HGL Data Validation Review Report

Project Name/Number	PHSS-SIB PDI / DT2002
Data Validation Stage	2A
Laboratory	ALS Environmental
SDG	K2212036
HGL Reviewer	Ken Rapuano 9/8/23
HGL Peer Review	Justin Hersh 9/12/2023

General issues: The HGL reviewer ensured that all results with an interpreted_qualifiers of U or UJ had the corresponding detect_flag field populated with N and that all rows had Y in the validated_yn field.

The DV report used the higher of the method blank or equipment blank results (on-column) to qualify associated results. Although HGL's internal protocol is to use all applicable reason codes, using the reason code only associated with the highest associated blank is consistent with the NFG and is acceptable for this project.

Although equipment blank results are not validated, the method blanks associated with equipment blank EB02-10102022 were contaminated with several target analytes, including DRO, RRO, BEHP, and the PAHs 2-methylnaphthalene, fluorene, and phenanthrene. In most cases, the concentration in the aqueous method blank was below the corresponding concentration found in the equipment blank and in the judgment of the HGL reviewer, it is appropriate to use the equipment blank to qualify any associated sample results for those analytes. However, the concentration of BEHP was below the concentration detected in the associated aqueous method blank and the RRO result was only slightly greater than the aqueous method blank result; these two analytes are also considered to be laboratory artifacts due to aqueous preparation rather than field cross-contamination artifacts. Any change to qualification or reason codes is discussed in the method-specific sections below.

Diesel Range Organics (DRO) and Residual Range Organics (RRO):

The DV report used the on-column concentration to determine when to apply qualification for equipment blank contamination. This is appropriate when the dilution factor is 1; however, when the sample is diluted, this has the effect of applying the dilution factor to the qualification limit due to the equipment blank. HGL considers the undiluted qualification limit to be an absolute limit of the potential contribution of cross-contamination during sampling and applying the dilution factor on a sample-specific basis artificially overestimates the potential impact of field sampling cross contamination. When determining whether qualification should be applied, the equipment blank on-column qualification limit should be divided by the dilution factor to appropriately separate field contamination from laboratory contamination as represented by the method blank. The HGL reviewer re-evaluated all diluted results to determine if the equipment blank contamination affected the reported results and, if not, if the method blank qualification limit was applicable. For sample SIB-082-OHW-0-1-10112022, the validator-assigned qualification and EBL reason code applied to the DRO result were determined to be not applicable.

The DV report assigned U qualifiers to the detected RRO results for all samples due to this compound being detected in the associated equipment blank. Although RRO is considered a false positive in the equipment blank (see General Issues above), RRO was also detected in the method blank associated with these samples. For eight samples, the RRO result is also below the qualification limit (adjusted in raw data) associated with the soil

method blank. Reason code EBL should be removed from these results, replaced with MBL. For the other four samples reported in this SDG with RRO detections, the U qualifier and EBL reason code should be removed from the RRO results.

Sample	Analyte	Validated Result	Validated Qualifier	Modified Validated Qualifier	Modified Interpreted Qualifier	Modified Final Reason Code
SIB-086-MLW-0-1-10112022	RRO	62	U	--	J	--
SIB-085-MLW-0-1-10112022	RRO	8.3	U	U	U	MBL
FD05-10112022	RRO	8.5	U	U	U	MBL
SIB-084-MLW-0-1-10112022	RRO	15	U	U	U	MBL
SIB-084-TOB-0-1-10112022	RRO	50	U	--	J	--
SIB-083-MLW-0-1-10112022	RRO	25	U	U	U	MBL
SIB-082-MLW-0-1-10112022	RRO	8.5	U	U	U	MBL
SIB-082-OHW-0-1-10112022	DRO	2200	U	--	J	--
	RRO	8900	U	--	J	--
SIB-081-MLW-0-1-10122022	RRO	9.2	U	U	U	MBL
SIB-081-OHW-0-1-10122022	RRO	20	U	U	U	MBL
FD06-10122022	RRO	15	U	U	U	MBL

Tributyltin:

No issues noted.

Organochlorine Pesticides:

No issues noted.

bis(2-Ethylhexyl)phthalate; Polycyclic Aromatic Hydrocarbons (PAHs):

The DV report applied a J-qualifier to the bis(2-ethylhexyl)phthalate result for sample SIB-082-OHW-0-1-10112022 due to a high surrogate %R. The sample was diluted 10x and surrogate %R discrepancies are not applicable. The HGL reviewer removed the J qualifier and associated SSH reason code.

The DV report assigned U qualifiers to the acenaphthylene and phenanthrene results for sample SIB-082-OHW-0-1-10112022 due to these compounds being detected in the associated equipment blank. However, the sample was diluted 10x and the reported results for these samples are above the qualification limit when not adjusted for dilution (see General Issues above). The EBL reason code is replaced with the MBL reason code for the acenaphthylene result; the U qualifier and EBL reason code are removed from the phenanthrene result.

Sample	Analyte	Validated Result	Validated Qualifier	Modified Validated Qualifier	Modified Interpreted Qualifier	Modified Final Reason Code
SIB-083-OHW-0-1-10112022	bis(2-Ethylhexyl) phthalate	38	UJ	J	J	SSH
SIB-082-OHW-0-1-10112022	bis(2-Ethylhexyl) phthalate	4100	J	--	--	--
	Acenaphthylene	8.6	U	U	U	MBL
	Phenanthrene	130	U	--	--	--
SIB-081-OHW-0-1-10122022	bis(2-Ethylhexyl) phthalate	28	UJ	J	J	SSH
FD06-10122022	bis(2-Ethylhexyl) phthalate	22	UJ	J	J	SSH

Total Organic Carbon (TOC):

The DV report indicated that all analyses were performed within the holding time. The holding time for soil samples listed in the QAPP is incorrect. The HGL reviewer confirmed that all samples were analyzed within the correct holding time of 28 days.