SIB-010-OHW-0-1-10172022	22J0289-34	PCB Aroclors and Total Metals	Solid
SIB-011-TOB-0-1-10172022	22J0289-35	PCB Aroclors and Total Metals	Solid
SIB-011-OHW-0-1-10172022	22J0289-36	PCB Aroclors and Total Metals	Solid
SIB-012-MLW-0-1-10172022	22J0289-37	PCB Aroclors and Total Metals	Solid
SIB-013-MLW-0-1-10172022	22J0289-38	PCB Aroclors and Total Metals	Solid
SIB-014-MLW-0-1-10172022	22J0289-39	PCB Aroclors and Total Metals	Solid
FD08-10172022	22J0289-40	PCB Aroclors and Total Metals	Solid

Client Sample ID	Laboratory Sample ID	Analyses	Matrix
SIB-068-OHW-0-1-10142022	22J0289-41	PCB Aroclors and Total Metals	Solid
SIB-004-MLW-0-1-10172022	22J0289-45	PCB Aroclors and Total Metals	Solid
SIB-068-MLW-0-1-10142022	22J0289-46	PCB Aroclors and Total Metals	Solid

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. The narrative noted sporadic ICV/CCV and internal standard discrepancies in one of the columns; in all cases, data were reported from an unaffected column. The data was reported from the column in control. All this has been noted but falls outside of a 2A validation.

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. The narrative noted that mercury and PCB Aroclors samples were frozen to extend holding times; this is in accordance with the QAPP archiving protocols. All mercury analyses were performed within the 180-day holding time for frozen samples.

Qualification: None required.

Method Blanks – The Aroclor method blank associated with preparation batch BKJ0779 was contaminated with 48.5 µg/kg Aroclor 1016 and 51.5 µg/kg Aroclor 1260. This method blank is only associated with an MS/MSD pair and an LCS/LCSD pair and no qualification is required.

Qualification: None required.

Rinsate Blanks – Equipment rinse blanks EB02-10102022 (results reported in SDG 22J0175) and EB03-10192022 (results reported in SDG 22J0477) are associated with all sample results reported in this SDG. Rinse blank EB03-10192022 was contaminated with a low level of chromium; chromium is not a target analyte for riverbank soil samples and no qualification is required.

Qualification: None required.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) – The LCS/LCSD associated with batch BKJ0779 had low %Rs and high RPDs for Aroclor 1016 and Aroclor 1260. This LCS is only associated with an MS/MSD pair and no qualification is required. All other LCS/LCSD %Rs and RPDs were within QAPP control limits. The laboratory prepared a standard reference material in each batch. All SRM results met control limits, with the exception of the SRM performed in association with preparation batch BKJ0799. This preparation batch is not associated with any sample results and no qualification is required.

Qualification: None required.

Surrogates – Samples SIB-067-OHW-0-1-10142022 and SIB-012-MLW-0-1-10172022 had a high %R for surrogate Decachlorobiphenyl [2C]; these discrepancies were above the allowance for a single discrepancy established by the HGL consistency memo and the detected results in these samples should be qualified

J, reason code SSH. Samples SIB-001-OHW-0-1-10172022, SIB-003-OHW-0-1-10172022, and SIB-013-MLW-0-1-10172022 had a high %R for surrogate Decachlorobiphenyl and samples SIB-067-TOB-0-1-10142022, SIB-002-TOB-0-1-10172022, SIB-007-OHW-0-1-10172022, and SIB-010-OHW-0-1-10172022 had a high %R for decachlorobiphenyl [2C]; these discrepancies were within the allowance limits for a single discrepancy set by the HGL consistency memo and no qualification is required. Samples SIB-008-TOB-0-1-10172022, SIB-011-OHW-0-1-10172022, and SIB-014-MLW-0-1-10172022 had a high %R for surrogates Decachlorobiphenyl and Decachlorobiphenyl [2C]. The detected Aroclor results for these samples should be qualified J with reason code SSH and non-detections should not be qualified. Sample SIB-011-TOB-0-1-10172022 had high %Rs for surrogates Decachlorobiphenyl and Decachlorobiphenyl [2C]; however, this sample was analyzed at a 25x dilution and surrogate %R discrepancies are not used for qualification.

Qualification: The detected Aroclor results for samples SIB-067-OHW-0-1-10142022, SIB-012-MLW-0-1-10172022, SIB-008-TOB-0-1-10172022, SIB-011-OHW-0-1-10172022, and SIB-014-MLW-0-1-10172022 are qualified J, reason code SSH.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) –

An MS/MSD was performed on samples SIB-012-MLW-0-1-10172022, SIB-068-OHW-0-1-10142022, SIB-013-MLW-0-1-10172022, and SIB-014-MLW-0-1-10172022 (Method 8082A). Samples SIB-012-MLW-0-1-10172022, SIB-068-OHW-0-1-10142022, and SIB-013-MLW-0-1-10172022 did not meet QAPP control limits.

The MS and MSD performed on sample SIB-012-MLW-0-1-10172022 had high %Rs for Aroclor 1016 and Aroclor 1260 and a high RPD for Aroclor 1260. All detected results for sample SIB-012-MLW-0-1-10172022 are associated with Aroclor 1260 and should be qualified J, reason code MSH,MSP.

The MS and MSD performed on sample SIB-068-OHW-0-1-10142022 had low %Rs for Aroclor 1016 and extremely low %Rs (<20%) for Aroclor 1260. All results in sample SIB-068-OHW-0-1-10142022 associated with Aroclor 1016 are non-detections and should be qualified UJ, reason code MSL. The detected Aroclor 1254 and Aroclor 1260 results for sample SIB-068-OHW-0-1-10142022 should be qualified J, reason code MSLX. The non-detected Aroclor 1248, Aroclor 1262, and Aroclor 1268 results for sample SIB-068-OHW-0-1-10142022 should be qualified R, reason code MSLX.

The MS performed on sample SIB-013-MLW-0-1-10172022 had high %Rs for Aroclor 1016 and Aroclor 1260 and the MS/MSD pair had high RPDs for Aroclor 1016 and Aroclor 1260. All detected results for sample SIB-013-MLW-0-1-10172022 should be qualified J, reason code MSH,MSP.

Qualification: All detected Aroclor results for samples SIB-012-MLW-0-1-10172022 and SIB-013-MLW-0-1-10172022 are qualified J, reason code MSH,MSP. All detected Aroclor results for sample SIB-068-OHW-0-1-10142022 are qualified J, reason code MSLX. The non-detected Aroclor 1248, Aroclor 1262, and Aroclor 1268 results for sample SIB-068-OHW-0-1-10142022 are qualified R, reason code MSLX; all other non-detected results for sample SIB-068-OHW-0-1-10142022 are qualified UJ, reason code MSL.

An MS/MSD was performed on samples SIB-012-MLW-0-1-10172022 and SIB-068-MLW-0-1-10142022 (metals). Sample SIB-012-MLW-0-1-10172022 (Methods 6020B and 6020B UCT-KED) did not meet QAPP control limits for Lead, Copper, and Zinc in the MS/MSD performed using sample SIB-012-MLW-0-1-10172022 in batch BLA0428. The lead, copper, and zinc concentrations in the parent sample are >4x the spike concentration and the %R results are not used to qualify sample results.

Qualification: None required.

Field Duplicate – Sample FD08-10172022 is a field duplicate of sample SIB-005-TOB-0-1-10172022. The results of the duplicate pair met the acceptance criteria for precision.

Qualification: None required.

Laboratory Duplicate – A laboratory duplicate was performed on samples SIB-012-MLW-0-1-10172022 and SIB-068-MLW-0-1-10142022 (metals). The RPDs of the duplicate pairs met the acceptance criteria except for Lead and Arsenic in sample SIB-012-MLW-0-1-10172022 prepared in batch BLA0428. All lead and arsenic results reported for samples prepared in batch BLA428 are detections and should be qualified J, reason code FDPR.

Qualification: The Lead and Arsenic results are qualified J, reason code FDPR, for the following samples: SIB-000-OHW-0-1-10172022, SIB-000-TOB-0-1-10172022, SIB-001-OHW-0-1-10172022, SIB-001-TOB-0-1-10172022, SIB-002-OHW-0-1-10172022, SIB-002-TOB-0-1-10172022, SIB-003-OHW-0-1-10172022, SIB-003-TOB-0-1-10172022, SIB-004-OHW-0-1-10172022, SIB-004-TOB-0-1-10172022, SIB-005-OHW-0-1-10172022, SIB-005-TOB-0-1-10172022, SIB-012-MLW-0-1-10172022, SIB-067-MLW-0-1-10142022, SIB-067-OHW-0-1-10142022, and SIB-067-TOB-0-1-10142022.

Compound Quantitation – Analyte results were reported with the associated DL, LOD, and LOQ in the DoD format instead of with the associated MDL and RL. Non-detected results were reported on the hardcopy as <#, where # corresponds to the LOD. The HGL reviewer confirmed that the value associated with non-detected results in the EDD is the MDL, in accordance with the project reporting requirements. Analytes detected between the MDL and RL were reported as J-qualified results by the laboratory. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table (concentrations in µg/kg [Aroclors] or mg/kg [metals]):

Sample	Analyte	Lab Value	Lab Qualifier	Validated Value	Validated Qualifier	Reason Code
SIB-067-TOB-0-1-10142022	ARSENIC	1.89	D	1.89	J	LDPR
SIB-067-TOB-0-1-10142022	LEAD	3.25	D	3.25	J	LDPR
SIB-067-OHW-0-1-10142022	ARSENIC	2.27	D	2.27	J	LDPR
SIB-067-OHW-0-1-10142022	LEAD	3.94	D	3.94	J	LDPR
SIB-067-OHW-0-1-10142022	PCB-1254 (AROCLOR 1254)	4.1	--	4.1	J	SSH
SIB-067-OHW-0-1-10142022	PCB-1260 (AROCLOR 1260)	3.6	J	3.6	J	SSH
SIB-067-MLW-0-1-10142022	ARSENIC	2.56	D	2.56	J	LDPR
SIB-067-MLW-0-1-10142022	LEAD	4.96	D	4.96	J	LDPR
SIB-000-TOB-0-1-10172022	ARSENIC	227	D	227	J	LDPR
SIB-000-TOB-0-1-10172022	LEAD	54.3	D	54.3	J	LDPR
SIB-000-OHW-0-1-10172022	ARSENIC	46.1	D	46.1	J	LDPR
SIB-000-OHW-0-1-10172022	LEAD	35	D	35	J	LDPR
SIB-001-TOB-0-1-10172022	ARSENIC	9.69	D	9.69	J	LDPR
SIB-001-TOB-0-1-10172022	LEAD	39.1	D	39.1	J	LDPR
SIB-001-OHW-0-1-10172022	ARSENIC	49.5	D	49.5	J	LDPR
SIB-001-OHW-0-1-10172022	LEAD	92.9	D	92.9	J	LDPR
SIB-002-TOB-0-1-10172022	ARSENIC	6.89	D	6.89	J	LDPR
SIB-002-TOB-0-1-10172022	LEAD	24.6	D	24.6	J	LDPR
SIB-002-OHW-0-1-10172022	ARSENIC	3.9	D	3.9	J	LDPR
SIB-002-OHW-0-1-10172022	LEAD	27.4	D	27.4	J	LDPR
SIB-003-TOB-0-1-10172022	ARSENIC	6.29	D	6.29	J	LDPR
SIB-003-TOB-0-1-10172022	LEAD	31.1	D	31.1	J	LDPR
SIB-003-OHW-0-1-10172022	ARSENIC	3.18	D	3.18	J	LDPR
SIB-003-OHW-0-1-10172022	LEAD	90.4	D	90.4	J	LDPR
SIB-004-TOB-0-1-10172022	ARSENIC	5.16	D	5.16	J	LDPR
SIB-004-TOB-0-1-10172022	LEAD	31.1	D	31.1	J	LDPR

Sample	Analyte	Lab Value	Lab Qualifier	Validated Value	Validated Qualifier	Reason Code
SIB-004-OHW-0-1-10172022	ARSENIC	2.94	D	2.94	J	LDPR
SIB-004-OHW-0-1-10172022	LEAD	24.7	D	24.7	J	LDPR
SIB-005-TOB-0-1-10172022	ARSENIC	5.63	D	5.63	J	LDPR
SIB-005-TOB-0-1-10172022	LEAD	37.8	D	37.8	J	LDPR
SIB-005-OHW-0-1-10172022	ARSENIC	4.44	D	4.44	J	LDPR
SIB-005-OHW-0-1-10172022	LEAD	27.8	D	27.8	J	LDPR
SIB-008-TOB-0-1-10172022	PCB-1254 (AROCLOR 1254)	61.7	D	61.7	J	SSH
SIB-008-TOB-0-1-10172022	PCB-1260 (AROCLOR 1260)	226	D	226	J	SSH
SIB-011-OHW-0-1-10172022	PCB-1248 (AROCLOR 1248)	155	D	155	J	SSH
SIB-011-OHW-0-1-10172022	PCB-1254 (AROCLOR 1254)	354	D	354	J	SSH
SIB-011-OHW-0-1-10172022	PCB-1260 (AROCLOR 1260)	351	D	351	J	SSH
SIB-012-MLW-0-1-10172022	ARSENIC	10.7	D	10.7	J	LDPR
SIB-012-MLW-0-1-10172022	LEAD	125	D	125	J	LDPR
SIB-012-MLW-0-1-10172022	PCB-1248 (AROCLOR 1248)	31.4	D	31.4	J	SSH,MSH,MSP
SIB-012-MLW-0-1-10172022	PCB-1254 (AROCLOR 1254)	130	P1 D	130	J	SSH,MSH,MSP
SIB-012-MLW-0-1-10172022	PCB-1260 (AROCLOR 1260)	333	D	333	J	SSH,MSH,MSP
SIB-013-MLW-0-1-10172022	PCB-1248 (AROCLOR 1248)	42.1	D	42.1	J	MSH,MSP
SIB-013-MLW-0-1-10172022	PCB-1254 (AROCLOR 1254)	103	D	103	J	MSH,MSP
SIB-013-MLW-0-1-10172022	PCB-1260 (AROCLOR 1260)	114	D	114	J	MSH,MSP
SIB-014-MLW-0-1-10172022	PCB-1254 (AROCLOR 1254)	47.5	P1 D	47.5	J	SSH
SIB-014-MLW-0-1-10172022	PCB-1260 (AROCLOR 1260)	139	D	139	J	SSH
SIB-068-OHW-0-1-10142022	Aroclor 1262	2.9	D U	2.9	R	MSLX
SIB-068-OHW-0-1-10142022	PCB-1016 (AROCLOR 1016)	7.8	D U	7.8	UJ	MSL
SIB-068-OHW-0-1-10142022	PCB-1221 (AROCLOR 1221)	7.8	D U	7.8	UJ	MSL
SIB-068-OHW-0-1-10142022	PCB-1232 (AROCLOR 1232)	7.8	D U	7.8	UJ	MSL
SIB-068-OHW-0-1-10142022	PCB-1242 (AROCLOR 1242)	7.8	D U	7.8	UJ	MSL
SIB-068-OHW-0-1-10142022	PCB-1248 (AROCLOR 1248)	7.8	D U	7.8	R	MSLX
SIB-068-OHW-0-1-10142022	PCB-1254 (AROCLOR 1254)	17.3	D J	17.3	J	MSLX

Sample	Analyte	Lab Value	Lab Qualifier	Validated Value	Validated Qualifier	Reason Code
SIB-068-OHW-0-1-10142022	PCB-1260 (AROCLOR 1260)	44	D	44	J	MSLX
SIB-068-OHW-0-1-10142022	PCB-1268 (AROCLOR 1268)	2.9	D U	2.9	R	MSLX