HGL Data Validation Review Report

Project Name/Number	PHSS-SIB PDI / DT2002
Data Validation Stage	4
Laboratory	ALS Environmental
SDG	K2212538
HGL Reviewer	Ken Rapuano 9/13/23
HGL Peer Review	Justin Hersh 9/14/2023

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 EB04-10262022 were contaminated with several target analytes, including DRO, RRO, BEHP, and multiple PAHs; however, the analytes detected in this EB were generally higher than most corresponding aqueous method blank concentration and only B2EHP and pyrene are considered to be laboratory artifacts in that EB. 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. Six DRO results and six RRO results from 10x diluted analyses were above the equipment blank qualification limit when dilution factor was removed from the evaluation. All six affected DRO results and three affected RRO results were below the qualification limit calculated from the associated soil method blank and the EBL reason code was replaced with MBL, but no change was made to the qualification. The HGL reviewer removed the U qualifier and EBL reason code from the remaining three affected RRO results.

Sample SIB-045-OHW-0-1-10242022 had a high %R for one surrogate but this was not indicated in the DV report narrative; as this sample was analyzed at a 10x dilution, no qualification is required.

Sample	Analyte	Validated Result	Validated Qualifier	Modified Validated Qualifier	Modified Interpreted Qualifier	Modified Final Reason Code
SIB-044-TOB-0-1-10242022	DRO	120	U	U	U	MBL
	RRO	1400	U	--	--	--
SIB-044-OHW-0-1-10242022	DRO	190	U	U	U	MBL
	RRO	3000	U	--	--	--
SIB-043-TOB-0-1-10242022	DRO	120	U	U	U	MBL
	RRO	540	U	U	U	MBL
SIB-043-OHW-0-1-10242022	DRO	34	U	U	U	MBL
	RRO	730	U	--	--	--
SIB-042-MLW-0-1-10242022	DRO	120	U	U	U	MBL
	RRO	710	U	U	U	MBL
SIB-041-MLW-0-1-10242022	DRO	60	U	U	U	MBL
	RRO	350	U	U	U	MBL

Tributyltin:

MS/MSD analyses were performed on sample SIB-044-TOB-0-1-10242022. The sample concentration was >4x the spike concentration and %R discrepancies are not applicable; the validation report correctly did not use these %R discrepancies to apply qualifiers. The RPD of the MS and MSD was above the RPD limit and the HGL reviewer qualified the tributyltin result for sample SIB-044-TOB-0-1-10242022 J, with reason code MSP.

The DV report correctly identified the precision discrepancy in the field duplicate pair SIB-045-TOB-0-1-10242022 (results reported in SDG K2212535) / FD13-10242022, but applied reason code FDPA instead of FDPR to the affected results. The HGL reviewer corrected the reason code to FDPR.

Sample	Analyte	Validated Result	Validated Qualifier	Modified Validated Qualifier	Modified Interpreted Qualifier	Modified Final Reason Code
SIB-044-TOB-0-1-10242022	Tributlytin	3700	--	J	J	MSP
FD13-10242022	Tributlytin	5.2	J	J	J	FDPR

Organochlorine Pesticides:

No issues noted.

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

Five B2EHP results were qualified U due to contamination in the equipment blank; these results should have the U-qualifier and EBL reason code removed due to the equipment blank result being considered analytical artifacts (see General Issues). The soil method blank associated with these samples was free from contamination and no alternate qualification or reason code is required.

Sample	Analyte	Validated Result	Validated Qualifier	Modified Validated Qualifier	Modified Interpreted Qualifier	Modified Final Reason Code
SIB-043-OHW-0-1-10242022	bis(2-Ethylhexyl)phthalate	37	U	--	J	--
FD13-10242022	bis(2-Ethylhexyl)phthalate	16	U	--	J	--
SIB-042-OHW-0-1-10242022	bis(2-Ethylhexyl)phthalate	24	UJ	J	J	SSH
SIB-040-OHW-0-1-10242022	bis(2-Ethylhexyl)phthalate	21	U	--	J	--
SIB-040-MLW-0-1-10242022	bis(2-Ethylhexyl)phthalate	37	U	--	J	--

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.

The Excel file had a J qualifier applied to the approval_code field for sample FD13-10242022 instead of the adjacent interpreted_qualifier field. The HGL reviewer corrected this typographical error.