HGL Data Validation Review Report

Project Name/Number	PHSS-SIB PDI / DT2002
Data Validation Stage	2A
Laboratory	ALS Environmental
SDG	K2212273
HGL Reviewer	Ken Rapuano 9/11/23
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. All TPH results reported in this SDG are from 1x dilution analyses and evaluation to eliminate dilution effects was not necessary.

The DV report assigned U qualifiers to the RRO results for seven undiluted 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 three 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-075-MLW-0-1-10132022	RRO	35	U	U	U	MBL
SIB-074-MLW-0-1-10132022	RRO	75	U	--	J	--
SIB-073-TOB-0-1-10132022	RRO	89	U	--	J	--
SIB-072-MLW-0-1-10132022	RRO	36	U	U	U	MBL
SIB-071-TOB-0-1-10132022	RRO	88	U	--	J	--
SIB-069-MLW-0-1-10142022	RRO	70	U	--	J	--
SIB-069-OHW-0-1-10142022	RRO	27	U	U	U	MBL

Tributyltin:

No issues noted.

Organochlorine Pesticides:

No issues noted.

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

Six B2EHP results were qualified U due to contamination in the equipment blank; these results should have the U-qualifier and EBL reason code removed. The soil method blank associated with these samples was free from contamination and no qualifier replacement is required.

The fluoranthene results in the duplicate pair were assigned reason code FDPA; both results were greater than 5x the LOQ with RPD >50% and the correct reason code is FDPR. The HGL reviewer revised the reason code for these two results.

Sample	Analyte	Validated Result	Validated Qualifier	Modified Validated Qualifier	Modified Interpreted Qualifier	Modified Final Reason Code
SIB-075-MLW-0-1-10132022	bis(2-Ethylhexyl)phthalate	14	UJ	J	J	SSH
SIB-074-MLW-0-1-10132022	bis(2-Ethylhexyl)phthalate	21	UJ	J	J	SSH
SIB-073-MLW-0-1-10132022	Fluoranthene	52	J	J	J	FDPR
FD07-10132022	bis(2-Ethylhexyl)phthalate	26	U	--	J	--
FD07-10132022	Fluoranthene	91	J	J	J	FDPR
SIB-072-MLW-0-1-10132022	bis(2-Ethylhexyl)phthalate	26	UJ	J	J	SSH
SIB-071-TOB-0-1-10132022	bis(2-Ethylhexyl)phthalate	29	UJ	J	J	SSH
SIB-069-OHW-0-1-10142022	bis(2-Ethylhexyl)phthalate	27	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.