

Date: September 18, 2019

To: Rob Ede
Hahn and Associates Inc.

From: Jeanne Peterson
Project Manager, AQA

Subject: Data Validation
Gasco Mult 802 Decommissioning
Apex Laboratories, LLC Work Order A9F0684

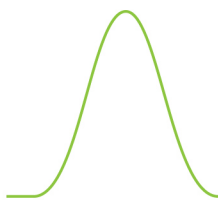
SUMMARY

Level II (i.e., EPA Stage 2A) data validation was performed on the data for one oil sample prepared and analyzed using approved procedures for methods SW846 8260C (VOCs), SW846 8270D (SVOCs), NWTPH-Gx (gasoline range organics [GRO]), NWTPH-Dx (diesel and oil), and SW846 6020A (metals by ICPMS). *Data were reported for all requested analytes with the exception of total cyanide. There were no total cyanide results in the data package.*

The analytical data were evaluated in accordance with the *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review* (October 1999) and the *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review* (February 1994) (NFG, collectively), and the applicable methods.

In general, the data are valid as reported. No data were rejected. Other qualifiers were applied to the data as specified in the Data Qualifiers section below.

See attached data validation spreadsheets for supporting documentation on the data review and validation.



SAMPLES

The sample included in this validation is listed below.

Sample ID	APEX Sample ID	Analysis	Matrix
2708-190619-OIL	A9F0684-01	VOCs, SVOCs, GRO, DRO, Total Metals	Oil

DATA QUALIFIERS (see following sections for detailed explanations)

Sample ID	Method	Analyte	Qualifier	Qualifier Code	Reason for Qualification
2708-190619-OIL	8260C	Bromomethane	UJ	10	Low laboratory control sample recovery

DISCUSSION

Sample Shipping/Receiving

All COC, analysis request, and sample receipt documentation was complete and correct with the following exception.

The sample receipt section of the COCs was not completed; the information was documented on the Cooler Receipt Form.

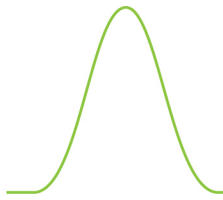
Extra analyses were requested by email dated 07/25/2019.

Holding Times and Preservation

The sample was properly preserved and analyzed within the prescribed holding times with the following exceptions.

Methods 8260C and NWTPH-Gx

The pH of the sample at the time of analysis was not included in the Level II data package. There were no preservation problems noted by the laboratory; therefore, it was assumed that the sample was properly preserved and no data were qualified.



Blanks

Methods 8260C, 8270D, NWTPH-Gx, NWTPH-Dx, EPA 335.4, OIA/D6888, and ASTM D4282

No target analytes were detected in the method blank. Field blanks were not collected with the sample in this work order.

Method 6020A

Manganese was detected in the method blank. The associated sample result was a detect >10X the method blank value and, therefore, was not qualified.

Surrogates

All surrogate recoveries were within laboratory QC acceptance criteria with the following exceptions.

Methods 8270D and NWTPH-Dx

The surrogates were diluted out of samples 2708-190619-OIL and 2708-190619-OIL DUP. No sample results were qualified.

Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD)

The LCS/LCSD analyses met laboratory QC acceptance criteria with the following exceptions.

Method 8260C

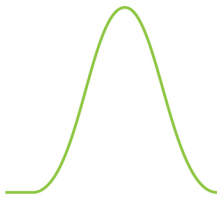
The LCS recoveries associated with batch 9061492 were > the upper acceptance limit for carbon disulfide; carbon tetrachloride; 1,1-dichloroethene; 2,2-dichloropropane; methylene chloride; and 1,1,1,2-tetrachloroethane. The associated sample results were non-detects and not affected by the high bias and, therefore, were not qualified based on professional judgment.

Method 8270D

The LCS recovery was > the upper acceptance limit for 3,3'-dichlorobenzidine. The associated sample result was a non-detect and not affected by the high bias and, therefore, was not qualified based on professional judgment.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

The MS/MSD analyses met laboratory QC acceptance criteria.



Method 8260C

It should be noted that the MS analyses were performed on non-project samples.

Methods 8270D, NWTPH-Gx, and NWTPH-Dx

An MS analysis was not performed with the sample in this work order; therefore, matrix-specific accuracy data were not available.

Laboratory Duplicate

The laboratory duplicate analyses (LCS/LCSD, MS/MSD, and/or sample/duplicate) were within laboratory QC acceptance criteria.

Methods 8260C and NWTPH-Gx

It should be noted that the laboratory duplicate analyses were performed on non-project samples.

Field Duplicate

A field duplicate was not collected with the sample in this data package.

Reporting Limits

All reporting limits (RLs) were properly reported. Sample 2708-190619-OIL was diluted 200000X for naphthalene and 10000X for all remaining VOC target analytes and GRO; 1000X for SVOCs; 100X for DRO, and 5X for metals. Reporting limits were adjusted accordingly.

Other QC

Method NWTPH-Dx

The laboratory noted that no fuel pattern was detected for sample 2708-190619-OIL. The diesel result represents carbon range C12 to C24. Because this could not be verified with a Level II data package, the sample results were not qualified by the validator; however, the end user of the results should be aware that the results were considered to be estimated.

No other specific issues that affect data quality were identified.

Hahn Data Validation Summary Worksheet

SDG#: A9F0684	Laboratory: Apex	Validator: Jeanne Peterson	Validation Date: 08/28/2019
Site: Mult 802 Decommissioning	COC#: 1	Validation Level: <input checked="" type="checkbox"/> II <input type="checkbox"/> III	
Matrix: Oil	# of Samples: 1	Tracking docs present: See sample receipt and log-in documentation	
COCs present: Yes	COCs signed: Yes	COCs dated: Yes	Sample Container Integrity: OK
Analyses: <input checked="" type="checkbox"/> VOCs <input checked="" type="checkbox"/> SVOCs <input type="checkbox"/> PAHs <input checked="" type="checkbox"/> GRO <input checked="" type="checkbox"/> DRO <input type="checkbox"/> Pests <input type="checkbox"/> PCBs <input checked="" type="checkbox"/> Metals <input type="checkbox"/> Gen Chem <input type="checkbox"/> Cyanide <input type="checkbox"/> Other: VPH/EPH			

Requested Analyses Not Reported			
Client Sample ID	Lab Sample ID	Analysis	Comments
2708-190619-OIL	A9F0684-01	Total cyanide	Analysis requested by email dated 07/25/2019; no data in data package
<hr style="border: 1px solid black;"/>			

Hold Time/Preservation Outliers								
Client Sample ID	Lab Sample ID	Analysis	Pres.	Collection Date	Preparation Date	Analysis Date	Analysis <2X HT	Analysis ≥2X HT
None								

Comments: Samples collected 06/20/2019
 Temp and containers not completed on COC; documented on Cooler Receipt Form.
 Extra analyses were requested by email dated 07/25/2019.

Hahn Level III GCMS Worksheet

SDG: A9F0684	Method: 8260C	Matrix: Oil	Lab Sample ID: A9F0684-01
Seq/Batch #: --/9061492, 9070494			

Tuning: Pass FailTICs Required? Yes No

(lab limits)

(lab limits)

Analyte (outliers)	Calibration				Method Blank	5X (10X) Method Blank	LCS %R	MS %R	MSD %R	MS/ MSD RPD	LAB DUP RPD	TB		
	RF ≥0.05	RSD/r ² ≤30% ≥0.990	ICV ¹ %D ±25%	CCV %D ±25%										
9061492														
CS2					✓	NA	127	✓	NA	NA	✓	NA		
CCl4					✓	NA	126	✓	NA	NA	✓	NA		
1,1-DCE					✓	NA	128	✓	NA	NA	✓	NA		
2,2-Dichloropropane					✓	NA	127	✓	NA	NA	✓	NA		
MeCl2					✓	NA	121	✓	NA	NA	✓	NA		
1,1,1,2-PCA					✓	NA	121	✓	NA	NA	✓	NA		
9070494 (naphthalene only)														
None														

Surrogate Recovery Outliers (method/lab limits)

Sample ID	DBFM	1,4-DCB	Tol-d8	4-BFB	Sample ID	DBFM	1,4-DCB	Tol-d8	4-BFB
None									

IS Outliers (-50% to +100% of CCV)

Sample ID	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT
NA												

Comments: HTs OK for unpreserved samples. pH unknown
 9061492: MB, LCS, -01, unknown Dup, unknown MS
 9070494: MB, LCS, -01 RE1, unknown Dup1, unknown Dup2, unknown MS
 Sample -01 diluted 200000X for naphthalene and 10000X for all remaining target analytes

Hahn Level III GCMS Worksheet

SDG: A9F0684	Method: 8270D	Matrix: Oil	Lab Sample IDs: A9F0684-01
Seq/Batch #: --/9061508			

Tuning: Pass Fail TICs Required? Yes No (lab limits) (lab limits)

Analyte (outliers)	Calibration				Method Blank	5X (10X) Method Blank	LCS %R	LCSD %R	LCS/ D RPD	MS %R	MSD %R	MS/D RPD	Lab Dup RPD
	RF ≥0.05	RSD/r ² ≤30%	ICV %D ±25%	CCV %D ±25%									
3,3'-Dichlorobenzidine					✓	NA	285	NA	NA	NA	NA	NA	✓

Surrogate Recovery Outliers (lab limits)

Sample ID	Nitrobenzene-d5	2-Fluorobiphenyl	Phenol-d6	p-Terphenyl-d14	2-Fluorophenol	2,4,6-Tribromophenol
-01 1000X	DO	DO	DO	DO	DO	DO
Dup 1000X	DO	DO	DO	DO	DO	DO

IS Outliers (-50% to +100% of CCV)

Sample ID	Acen-d10	RT	Chry-d12	RT	Per-d12	RT	Dibenz-d14	RT	Area	RT	Area	RT
NA												

Comments: HTs OK. DO = Diluted out
 MB, LCS, -01, A9F0684-01 Dup
 Sample -01 diluted 1000X for all target compounds

Hahn Level III NWTPH-GX Worksheet

SDG: A9F0684	Matrix: Oil	Lab Sample IDs: A9F0684-01
Seq./Batch #: --/9061492		

Tuning: Pass Fail

(lab limits) *(lab limits)*

Analyte (outliers)	Calibration			Method Blank	5X Blank	LCS %R	MS %R	MSD %R	MS/D RPD	Lab Dupl RPD
	r ² ≥0.990 ±20%	ICV/CCV %D ±20%	RT Windows							
GRO				✓	NA	✓	NA	NA	NA	44#

Surrogate Outliers (50-150%)

Sample ID	Surrogate	%R	Sample ID	Surrogate	%R	Sample ID	Surrogate	%R
None								

IS Outliers (-50% to +100% of CCV)

Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT
NA											

Comments: HTs OK for unpreserved samples. pH unknown
 MB, LCS, -01, unknown Dup
 #Parent and/or dup sample conc <5*RL and abs diff <RL; OK
 Sample -01 diluted 10000X

Hahn Level III NWTPH-DX Worksheet

SDG: A9F0684	Matrix: Oil	Lab Sample IDs: A9F0684-01
Seq./Batch #: --/9070624		

Analyte (outliers)	Calibration			Method Blank	5X Blank	LCS/ LCSD %R	MS %R	MSD %R	MS/D RPD	LCSD %R	LAB RPD
	r ² ≥0.990 ±20%	ICV/CCV %D ±15%	RT Windows								
None							NA	NA	NA	NA	

Surrogate Outliers (50-150%)								
Sample ID	Surrogate	%R	Sample ID	Surrogate	%R	Sample ID	Surrogate	%R
-01 (100X)	o-Terphenyl	DO						
Dup (100X)	o-Terphenyl	DO						

Comments: HTs OK. DO = Diluted out
 MB, LCS, -01, A9F0684-01 Dup
 Sample -01 diluted 100X
 Sample -01: F17 No fuel pattern was detected. The diesel result represents carbon range C12 to C24.

