LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

GEI Consultants
110 Walt Whitman Road, Suite 204
Huntington Station, NY 11746
ATTN: Mr. Bill Fitchett
Wfitchett@geiconsultants.com

January 5, 2021

SUBJECT: Long Island City, 30th Street, Data Usability Summary Report.

Dear Mr. Fitchett,

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on December 4th and 11th, 2020. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #50031:

SDG #	Fraction
460-222776-1, 460-224069-1	Volatiles

The data validation was performed under modified Category B guidelines using quality control summaries provided by the laboratory. The analyses were validated using the following documents, as applicable to each method:

- USEPA Region 2 Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-Method 8260B and 8260C, SOP HW-24, Revision 4; October 2014
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, EPA 540-R-2017-002; January 2017
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Christina Rink

Christina Rink
crink@lab-data.com
Project Manager/Senior Chemist

91 pages-ADV EQUIS EDD/ NYDUSR (split from 49880 & 49975) Attachment 1

Category B **LDC #50031 (GEI Consultants, Inc. - Huntington Station, NY / 30th Street, Long Island City, Site No. C241214)**

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260D)																																	
Matrix: Water/Soil				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	460-222776-1	12/04/20	12/28/20	2	3																																
B	460-224069-1	12/11/20	01/05/21	2	4																																
Total	T/CR			4	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11

Shaded cells indicate Category B validation (all other cells are Category A validation). These sample counts do not include MS/MSD, and DUPs

Site: Long Island City, 30th Street
Laboratory: Eurofins
Report No.: 460-222776-1
Reviewer: Josephine Go and Christina Rink/Laboratory Data Consultants for GEI Consultants, Inc. – Huntington Station, NY
Date: December 30, 2020

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
SW-2	460-222776-3	VOC
SW-3	460-222776-4	VOC
DUP20201113	460-222776-5	VOC
FB20201113	460-222776-6	VOC
Trip Blank	460-222776-7	VOC
SW-2MS	460-222776-3MS	VOC
SW-2MSD	460-222776-3MSD	VOC

Associated QC Samples(s):
Field/Trip Blanks: FB20201113, Trip Blank
Field Duplicate pair: SW-3 and DUP20201113

The above-listed soil and water samples were collected on November 13, 2020 and were analyzed for volatile organic compounds (VOCs) by SW-846 method 8260D. The data validation was performed in accordance with the USEPA Region 2 *Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-Method 8260B and 8260C,* SOP HW-24, Revision 4 (October 2014) and the USEPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,* EPA 540-R-2017-002 (January 2017), modified as necessary to accommodate the non-CLP methodologies used.

The organic data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) Tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Control Sample (LCS) Results
- Internal Standards
- Field Duplicate Results
- Moisture Content
- Quantitation Limits and Data Assessment
- Sample Quantitation and Compound Identification

Overall Evaluation of Data and Potential Usability Issues

All results are usable as reported or usable with minor qualification due to sample matrix or laboratory quality control outliers.

The validation findings were based on the following information.

Data Completeness

The data package was complete as defined under the requirements for the NYSDEC ASP category B laboratory deliverables.

Holding Times and Sample Preservation

All criteria were met.

GC/MS Tunes

All criteria were met.

Initial and Continuing Calibrations

Initial Calibration:

All criteria were met.

Continuing calibration:

Compounds that did not meet criteria are summarized in the following table.

Date	Standard ID	Compound	CC %D	Associated Samples		Validation Action
11/18/20	T42252	Bromomethane	45.2	FB20201113	XX	UJ nondetects
		1,1,2,2-Tetrachloroethane	29.2	Trip Blank	XX	UJ nondetects
11/17/20	B65940	Trichlorofluoromethane	30.0	SW-3	XX	UJ nondetects
		Carbon tetrachloride	22.4	DUP20201113	XX	UJ nondetects
11/17/20	B65969	Dichlorodifluoromethane	22.9	SW-2	XX	UJ nondetects
		Trichlorofluoromethane	22.6		XX	UJ nondetects

X = Initial calibration (IC) relative standard deviation (%RSD) > 20; estimate (J/UJ) positive and nondetect results.
XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ) positive and nondetect results.
SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.
+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The bromomethane, 1,1,2,2-tetrachloroethane, trichlorofluoromethane, carbon tetrachloride, and dichlorodifluoromethane results were estimated due to continuing calibration exceedances. The bias cannot be determined. The results can be used for project objectives as nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Blanks

Contamination was not detected in the method blanks.

Contamination was detected in the trip blank sample Trip Blank and the field blank sample FB20201113 for VOC analysis. The presence of blank contamination indicates that false positives may exist for these compounds in the associated samples. Action Levels (ALs) were established at <2x reporting limits (RL) (for common contaminants) and <RL (for other contaminants) of the concentrations detected. The following table summarizes the contamination detected.

Field Blank ID	Compound	Level Detected	Action Level	Associated Samples
Trip Blank	Methylene chloride	0.33 ug/L	2xRL	SW-2 SW-3 DUP20201113 FB20201113

Sample results were qualified as follows:

- If sample concentration was < the reporting limit (RL) and ≤ the Action Level, qualify the result as a nondetect (U) at the RL.
- If sample concentration was > the RL and ≤ the Action Level, qualify the result as not detected (U) at the reported concentration.
- If the sample concentration was > the RL and > the Action Level, qualification of the data was not required.

No samples were qualified since the associated sample results were nondetect.

Surrogate Recoveries

All criteria were met.

MS/MSD Results

MS/MSD analyses were performed on sample SW-2 for VOC analysis. The following table lists the MS/MSD percent recoveries (%R) outside of control limits in the VOC analysis and the resulting validation actions.

MS ID	Compound	MS %R (Limits)	MS/D %R (Limits)	Affected Sample	Validation Action
SW-2MS/MSD	1,1,2,2-Tetrachloroethane	61 (69-123)	-	SW-2	UJ nondetects
	1,1,2-Trichloroethane	69 (75-120)	-		UJ nondetects
	1,2,3-Trichlorobenzene	68 (77-120)	64 (77-120)		UJ nondetects
	1,2,4-Trichlorobenzene	68 (75-120)	64 (75-120)		UJ nondetects
	1,2-Dichlorobenzene	75 (80-120)	-		UJ nondetects
	1,2-Dichloropropane	71 (73-124)	-		UJ nondetects
	1,3-Dichlorobenzene	73 (80-120)	78 (80-120)		UJ nondetects
	1,4-Dichlorobenzene	72 (80-120)	76 (80-120)		UJ nondetects
	2-Hexanone	72 (78-120)	76 (78-120)		UJ nondetects
	Benzene	72 (80-123)	79 (80-123)		UJ nondetects
	Chlorobenzene	78 (80-120)	-		UJ nondetects
	cis-1,2-Dichloroethene	78 (80-123)	-		UJ nondetects
	cis-1,3-Dichloropropene	67 (72-120)	-		UJ nondetects
	Cyclohexane	71 (80-132)	77 (80-132)		UJ nondetects
	Ethylbenzene	74 (80-120)	-		UJ nondetects
	Ethylene dibromide	76 (79-120)	-		UJ nondetects
	Isopropylbenzene	71 (80-120)	74 (80-120)		UJ nondetects
	Methyl-tert-butyl ether	76 (80-125)	-		UJ nondetects
	Methylcyclohexane	61 (79-133)	62 (79-133)		UJ nondetects
	Methylene chloride	75 (76-127)	-		UJ nondetects
	m,p-Xylene	71 (80-120)	77 (80-120)		UJ nondetects
	o-Xylene	72 (80-120)	79 (80-120)		UJ nondetects
	Styrene	69 (80-120)	76 (80-120)		UJ nondetects
	Toluene	73 (80-120)	-		UJ nondetects
	trans-1,3-Dichloropropene	67 (68-120)	-		UJ nondetects
SW-2MS/MSD	Methyl acetate	-	153 (58-143)	SW-2	None

- Within control limits

The 1,1,2,2-tetrachloroethane, 1,1,2-trichloroethane, 1,2,3-trichlorobenzene, 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,2-dichloropropane, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 2-hexanone, benzene, chlorobenzene, cis-1,2-dichloroethene, cis-1,3-dichloropropene, cyclohexane, ethylbenzene, ethylene dibromide, isopropylbenzene, methyl-tert-butyl ether, methylcyclohexane, methylene chloride, m,p-xylene, o-xylene, styrene, toluene, and trans-1,3-dichloropropene results may be biased low due to low MS/MSD percent recoveries. The results can be used for project objectives as nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Validation action was not required for methyl acetate due to high MS/MSD recovery as positive results only are affected and this compound was not detected in the associated sample.

LCS Results

All criteria were met.

Internal Standards

All criteria were met.

Field Duplicate Results

Samples SW-3 and DUP20201113 were submitted as the field duplicate pair with this sample group. The following table summarizes the concentrations.

Compound	Concentration (mg/Kg)		RPD
	SW-3	DUP20201113	
Tetrachloroethene	0.0035	0.0044	23

Moisture Content

All criteria were met.

Quantitation Limits and Data Assessment

Results were reported which were below the reporting limit (RL) and above the method detection limit (MDL) in the VOC analysis. These results were qualified as estimated (J) by the laboratory.

Dilutions were not required for VOC analysis.

Sample Quantitation and Compound Identification

Calculations were spot-checked; no discrepancies were noted.

DATA VALIDATION QUALIFIERS

U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.

J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.

JN - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.

R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

LDC #: 50031A1a
SDG #: 460-222776-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Category B

Date: 12/2/20
Page: 1 of 1
Reviewer: JM
2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A, A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A, A	ICAL ≤ 20?, r² ICV ≤ 30?,
IV.	Continuing calibration	SW	CCV ≤ 20?,
V.	Laboratory Blanks	A	
VI.	Field blanks	SW	FB = 4* TB = 5
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	SW	
IX.	Laboratory control samples	A	LCS/D
X.	Field duplicates	SW	D = 2/3
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	Results < RL > MDL = J dets
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID		Lab ID	Matrix	Date
1	SW-2		460-222776-3	Soil	11/13/20
2	SW-3	D	460-222776-4	Soil	11/13/20
3	DUP20201113	D	460-222776-5	Soil	11/13/20
4	FB20201113		460-222776-6	Water	11/13/20
5	Trip Blank		460-222776-7	Water	11/13/20
6	SW-2MS		460-222776-3MS	Soil	11/13/20
7	SW-2MSD		460-222776-3MSD	Soil	11/13/20
8					
9					

Notes:

1	MB 460-740657/8						
2	- 740437/9						
3	- 740775/7						

LDC #: 50031 A1a

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG

Method: Volatiles (EPA SW 846 Method 8260C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20% and relative response factors (RRF) within method criteria?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) < 30%?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 20% and relative response factors (RRF) within method criteria?		✓		
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks were identified in this SDG?	✓			
Were target compounds detected in the field blanks?	✓			
VII. Surrogate spikes				
Were all surrogate percent recovery (%R) within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		✓		

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
X. Field duplicates				
Were field duplicate pairs identified in this SDG?	✓			
Were target compounds detected in the field duplicates?	✓			
XI. Internal standards				
Were internal standard area counts within -50% to +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XII. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	AA. Tetrachloroethene	AAA. 1,3,5-Trimethylbenzene	AAAA. Ethyl tert-butyl ether	A1. 1,3-Butadiene	A2.
B. Bromomethane	BB. 1,1,2,2-Tetrachloroethane	BBB. 4-Chlorotoluene	BBBB. tert-Amyl methyl ether	B1. Hexane	B2.
C. Vinyl choride	CC. Toluene	CCC. tert-Butylbenzene	CCCC. 1-Chlorohexane	C1. Heptane	C2.
D. Chloroethane	DD. Chlorobenzene	DDD. 1,2,4-Trimethylbenzene	DDDD. Isopropyl alcohol	D1. Propylene	D2.
E. Methylene chloride	EE. Ethylbenzene	EEE. sec-Butylbenzene	EEEE. Acetonitrile	E1. Freon 11	E2.
F. Acetone	FF. Styrene	FFF. 1,3-Dichlorobenzene	FFFF. Acrolein	F1. Freon 12	F2.
G. Carbon disulfide	GG. Xylenes, total	GGG. p-Isopropyltoluene	GGGG. Acrylonitrile	G1. Freon 113	G2.
H. 1,1-Dichloroethene	HH. Vinyl acetate	HHH. 1,4-Dichlorobenzene	HHHH. 1,4-Dioxane	H1. Freon 114	H2.
I. 1,1-Dichloroethane	II. 2-Chloroethylvinyl ether	III. n-Butylbenzene	IIII. Isobutyl alcohol	I1. 2-Nitropropane	I2.
J. 1,2-Dichloroethene, total	JJ. Dichlorodifluoromethane	JJJ. 1,2-Dichlorobenzene	JJJJ. Methacrylonitrile	J1. Dimethyl disulfide	J2.
K. Chloroform	KK. Trichlorofluoromethane	KKK. 1,2,4-Trichlorobenzene	KKKK. Propionitrile	K1. 2,3-Dimethyl pentane	K2.
L. 1,2-Dichloroethane	LL. Methyl-tert-butyl ether	LLL. Hexachlorobutadiene	LLLL. Ethyl ether	L1. 2,4-Dimethyl pentane	L2.
M. 2-Butanone	MM. 1,2-Dibromo-3-chloropropane	MMM. Naphthalene	MMMM. Benzyl chloride	M1. 3,3-Dimethyl pentane	M2.
N. 1,1,1-Trichloroethane	NN. Methyl ethyl ketone	NNN. 1,2,3-Trichlorobenzene	NNNN. Iodomethane	N1. 2-Methylpentane	N2.
O. Carbon tetrachloride	OO. 2,2-Dichloropropane	OOO. 1,3,5-Trichlorobenzene	OOOO.1,1-Difluoroethane	O1. 3-Methylpentane	O2.
P. Bromodichloromethane	PP. Bromochloromethane	PPP. trans-1,2-Dichloroethene	PPPP. Tetrahydrofuran	P1. 3-Ethylpentane	P2.
Q. 1,2-Dichloropropane	QQ. 1,1-Dichloropropene	QQQ. cis-1,2-Dichloroethene	QQQQ. Methyl acetate	Q1. 2,2-Dimethylpentane	Q2.
R. cis-1,3-Dichloropropene	RR. Dibromomethane	RRR. m,p-Xylenes	RRRR. Ethyl acetate	R1. 2,2,3- Trimethylbutane	R2.
S. Trichloroethene	SS. 1,3-Dichloropropane	SSS. o-Xylene	SSSS. Cyclohexane	S1. 2,2,4-Trimethylpentane	S2.
T. Chlorodibromomethane	TT. 1,2-Dibromoethane	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	TTTT. Methylcyclohexane	T1. 2-Methylhexane	T2.
U. 1,1,2-Trichloroethane	UU. 1,1,1,2-Tetrachloroethane	UUU. 1,2-Dichlorotetrafluoroethane	UUUU. Allyl chloride	U1. Nonanal	U2.
V. Benzene	VV. Isopropylbenzene	VVV. 4-Ethyltoluene	VVVV. Methyl methacrylate	V1. 2-Methylnaphthalene	V2.
W. trans-1,3-Dichloropropene	WW. Bromobenzene	WWW. Ethanol	WWWW. Ethyl methacrylate	W1. Methanol	W2.
X. Bromoform	XX. 1,2,3-Trichloropropane	XXX. Di-isopropyl ether	XXXX. cis-1,4-Dichloro-2-butene	X1. 1,2,3-Trimethylbenzene	X2.
Y. 4-Methyl-2-pentanone	YY. n-Propylbenzene	YYY. tert-Butanol	YYYY. trans-1,4-Dichloro-2-butene	Y1. 2-Propanol	Y2.
Z. 2-Hexanone	ZZ. 2-Chlorotoluene	ZZZ. tert-Butyl alcohol	ZZZZ. Pentachloroethane	Z1. Ethylene dibromide	

LDC #: 50031 A19

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Y N N/A Were percent differences (%D) ≤20 % and relative response factors (RRF) within the method criteria?

#	Date	Standard ID	Compound	Finding %D (Limit: <20.0%)	Finding RRF (Limit)	Associated Samples	Qualifications
	11/18/20	T42252	B	45.2		4, 5 MB (ND)	J/UJ/A
			BB	29.2		↓ ↓	↓
	11/17/20	B659490	KK	30.0		2, 3 MB2 (ND)	
			O	22.4		↓ ↓	
	11/17/20	B65969	JJ	22.9		1, 6, 7, MB1 (ND)	
			KK	22.6		↓ ↓	↓

Note: * = Ave RRF failed method criteria but within validation criteria

LDC #: 50031 A1a

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?
Blank units: ug/L **Associated sample units:** ug/Kg
Sampling date: 11/13/20
Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: _____ Associated Samples: All except 5 (ND)

Compound	Blank ID	Sample Identification								
	5									
E	0.33									

Blank units: _____ **Associated sample units:** _____
Sampling date: _____
Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: _____ Associated Samples: _____

Compound	Blank ID	Sample Identification								

Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

LDC #: 50031 A1c

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: JVG

METHOD : GC/MS VOA (EPA SW 846 Method 8260~~B~~)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.

Y N N/A Was a MS/MSD analyzed every 20 samples of each matrix?

Y N N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	6/7	See	attached ( )	( )	( )	1 (MD) 7 R	J/UJ/A. J/A
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
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			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		

FORM III
GC/MS VOA MATRIX SPIKE RECOVERY

Lab Name: Eurofins TestAmerica, Edison Job No.: 460-222776-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: B65993.D

Lab ID: 460-222776-3 MS Client ID: SW-2 MS

COMPOUND	SPIKE ADDED (mg/Kg)	SAMPLE CONCENTRATION (mg/Kg)	MS CONCENTRATION (mg/Kg)	MS % REC	QC LIMITS REC	#
1,1,1-Trichloroethane	0.0228	0.0011 U	0.0203	89	78-132	
1,1,2,2-Tetrachloroethane BB	0.0228	0.0011 U	0.0139	61	69-123	*
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0228	0.0011 U	0.0193	85	78-136	
1,1,2-Trichloroethane U	0.0228	0.0011 U	0.0156	69	75-120	*
1,1-Dichloroethane	0.0228	0.0011 U	0.0177	78	76-129	
1,1-Dichloroethene	0.0228	0.0011 U	0.0205	90	77-132	
1,2,3-Trichlorobenzene NNN	0.0228	0.0011 U	0.0154	68	77-120	*
1,2,4-Trichlorobenzene KKK	0.0228	0.0011 U	0.0155	68	75-120	*
1,2-Dibromo-3-Chloropropane	0.0228	0.0011 U	0.0163	72	60-126	
1,2-Dichlorobenzene JJJ	0.0228	0.0011 U	0.0171	75	80-120	*
1,2-Dichloroethane	0.0228	0.0011 U	0.0169	74	70-132	
1,2-Dichloropropane Q	0.0228	0.0011 U	0.0162	71	73-124	*
1,3-Dichlorobenzene FFF	0.0228	0.0011 U	0.0165	73	80-120	*
1,4-Dichlorobenzene HHH	0.0228	0.0011 U	0.0164	72	80-120	*
1,4-Dioxane	0.456	0.022 U	0.454	100	73-136	
2-Butanone (MEK)	0.114	0.0054 U	0.0902	79	75-120	
2-Hexanone Z	0.114	0.0054 U	0.0815	72	78-120	*
4-Methyl-2-pentanone (MIBK)	0.114	0.0054 U	0.0914	80	80-122	
Acetone	0.114	0.0065 U	0.114	100	63-131	
Benzene V	0.0228	0.0011 U	0.0164	72	80-123	*
Bromoform	0.0228	0.0011 U	0.0191	84	48-142	
Bromomethane	0.0228	0.0011 U	0.0227	100	68-136	
Carbon disulfide	0.0228	0.0011 U	0.0184	81	67-136	
Carbon tetrachloride	0.0228	0.0011 U	0.0214	94	72-136	
Chlorobenzene DD	0.0228	0.0011 U	0.0177	78	80-120	*
Chlorobromomethane	0.0228	0.0011 U	0.0200	88	76-127	
Chlorodibromomethane	0.0228	0.0011 U	0.0185	81	62-128	
Chloroethane	0.0228	0.0011 U	0.0207	91	65-134	
Chloroform	0.0228	0.0011 U	0.0183	80	79-126	
Chloromethane	0.0228	0.0011 U	0.0200	88	48-150	
cis-1,2-Dichloroethene QQQ	0.0228	0.0011 U	0.0178	78	80-123	*
cis-1,3-Dichloropropene R	0.0228	0.0011 U	0.0153	67	72-120	*
Cyclohexane SSS	0.0228	0.0011 U	0.0161	71	80-132	*
Dichlorobromomethane	0.0228	0.0011 U	0.0175	77	73-124	
Dichlorodifluoromethane	0.0228	0.0011 U	0.0152	67	40-146	
Ethylbenzene EE	0.0228	0.0011 U	0.0169	74	80-120	*
Ethylene Dibromide ZZ	0.0228	0.0011 U	0.0172	76	79-120	*
Isopropylbenzene VV	0.0228	0.0011 U	0.0161	71	80-120	*
Methyl acetate	0.0456	0.0054 U	0.0550	121	58-143	
Methyl tert-butyl ether LL	0.0228	0.0011 U	0.0174	76	80-125	*
Methylcyclohexane TTT	0.0228	0.0011 U	0.0140	61	79-133	*

JMJ/A

Column to be used to flag recovery and RPD values

FORM III 8260D

FORM III
GC/MS VOA MATRIX SPIKE RECOVERY

Lab Name: Eurofins TestAmerica, Edison Job No.: 460-222776-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: B65993.D

Lab ID: 460-222776-3 MS Client ID: SW-2 MS

COMPOUND	SPIKE ADDED (mg/Kg)	SAMPLE CONCENTRATION (mg/Kg)	MS CONCENTRATION (mg/Kg)	MS % REC	QC LIMITS REC	#
Methylene Chloride E	0.0228	0.0011 U	0.0171	75	76-127	*
m-Xylene & p-Xylene RRR	0.0228	0.0011 U	0.0161	71	80-120	*
o-Xylene SSS	0.0228	0.0011 U	0.0165	72	80-120	*
Styrene FF	0.0228	0.0011 U	0.0158	69	80-120	*
Tetrachloroethene	0.0228	0.0011 U	0.0197	87	78-123	
Toluene CC	0.0228	0.0011 U	0.0165	73	80-120	*
trans-1,2-Dichloroethene	0.0228	0.0011 U	0.0186	81	78-128	
trans-1,3-Dichloropropene W	0.0228	0.0011 U	0.0152	67	68-120	*
Trichloroethene	0.0228	0.0011 U	0.0179	79	79-120	
Trichlorofluoromethane	0.0228	0.0011 U	0.0247	109	67-142	
Vinyl chloride	0.0228	0.0011 U	0.0202	89	56-147	

J/MS/A

Column to be used to flag recovery and RPD values

FORM III 8260D

FORM III
GC/MS VOA MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Eurofins TestAmerica, Edison Job No.: 460-222776-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: B65994.D

Lab ID: 460-222776-3 MSD Client ID: SW-2 MSD

COMPOUND	SPIKE ADDED (mg/Kg)	MSD CONCENTRATION (mg/Kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
1,1,1-Trichloroethane	0.0224	0.0218	98	7	30	78-132	
1,1,2,2-Tetrachloroethane	0.0224	0.0165	74	17	30	69-123	
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0224	0.0209	94	8	30	78-136	
1,1,2-Trichloroethane	0.0224	0.0176	79	12	30	75-120	
1,1-Dichloroethane	0.0224	0.0193	86	9	30	76-129	
1,1-Dichloroethene	0.0224	0.0231	103	12	30	77-132	
1,2,3-Trichlorobenzene NNN	0.0224	0.0144	64	7	30	77-120	* J/MJ/A
1,2,4-Trichlorobenzene kkk	0.0224	0.0144	64	8	30	75-120	*
1,2-Dibromo-3-Chloropropane	0.0224	0.0186	83	13	30	60-126	
1,2-Dichlorobenzene	0.0224	0.0181	81	5	30	80-120	
1,2-Dichloroethane	0.0224	0.0195	87	15	30	70-132	
1,2-Dichloropropane	0.0224	0.0174	78	7	30	73-124	
1,3-Dichlorobenzene FFF	0.0224	0.0174	78	5	30	80-120	* J/MJ/A
1,4-Dichlorobenzene HHH	0.0224	0.0169	76	3	30	80-120	*
1,4-Dioxane	0.447	0.453	101	0	30	73-136	
2-Butanone (MEK)	0.112	0.0973	87	8	30	75-120	
2-Hexanone Z	0.112	0.0852	76	4	30	78-120	* J/MJ/A
4-Methyl-2-pentanone (MIBK)	0.112	0.0998	89	9	30	80-122	
Acetone	0.112	0.127	114	11	30	63-131	
Benzene √	0.0224	0.0176	79	7	30	80-123	* J/MJ/A
Bromoform	0.0224	0.0205	92	7	30	48-142	
Bromomethane	0.0224	0.0213	95	6	30	68-136	
Carbon disulfide	0.0224	0.0196	88	6	30	67-136	
Carbon tetrachloride	0.0224	0.0230	103	7	30	72-136	
Chlorobenzene	0.0224	0.0193	86	8	30	80-120	
Chlorobromomethane	0.0224	0.0215	96	7	30	76-127	
Chlorodibromomethane	0.0224	0.0211	94	13	30	62-128	
Chloroethane	0.0224	0.0200	89	3	30	65-134	
Chloroform	0.0224	0.0201	90	10	30	79-126	
Chloromethane	0.0224	0.0187	84	7	30	48-150	
cis-1,2-Dichloroethene	0.0224	0.0197	88	10	30	80-123	
cis-1,3-Dichloropropene	0.0224	0.0175	78	13	30	72-120	
Cyclohexane SSSS	0.0224	0.0173	77	7	30	80-132	* J/MJ/A
Dichlorobromomethane	0.0224	0.0203	91	14	30	73-124	
Dichlorodifluoromethane	0.0224	0.0144	65	5	30	40-146	
Ethylbenzene	0.0224	0.0184	82	8	30	80-120	
Ethylene Dibromide	0.0224	0.0192	86	11	30	79-120	
Isopropylbenzene VV	0.0224	0.0165	74	2	30	80-120	* J/MJ/A
Methyl acetate QQQQ	0.0447	0.0684	153	22	30	58-143	* J dets/A
Methyl tert-butyl ether	0.0224	0.0193	87	11	30	80-125	
Methylcyclohexane TTTT	0.0224	0.0138	62	1	30	79-133	* J/MJ/A

Column to be used to flag recovery and RPD values

FORM III 8260D

FORM III
GC/MS VOA MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Eurofins TestAmerica, Edison Job No.: 460-222776-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: B65994.D

Lab ID: 460-222776-3 MSD Client ID: SW-2 MSD

COMPOUND	SPIKE ADDED (mg/Kg)	MSD CONCENTRATION (mg/Kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Methylene Chloride	0.0224	0.0185	83	8	30	76-127	
m-Xylene & p-Xylene	0.0224	0.0172	77	6	30	80-120	*
o-Xylene	0.0224	0.0176	79	7	30	80-120	*
Styrene	0.0224	0.0169	76	7	30	80-120	*
Tetrachloroethene	0.0224	0.0208	93	5	30	78-123	
Toluene	0.0224	0.0178	80	7	30	80-120	
trans-1,2-Dichloroethene	0.0224	0.0198	89	6	30	78-128	
trans-1,3-Dichloropropene	0.0224	0.0173	77	12	30	68-120	
Trichloroethene	0.0224	0.0197	88	10	30	79-120	
Trichlorofluoromethane	0.0224	0.0235	105	5	30	67-142	
Vinyl chloride	0.0224	0.0193	86	4	30	56-147	

Column to be used to flag recovery and RPD values

FORM III 8260D

LDC #: 50031A1a

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

Compound	Concentration (mg/Kg)		RPD
	2	3	
AA	0.0035	0.0044	23

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LDC #: 50031A1a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound
S= Standard deviation of the RRFs

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 50 std)	Recalculated RRF (RRF 50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL CVOAMS2	10/15/2020	2-Butanone (BUT)	0.3717	0.3717	0.4022	0.4022	5.2	5.2
			cis-1,2-DCE (FBZ)	0.4071	0.4071	0.4136	0.4137	7.1	7.1
			1,4-Dioxane (DXE)	1.6063	1.6063	1.4751	1.4751	18.6	18.6
			Tetrachloroethene (CBZ)	0.5483	0.5483	0.5409	0.5409	11.9	11.9
			1,4-DCB (DCB)	1.8936	1.8936	1.9749	1.9749	5.8	5.8
2	ICAL CVOAMS15	9/25/2020	2-Butanone (BUT)	0.9109	0.9109	0.8712	0.8712	8.1	8.1
			cis-1,2-DCE (FBZ)	0.3060	0.3060	0.3123	0.3123	3.8	3.8
			1,4-Dioxane (DXE)	1.0598	1.0598	1.0128	1.0128	8.6	8.6
			Tetrachloroethene (CBZ)	0.3976	0.3976	0.3998	0.3998	3.6	3.6
			1,4-DCB (DCB)	1.4170	1.4170	1.4491	1.4491	3.5	3.5

LDC # 50031A1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CCV)	Recalculated RRF (CCV)	Reported % D	Recalculated %D
1	B65940	11/17/2020	2-Butanone (BUT)	0.4022	0.3920	0.3920	2.5	2.5
			cis-1,2-DCE (FBZ)	0.4136	0.4039	0.4039	2.4	2.3
			1,4-Dioxane (DXE)	1.4751	1.5520	1.5520	5.2	5.2
			Tetrachloroethene (CBZ)	0.5409	0.6306	0.6306	16.6	16.6
			1,4-DCB (DCB)	1.9749	1.9740	1.9740	0.0	0.0
2	B65969	11/17/2020	2-Butanone (BUT)	0.4022	0.4146	0.4146	3.1	3.1
			cis-1,2-DCE (FBZ)	0.4136	0.4079	0.4079	1.4	1.4
			1,4-Dioxane (DXE)	1.4751	1.4120	1.4120	4.3	4.3
			Tetrachloroethene (CBZ)	0.5409	0.6100	0.6100	12.8	12.8
			1,4-DCB (DCB)	1.9749	1.9280	1.9280	2.4	2.4
3	T42252	11/18/2020	2-Butanone (BUT)	0.8712	1.0040	1.0040	15.3	15.2
			cis-1,2-DCE (FBZ)	0.3123	0.3333	0.3333	6.7	6.7
			1,4-Dioxane (DXE)	1.0128	1.1560	1.1560	14.2	14.1
			Tetrachloroethene (CBZ)	0.3998	0.3928	0.3928	1.8	1.8
			1,4-DCB (DCB)	1.4491	1.5420	1.5420	6.4	6.4

LDC #: 50031 A1a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 2

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	50.0	65.0	130	130	0
1,2-Dichloroethane-d4		64.4	129	129	
Toluene-d8		56.2	112	112	
Bromofluorobenzene		59.4	119	119	

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 50031 A1a

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA

Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentration

RPD = | MSC - MSC | * 2/(MSC + MSDC)

MSC = Matrix spike concentration; MSDC = Matrix spike duplicate concentration

MS/MSD sample: 6/7

Compound	Spike Added (mg/kg)		Sample Concentration (mg/kg)	Spiked Sample Concentration (mg/kg)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	------	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
1,1-Dichloroethene	0.0228	0.0224	0	0.0205	0.0231	90	90	103	103	12	12
Trichloroethene	↓	↓	↓	0.0179	0.0197	79	79	88	88	10	10
Benzene	↓	↓	↓	0.0164	0.0176	72	72	79	79	7	7
Toluene	↓	↓	↓	0.0165	0.0178	73	73	80	80	7	7
Chlorobenzene	↓	↓	↓	0.0177	0.0193	78	78	86	86	8	8.0

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 50031 A1a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration; SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: LCS ID 460_740437/4,5

Compound	Spike Added (mg/kg)		Spiked Sample Concentration (mg/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
1,1-Dichloroethene	0.020	0.020	0.0219	0.0233	109	109	116	116	6	6
Trichloroethene			0.0190	0.0211	95	95	105	105	10	10
Benzene			0.0167	0.0187	84	84	93	93	11	11
Toluene			0.0175	0.0194	88	88	97	97	10	10
Chlorobenzene			0.0193	0.0208	96	96	104	104	8	7.5

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 46031A1a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The concentration of the sample was calculated for the compound identified below using the following calculation:

$$\text{Concentration} = \frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 2 , PCE

$$\text{Conc.} = \frac{(8769)(50)(5\ mL)}{(278429)(0.5409)(4.47g)(0.937)(1000)}$$

$$= 0.00348$$

$$\approx 0.0035\ mg/kg$$

#	Sample ID	Compound	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Qualification
	2	PCE	0.0035	0.0035	—

Site: Long Island City, 30th Street
Laboratory: Eurofins
Report No.: 460-224069-1
Reviewer: Josephine Go and Christina Rink/Laboratory Data Consultants for GEI Consultants, Inc. – Huntington Station, NY
Date: December 30, 2020

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
SW-1	460-224069-1	VOC
SW-4	460-224069-2	VOC
SW-5	460-224069-3	VOC
SW-12	460-224069-4	VOC
FB20201204	460-224069-7	VOC
Trip Blank	460-224069-8	VOC

Associated QC Samples(s):
Field/Trip Blanks: FB20201204, Trip Blank
Field Duplicate pair: None Associated

The above-listed soil and water samples were collected on December 4, 2020 and were analyzed for volatile organic compounds (VOCs) by SW-846 method 8260D. The data validation was performed in accordance with the USEPA Region 2 *Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-Method 8260B and 8260C,* SOP HW-24, Revision 4 (October 2014) and the USEPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,* EPA 540-R-2017-002 (January 2017), modified as necessary to accommodate the non-CLP methodologies used.

The organic data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) Tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Control Sample (LCS) Results
- Internal Standards
- Field Duplicate Results
- Moisture Content
- Quantitation Limits and Data Assessment
- Sample Quantitation and Compound Identification

Overall Evaluation of Data and Potential Usability Issues

All results are usable as reported or usable with minor qualification due to laboratory quality control outliers.

The validation findings were based on the following information.

Data Completeness

The data package was complete as defined under the requirements for the NYSDEC ASP category B laboratory deliverables.

Holding Times and Sample Preservation

All criteria were met.

GC/MS Tunes

All criteria were met.

Initial and Continuing Calibrations

Initial Calibration:

Compounds that did not meet criteria are summarized in the following table.

Date	Instrument ID	Compound	IC %D	Associated Samples		Validation Action
11/17/20	065936	4-Methyl-2-pentanone	33.3	FB20201204	SS	UJ nondetects
		2-Hexanone	41.9	Trip Blank	SS	UJ nondetects

X = Initial calibration (IC) relative standard deviation (%RSD) > 20; estimate (J/UJ) positive and nondetect results.
XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ) positive and nondetect results.
SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.
+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The 4-methyl-2-pentanone and 2-hexanone results were estimated due to second source calibration exceedances. The bias cannot be determined. The results can be used for project objectives as nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Continuing calibration:

Compounds that did not meet criteria are summarized in the following table.

Date	Standard ID	Compound	CC %D	Associated Samples		Validation Action
12/07/20	066660	Bromomethane	28.5	FB20201204	XX	UJ nondetects
		Trichlorofluoromethane	24.2	Trip Blank	XX	UJ nondetects
		1,1-Dichloroethene	24.5		XX	UJ nondetects
		Acetone	30.1		XX	UJ nondetects
		Methyl acetate	33.4		XX	UJ nondetects
		1,1,1-Trichloroethane	22.7		XX	UJ nondetects
12/08/20	K20632	Bromomethane	25.9	SW-1	XX	UJ nondetects
		Trichlorofluoromethane	39.8	SW-4	XX	UJ nondetects
				SW-5		

X = Initial calibration (IC) relative standard deviation (%RSD) > 20; estimate (J/UJ) positive and nondetect results.
XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ) positive and nondetect results.
SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.
+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The bromomethane, trichlorofluoromethane, 1,1-dichloroethene, acetone, methyl acetate, and 1,1,1-trichloroethane results were estimated due to continuing calibration exceedances. The bias cannot be determined. The results can be used for project objectives as nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Blanks

Contamination was not detected in the method blanks.

Contamination was detected in the trip blank sample Trip Blank and the field blank sample FB20201204 for VOC analysis. The presence of blank contamination indicates that false positives may exist for these compounds in the associated samples. Action Levels (ALs) were established at <2x reporting limits (RL) (for common contaminants) and <RL (for other contaminants) of the concentrations detected. The following table summarizes the contamination detected.

Field Blank ID	Compound	Level Detected	Action Level	Associated Samples
Trip Blank	Methylene chloride	0.43 ug/L	2xRL	SW-1 SW-4 SW-5 SW-12 FB20201204
FB20201204	Methylene chloride	0.38 ug/L	2xRL	SW-1 SW-4 SW-5 SW-12

Sample results were qualified as follows:

- If sample concentration was < the reporting limit (RL) and ≤ the Action Level, qualify the result as a nondetect (U) at the RL.
- If sample concentration was > the RL and ≤ the Action Level, qualify the result as not detected (U) at the reported concentration.
- If the sample concentration was > the RL and > the Action Level, qualification of the data was not required.

Qualified sample results are listed in the table below.

Sample ID	Compound	Level Detected	Validation Action
FB20201204	Methylene chloride	0.38 ug/L	1.0U ug/L

These results can be used for project objectives as nondetects (U) which may have a minor impact on the data usability.

Surrogate Recoveries

All criteria were met.

MS/MSD Results

MS/MSD analyses were not associated with this sample set. Validation action was not required on this basis.

LCS Results

The following table lists the LCS/LCSD percent recoveries (%R) outside of control limits in the VOC analysis and the resulting validation actions.

LCS ID	Compound	LCS %R (Limits)	LCS/D %R (Limits)	Affected Sample	Validation Action
LCS/LCSD 460-745157/4,5	Methyl acetate	66 (70-127)	-	FB20201204 Trip Blank	UJ nondetects
LCS/LCSD 460-745199/3,4	Trichlorofluoromethane	-	146 (67-142)	SW-1 SW-4 SW-5	None
LCS/LCSD 460-745532/4,5	Methylcyclohexane Tetrachloroethene	78 (79-133) 76 (78-123)	- -	SW-12	J detects/UJ nondetects J detects/UJ nondetects

- Within control limits

The methyl acetate result may be biased low due to low LCS/LCSD percent recovery. The result can be used for project objectives as nondetect with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Validation action was not required for trichlorofluoromethane due to high LCS/LCSD recovery as positive results only are affected and this compound was not detected in the associated samples.

The methylcyclohexane and tetrachloroethene results may be biased low due to low LCS/LCSD percent recoveries. The results can be used for project objectives as estimated values (J) or nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Internal Standards

All criteria were met.

Field Duplicate Results

A field duplicate pair was not associated with this sample set. Validation action was not required on this basis.

Moisture Content

All criteria were met.

Quantitation Limits and Data Assessment

Results were reported which were below the reporting limit (RL) and above the method detection limit (MDL) in the VOC analysis. These results were qualified as estimated (J) by the laboratory.

Dilutions were not required for VOC analysis.

Sample Quantitation and Compound Identification

Calculations were spot-checked; no discrepancies were noted.

DATA VALIDATION QUALIFIERS

U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.

J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.

JN - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.

R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

LDC #: 50031B1a
SDG #: 460-224069-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Category B

Date: 12/21/20
Page: 1 of 1
Reviewer: JM
2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / SW	ICAL ≤ 20% r ICV ≤ 30%
IV.	Continuing calibration	SW	CCV ≤ 20%
V.	Laboratory Blanks	A	
VI.	Field blanks	SW	FB = 5 TB = 6
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	SW	LCS
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	Results <RL >MDL = J dets
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	SW-1	460-224069-1	Soil	12/04/20
2	SW-4	460-224069-2	Soil	12/04/20
3	SW-5	460-224069-3	Soil	12/04/20
4	SW-12	460-224069-4	Soil	12/04/20
5	FB20201204	460-224069-7	Water	12/04/20
6	Trip Blank	460-224069-8	Water	12/04/20
7				
8				
9				

Notes:

1	MB 460-745532/8						
2	" - 745199/7						
3	" - 745157/6						
	LB 3 460-744704/1-A						

LDC #: 50031 B1a

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG

Method: Volatiles (EPA SW 846 Method 8260C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20% and relative response factors (RRF) within method criteria?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 30%?		✓		
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 20% and relative response factors (RRF) within method criteria?		✓		
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks were identified in this SDG?	✓			
Were target compounds detected in the field blanks?	✓			
VII. Surrogate spikes				
Were all surrogate percent recovery (%R) within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?		✓		
X. Field duplicates				
Were field duplicate pairs identified in this SDG?	.	✓		
Were target compounds detected in the field duplicates?			✓	
XI. Internal standards				
Were internal standard area counts within -50% to +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XII. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	AA. Tetrachloroethene	AAA. 1,3,5-Trimethylbenzene	AAAA. Ethyl tert-butyl ether	A1. 1,3-Butadiene	A2.
B. Bromomethane	BB. 1,1,2,2-Tetrachloroethane	BBB. 4-Chlorotoluene	BBBB. tert-Amyl methyl ether	B1. Hexane	B2.
C. Vinyl choride	CC. Toluene	CCC. tert-Butylbenzene	CCCC. 1-Chlorohexane	C1. Heptane	C2.
D. Chloroethane	DD. Chlorobenzene	DDD. 1,2,4-Trimethylbenzene	DDDD. Isopropyl alcohol	D1. Propylene	D2.
E. Methylene chloride	EE. Ethylbenzene	EEE. sec-Butylbenzene	EEEE. Acetonitrile	E1. Freon 11	E2.
F. Acetone	FF. Styrene	FFF. 1,3-Dichlorobenzene	FFFF. Acrolein	F1. Freon 12	F2.
G. Carbon disulfide	GG. Xylenes, total	GGG. p-Isopropyltoluene	GGGG. Acrylonitrile	G1. Freon 113	G2.
H. 1,1-Dichloroethene	HH. Vinyl acetate	HHH. 1,4-Dichlorobenzene	HHHH. 1,4-Dioxane	H1. Freon 114	H2.
I. 1,1-Dichloroethane	II. 2-Chloroethylvinyl ether	III. n-Butylbenzene	IIII. Isobutyl alcohol	I1. 2-Nitropropane	I2.
J. 1,2-Dichloroethene, total	JJ. Dichlorodifluoromethane	JJJ. 1,2-Dichlorobenzene	JJJJ. Methacrylonitrile	J1. Dimethyl disulfide	J2.
K. Chloroform	KK. Trichlorofluoromethane	KKK. 1,2,4-Trichlorobenzene	KKKK. Propionitrile	K1. 2,3-Dimethyl pentane	K2.
L. 1,2-Dichloroethane	LL. Methyl-tert-butyl ether	LLL. Hexachlorobutadiene	LLLL. Ethyl ether	L1. 2,4-Dimethyl pentane	L2.
M. 2-Butanone	MM. 1,2-Dibromo-3-chloropropane	MMM. Naphthalene	MMMM. Benzyl chloride	M1. 3,3-Dimethyl pentane	M2.
N. 1,1,1-Trichloroethane	NN. Methyl ethyl ketone	NNN. 1,2,3-Trichlorobenzene	NNNN. Iodomethane	N1. 2-Methylpentane	N2.
O. Carbon tetrachloride	OO. 2,2-Dichloropropane	OOO. 1,3,5-Trichlorobenzene	OOOO.1,1-Difluoroethane	O1. 3-Methylpentane	O2.
P. Bromodichloromethane	PP. Bromochloromethane	PPP. trans-1,2-Dichloroethene	PPPP. Tetrahydrofuran	P1. 3-Ethylpentane	P2.
Q. 1,2-Dichloropropane	QQ. 1,1-Dichloropropene	QQQ. cis-1,2-Dichloroethene	QQQQ. Methyl acetate	Q1. 2,2-Dimethylpentane	Q2.
R. cis-1,3-Dichloropropene	RR. Dibromomethane	RRR. m,p-Xylenes	RRRR. Ethyl acetate	R1. 2,2,3- Trimethylbutane	R2.
S. Trichloroethene	SS. 1,3-Dichloropropane	SSS. o-Xylene	SSSS. Cyclohexane	S1. 2,2,4-Trimethylpentane	S2.
T. Chlorodibromomethane	TT. 1,2-Dibromoethane	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	TTTT. Methylcyclohexane	T1. 2-Methylhexane	T2.
U. 1,1,2-Trichloroethane	UU. 1,1,1,2-Tetrachloroethane	UUU. 1,2-Dichlorotetrafluoroethane	UUUU. Allyl chloride	U1. Nonanal	U2.
V. Benzene	VV. Isopropylbenzene	VVV. 4-Ethyltoluene	VVVV. Methyl methacrylate	V1. 2-Methylnaphthalene	V2.
W. trans-1,3-Dichloropropene	WW. Bromobenzene	WWW. Ethanol	WWWW. Ethyl methacrylate	W1. Methanol	W2.
X. Bromoform	XX. 1,2,3-Trichloropropane	XXX. Di-isopropyl ether	XXXX. cis-1,4-Dichloro-2-butene	X1. 1,2,3-Trimethylbenzene	X2.
Y. 4-Methyl-2-pentanone	YY. n-Propylbenzene	YYY. tert-Butanol	YYYY. trans-1,4-Dichloro-2-butene	Y1. 2-Propanol	Y2.
Z. 2-Hexanone	ZZ. 2-Chlorotoluene	ZZZ. tert-Butyl alcohol	ZZZZ. Pentachloroethane	Z1.	Z2.

LDC #: 50031 B1a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was an initial calibration verification standard analyzed after each ICAL for each instrument?

Y N N/A Were all %D within the validation criteria of ≤20/30%D?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤ 20/30.0%)	Associated Samples	Qualifications
	11/17/20	065936	Y	33.3	5, 6, MB3 (ND)	J/UJ/A
			Z	41.9		

LDC #: 50031 B1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Y N N/A Were percent differences (%D) ≤20 % and relative response factors (RRF) within the method criteria?

#	Date	Standard ID	Compound	Finding %D (Limit: <20.0%)	Finding RRF (Limit)	Associated Samples	Qualifications
	12/07/20	066660	B	28.5		5, 6, MB3 (ND)	J/UJ/A
			KK	24.2			
			H	24.5			
			F	30.1			
			QQQQ	33.4			
			NNN	22.7			
	12/08/20	K20632	B	25.9		1-3, MB2 (ND)	
			KK	39.8			

Note: * = Ave RRF failed method criteria but within validation criteria

LDC #: 50031 Bla

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?
Blank units: ug/L **Associated sample units:** ug/L ; ug/kg
Sampling date: 12/04/20
Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: Associated Samples:

TB = All except 6
FB = All except 5, 6

Compound	Blank ID (TB)	FB	Sample Identification							
	6	5								
E	0.43	0.38/1.04								

Blank units: **Associated sample units:**
Sampling date:
Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: Associated Samples:

Compound	Blank ID	Sample Identification								

Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

LDC #: ~~SA~~ 50031 B1a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260 D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y ~~N~~ N/A Was a LCS required?

Y N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	LCS/D 460-745157/4,5	QQQQ	66 (70-127)	( )	( )	5,6, MB3 (ND)	J/UJ/P
			( )	( )	( )		
			( )	( )	( )		
	LCS/D 460-745199/3,4	KK	( )	146 (67-142)	( )	1-3, MB2 (ND)	J dets/P
			( )	( )	( )		
			( )	( )	( )		
	LCS/D 460-745532/4,5	TTTT	78 (79-133	( )	( )	4, MB1 (ND + Det)	J/UJ/P
		~~AA~~	76 (78-123	( )	( )	↓ ↓	↓
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
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			( )	( )	( )		
			( )	( )	( )		

LDC #: 50031B1a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$ — A_x = Area of Compound — A_{is} = Area of associated internal standard

average RRF = sum of the RRFs/number of standards — C_x = Concentration of compound — C_{is} = Concentration of internal standard

%RSD = 100 * (S/X) — S= Standard deviation of the RRFs — X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 50 std)	Recalculated RRF (RRF 50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL CVOAMS12	11/17/20	2-Butanone (BUT)	0.2939	0.2939	0.2875	0.2875	3.1	3.1
			cis-1,2-DCE (FBZ)	0.2142	0.2142	0.2139	0.2140	16.1	16.1
			1,4-Dioxane (DXE)	1.0624	1.0624	0.9817	0.9817	6.5	6.5
			Tetrachloroethene (CBZ)	0.3367	0.3367	0.3287	0.3287	7.2	7.2
			1,4-DCB (DCB)	1.2957	1.2957	1.2680	1.2681	3.4	3.4
2	ICAL CVOAMS4	12/04/20	2-Butanone (BUT)	0.4412	0.4412	0.4451	0.4451	3.9	3.9
			cis-1,2-DCE (FBZ)	0.4545	0.4545	0.4460	0.4460	6.8	6.8
			1,4-Dioxane (DXE)	1.8045	1.8045	1.8615	1.8615	15.6	15.6
			Tetrachloroethene (CBZ)	0.5889	0.5889	0.5581	0.5581	9.6	9.6
			1,4-DCB (DCB)	2.3373	2.3373	2.2423	2.2423	9.5	9.5
3	ICAL CVOAMS9	12/05/20	2-Butanone (BUT)	0.2490	0.2490	0.2802	0.2802	14.4	14.4
			cis-1,2-DCE (FBZ)	0.3199	0.3199	0.3249	0.3249	6.6	6.6
			1,4-Dioxane (DXE)	see r2 calc					
			Tetrachloroethene (CBZ)	0.3568	0.3568	0.3564	0.3564	3.8	3.8
			1,4-DCB (DCB)	1.2844	1.2844	1.3365	1.3365	5.8	5.8

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Method: (EPA SW 846 Method 8260C)

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Conc ratio	(X^2) Conc ratio
12/5/2020	VOAMS9	1,4-Dioxane	20	0.0137	0.02	0.00040
			100	0.1341	0.10	0.0100
		IS = 1,4-Dioxane-d8	400	0.4473	0.40	0.1600
			1000	1.1686	1.00	1.0000
			4000	4.4840	4.00	16.0000
			10000	9.6250	10.00	100.0000

Regression Output	**Calculated**		***Reported WQR***	
Constant	*c*	*0.00000*	*c*	*0.00000*
Std Err of Y Est				
R Squared		*0.9999780*		*0.9910000*
Degrees of Freedom				
	m1	*m2*	*m1*	*m2*
X Coefficient(s)	*1.22022E+00*	*-2.5751E-02*	*1.22020E+00*	*-2.6000E-05*
Std Err of Coef.				
Correlation Coefficient		*0.999989*		
Coefficient of Determination (r^2)		*0.999978*		

LDC # 50031B1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CCV)	Recalculated RRF (CCV)	Reported % D	Recalculated %D
1	O66660	12/07/20	2-Butanone (BUT)	0.2875	0.2606	0.2606	9.4	9.4
			cis-1,2-DCE (FBZ)	0.2139	0.1754	0.1754	18.0	18.0
			1,4-Dioxane (DXE)	0.9817	1.0015	1.0015	2.0	2.0
			Tetrachloroethene (CBZ)	0.3287	0.3028	0.3028	7.9	7.9
			1,4-DCB (DCB)	1.2680	1.2117	1.2117	4.4	4.4
2	D75891	12/09/20	2-Butanone (BUT)	0.4451	0.3680	0.3680	17.3	17.3
			cis-1,2-DCE (FBZ)	0.4460	0.4119	0.4119	7.6	7.6
			1,4-Dioxane (DXE)	1.8615	1.7273	1.7273	7.2	7.2
			Tetrachloroethene (CBZ)	0.5581	0.4506	0.4506	19.3	19.3
			1,4-DCB (DCB)	2.2423	2.0678	2.0678	7.8	7.8
3	K20632	12/08/20	2-Butanone (BUT)	0.2802	0.2873	0.2873	2.6	2.6
			cis-1,2-DCE (FBZ)	0.3249	0.3479	0.3479	7.1	7.1
			1,4-Dioxane (DXE)	400.0000	431.0000	430.5183	7.6	7.6
			Tetrachloroethene (CBZ)	0.3564	0.4068	0.4068	14.2	14.2
			1,4-DCB (DCB)	1.3365	1.3667	1.3667	2.3	2.3

LDC #: 50031 B1a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #2

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	50.0	57.0	114	114	0
1,2-Dichloroethane-d4		56.0	112	112	
Toluene-d8		53.5	107	107	
Bromofluorobenzene		58.8	118	118	

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 50031 B1a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration; SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: LCS D 460-745199/3,4

Compound	Spike Added (mg/kg)		Spiked Sample Concentration (mg/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
1,1-Dichloroethene	0.0200	0.0200	0.0223	0.0237	117	117	119	119	6	6
Trichloroethene			0.0211	0.0219	106	106	110	110	4	4
Benzene			0.0220	0.0229	110	110	114	114	4	4
Toluene			0.0211	0.0218	106	106	109	109	3	3
Chlorobenzene			0.0209	0.0215	104	104	108	108	3	3

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 50031 B1a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260~~C~~D)

The concentration of the sample was calculated for the compound identified below using the following calculation:

$$\text{Concentration} = \frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 2 , PCE

$$\text{Conc.} = \frac{(2577)(50)\ (5\text{ mL})}{(229063)(0.3564)(4.85\text{g})(0.95)(1000)}$$

$$= 0.0017 \text{ mg/kg}$$

#	Sample ID	Compound	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Qualification
	2	PCE	0.0017	0.0017	—

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

GEI Consultants
110 Walt Whitman Road, Suite 204
Huntington Station, NY 11746
ATTN: Mr. Bill Fitchett
Wfitchett@geiconsultants.com

January 28, 2021

SUBJECT: Long Island City, 30th Street, Data Usability Summary Report.

Dear Mr. Fitchett,

Enclosed is the final validation report for the fraction listed below. This SDG was received on January 7, 2021. Attachment 1 is a summary of the samples that were reviewed for analysis.

LDC Project #50184:

SDG #	**Fraction**
460-224614-1	Volatiles

The data validation was performed under modified Category B guidelines using quality control summaries provided by the laboratory. The analyses were validated using the following documents, as applicable to each method:

- USEPA Region 2 Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-Method 8260B and 8260C, SOP HW-24, Revision 4; October 2014
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, EPA 540-R-2017-002; January 2017
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Christina Rink

Christina Rink
crink@lab-data.com
Project Manager/Senior Chemist

37 pages-ADV EQUIS EDD/ NYDUSR Attachment 1

Category B **LDC #50184 (GEI Consultants, Inc. - Huntington Station, NY / 30th Street, Long Island City, Site No. C241214)**

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260D)																															
Matrix: Water/Soil				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	460-224614-1	01/07/21	01/28/21	2	2																														

Site:	Long Island City, 30th Street
Laboratory:	Eurofins
Report No.:	460-224614-1
Reviewer:	Josephine Go and Christina Rink/Laboratory Data Consultants for GEI Consultants, Inc. – Huntington Station, NY
Date:	January 27, 2021

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
FB20201210	460-224614-1	VOC
SW-6	460-224614-2	VOC
SW-11	460-224614-3	VOC
Trip Blank	460-224614-4	VOC

Associated QC Samples(s):
Field/Trip Blanks: Trip Blank, FB20201210
Field Duplicate pair: None Associated

The above-listed soil and water samples were collected on December 10, 2020 and were analyzed for volatile organic compounds (VOCs) by SW-846 method 8260D. The data validation was performed in accordance with the USEPA Region 2 *Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-Method 8260B and 8260C,* SOP HW-24, Revision 4 (October 2014) and the USEPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,* EPA 540-R-2017-002 (January 2017), modified as necessary to accommodate the non-CLP methodologies used.

The organic data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) Tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Control Sample (LCS) Results
- Internal Standards
- Field Duplicate Results
- Moisture Content
- Quantitation Limits and Data Assessment
- Sample Quantitation and Compound Identification

Overall Evaluation of Data and Potential Usability Issues

All results are usable as reported or usable with minor qualification due to laboratory quality control outliers.

The validation findings were based on the following information.

Data Completeness

The data package was complete as defined under the requirements for the NYSDEC ASP category B laboratory deliverables.

Holding Times and Sample Preservation

All criteria were met.

GC/MS Tunes

All criteria were met.

Initial and Continuing Calibrations

Initial Calibration:

All criteria were met.

Continuing calibration:

Compounds that did not meet criteria are summarized in the following table.

Date	Standard ID	Compound	CC %D	Associated Samples		Validation Action
12/14/20	TT134593	Bromomethane	23.2	FB20201210	XX	UJ nondetects
		Chloroethane	28.3	Trip Blank	XX	UJ nondetects
12/13/20	B67102	2-Butanone	20.9	SW-6	XX	UJ nondetects
		Bromoform	24.4	SW-11	XX	UJ nondetects
		1,2-Dibromo-3-chloropropane	21.2		XX	UJ nondetects

X = Initial calibration (IC) relative standard deviation (%RSD) > 20; estimate (J/UJ) positive and nondetect results.
XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ) positive and nondetect results.
SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.
+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The bromomethane, chloroethane, 2-butanone, bromoform, and 1,2-dibromo-3-chloropropane results were estimated due to continuing calibration exceedances. The bias cannot be determined. The results can be used for project objectives as nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Blanks

Contamination was not detected in the method blanks.

No positive results were found in the trip blank sample Trip Blank and field blank sample FB20201210 for VOC analysis.

Surrogate Recoveries

All criteria were met.

MS/MSD Results

MS/MSD analyses were not associated with this sample set. Validation action was not required on this basis.

LCS Results

All criteria were met.

Internal Standards

All criteria were met.

Field Duplicate Results

A field duplicate pair was not associated with this sample set. Validation action was not required on this basis.

Moisture Content

All criteria were met.

Quantitation Limits and Data Assessment

Results were reported which were below the reporting limit (RL) and above the method detection limit (MDL) in the VOC analysis. These results were qualified as estimated (J) by the laboratory.

Dilutions were not required for VOC analysis.

Sample Quantitation and Compound Identification

Calculations were spot-checked; no discrepancies were noted.

DATA VALIDATION QUALIFIERS

U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.

J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.

JN - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.

R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

LDC #: 50184A1a
SDG #: 460-224614-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Category B

Date: 01/22/21
Page: 1 of 1
Reviewer: JVP
2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / A	ICAL ≤ 20%, r ≥ ICV ≤ 30%
IV.	Continuing calibration	SW	CV ≤ 20%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	FB = 1 TB = 4
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	A	LCS/D
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	Results < RL > MDL = J dets
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	FB20201210	460-224614-1	Water	12/10/20
2	SW-6	460-224614-2	Soil	12/10/20
3	SW-11	460-224614-3	Soil	12/10/20
4	Trip Blank	460-224614-4	Water	12/10/20
5				
6				
7				
8				
9				

Notes:

1	MB 460-746582/7					
2	-746614/7					
3	-746727/7					
4	LB 460-746371/1-A					

LDC #: 50184 A1a

VALIDATION FINDINGS CHECKLIST

Method: Volatiles (EPA SW 846 Method 8260C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20% and relative response factors (RRF) within method criteria?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 30%?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 20% and relative response factors (RRF) within method criteria?		✓		
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks were identified in this SDG?	✓			
Were target compounds detected in the field blanks?		✓		
VII. Surrogate spikes				
Were all surrogate percent recovery (%R) within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
X. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds detected in the field duplicates?			✓	
XI. Internal standards				
Were internal standard area counts within -50% to +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XII. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	AA. Tetrachloroethene	AAA. 1,3,5-Trimethylbenzene	AAAA. Ethyl tert-butyl ether	A1. 1,3-Butadiene	A2.
B. Bromomethane	BB. 1,1,2,2-Tetrachloroethane	BBB. 4-Chlorotoluene	BBBB. tert-Amyl methyl ether	B1. Hexane	B2.
C. Vinyl choride	CC. Toluene	CCC. tert-Butylbenzene	CCCC. 1-Chlorohexane	C1. Heptane	C2.
D. Chloroethane	DD. Chlorobenzene	DDD. 1,2,4-Trimethylbenzene	DDDD. Isopropyl alcohol	D1. Propylene	D2.
E. Methylene chloride	EE. Ethylbenzene	EEE. sec-Butylbenzene	EEEE. Acetonitrile	E1. Freon 11	E2.
F. Acetone	FF. Styrene	FFF. 1,3-Dichlorobenzene	FFFF. Acrolein	F1. Freon 12	F2.
G. Carbon disulfide	GG. Xylenes, total	GGG. p-Isopropyltoluene	GGGG. Acrylonitrile	G1. Freon 113	G2.
H. 1,1-Dichloroethene	HH. Vinyl acetate	HHH. 1,4-Dichlorobenzene	HHHH. 1,4-Dioxane	H1. Freon 114	H2.
I. 1,1-Dichloroethane	II. 2-Chloroethylvinyl ether	III. n-Butylbenzene	IIII. Isobutyl alcohol	I1. 2-Nitropropane	I2.
J. 1,2-Dichloroethene, total	JJ. Dichlorodifluoromethane	JJJ. 1,2-Dichlorobenzene	JJJJ. Methacrylonitrile	J1. Dimethyl disulfide	J2.
K. Chloroform	KK. Trichlorofluoromethane	KKK. 1,2,4-Trichlorobenzene	KKKK. Propionitrile	K1. 2,3-Dimethyl pentane	K2.
L. 1,2-Dichloroethane	LL. Methyl-tert-butyl ether	LLL. Hexachlorobutadiene	LLLL. Ethyl ether	L1. 2,4-Dimethyl pentane	L2.
M. 2-Butanone	MM. 1,2-Dibromo-3-chloropropane	MMM. Naphthalene	MMMM. Benzyl chloride	M1. 3,3-Dimethyl pentane	M2.
N. 1,1,1-Trichloroethane	NN. Methyl ethyl ketone	NNN. 1,2,3-Trichlorobenzene	NNNN. Iodomethane	N1. 2-Methylpentane	N2.
O. Carbon tetrachloride	OO. 2,2-Dichloropropane	OOO. 1,3,5-Trichlorobenzene	OOOO.1,1-Difluoroethane	O1. 3-Methylpentane	O2.
P. Bromodichloromethane	PP. Bromochloromethane	PPP. trans-1,2-Dichloroethene	PPPP. Tetrahydrofuran	P1. 3-Ethylpentane	P2.
Q. 1,2-Dichloropropane	QQ. 1,1-Dichloropropene	QQQ. cis-1,2-Dichloroethene	QQQQ. Methyl acetate	Q1. 2,2-Dimethylpentane	Q2.
R. cis-1,3-Dichloropropene	RR. Dibromomethane	RRR. m,p-Xylenes	RRRR. Ethyl acetate	R1. 2,2,3- Trimethylbutane	R2.
S. Trichloroethene	SS. 1,3-Dichloropropane	SSS. o-Xylene	SSSS. Cyclohexane	S1. 2,2,4-Trimethylpentane	S2.
T. Dibromochloromethane	TT. 1,2-Dibromoethane	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	TTTT. Methylcyclohexane	T1. 2-Methylhexane	T2.
U. 1,1,2-Trichloroethane	UU. 1,1,1,2-Tetrachloroethane	UUU. 1,2-Dichlorotetrafluoroethane	UUUU. Allyl chloride	U1. Nonanal	U2.
V. Benzene	VV. Isopropylbenzene	VVV. 4-Ethyltoluene	VVVV. Methyl methacrylate	V1. 2-Methylnaphthalene	V2.
W. trans-1,3-Dichloropropene	WW. Bromobenzene	WWW. Ethanol	WWWW. Ethyl methacrylate	W1. Methanol	W2.
X. Bromoform	XX. 1,2,3-Trichloropropane	XXX. Di-isopropyl ether	XXXX. cis-1,4-Dichloro-2-butene	X1. 1,2,3-Trimethylbenzene	X2.
Y. 4-Methyl-2-pentanone	YY. n-Propylbenzene	YYY. tert-Butanol	YYYY. trans-1,4-Dichloro-2-butene	Y1. 2-Propanol	Y2.
Z. 2-Hexanone	ZZ. 2-Chlorotoluene	ZZZ. tert-Butyl alcohol	ZZZZ. Pentachloroethane	Z1.	Z2.

LDC #: 50184 A1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y (N) N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Y (N) N/A Were percent differences (%D) ≤20 % and relative response factors (RRF) within the method criteria?

#	Date	Standard ID	Compound	Finding %D (Limit: <20.0%)	Finding RRF (Limit)	Associated Samples	Qualifications
	12/14/20	TT134593	B	23.2		1, 4, MB3 (ND)	J/UJ/A
			D	28.3		↓	↓
	12/13/20	B67102	M	20.9		2, 3, MB1 (ND)	J/UJ/A
			X	24.4		↓ ↓	↓
			MM	21.2		↓ ↓	↓

Note: * = Ave RRF failed method criteria but within validation criteria

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound
S= Standard deviation of the RRFs

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 50 std)	Recalculated RRF (RRF 50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL CVOAMS17	11/13/2020	Acetone (BUT)	0.7291	0.7291	0.7930	0.7930	11.6	11.6
			cis-1,2-DCE (FBZ)	0.3605	0.3605	0.3570	0.3570	9.1	9.1
			1,4-Dioxane (DXE)	1.3035	1.3035	1.3689	1.3689	13.1	13.1
			Tetrachloroethene (CBZ)	0.4028	0.4028	0.3950	0.3950	9.9	9.9
			1,1,2,2-TCA (DCB)	1.1352	1.1352	1.0867	1.0867	8.5	8.5
2	ICAL CVOAMS2	12/8/2020	2-Butanone (BUT)	0.4378	0.4378	0.4666	0.4666	6.0	6.0
			cis-1,2-DCE (FBZ)	0.4529	0.4529	0.4441	0.4441	4.7	4.7
			1,4-Dioxane (DXE)	see r2 calc					
			Tetrachloroethene (CBZ)	0.5916	0.5916	0.5670	0.5670	7.5	7.5
			1,1,2,2-TCA (DCB)	1.1007	1.1007	1.1179	1.1179	7.3	7.3

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Method: (EPA SW 846 Method 8260D)

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Conc ratio	(X^2) Conc ratio
12/8/2020	VOAMS2	1,4-Dioxane	20	0.0129	0.02	0.00040
			100	0.2560	0.10	0.0100
		IS = 1,4-Dioxane-d8	400	0.6971	0.40	0.1600
			1000	1.8977	1.00	1.0000
			4000	6.3843	4.00	16.0000
			10000	16.9458	10.00	100.0000

Regression Output	**Calculated**		***Reported WQR***	
Constant	*c*	*0.00000*	*c*	*0.00000*
R Squared		*0.9996340*		*0.99900*
	m1	*m2*	*m1*	*m2*
X Coefficient(s)	*1.58451E+00*	*1.0836E-02*	*1.58451E+00*	*1.0836E-02*
Correlation Coefficient		*0.999817*		
Coefficient of Determination (r^2)		*0.999634*		

LDC # 50106A1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CCV)	Recalculated RRF (CCV)	Reported % D	Recalculated %D
1	TT134593	12/14/2020	Acetone (BUT)	0.7930	0.7957	0.7957	0.3	0.3
			cis-1,2-DCE (FBZ)	0.3570	0.3612	0.3612	1.2	1.2
			1,4-Dioxane (DXE)	1.3689	1.3735	1.3735	0.3	0.3
			Tetrachloroethene (CBZ)	0.3950	0.4138	0.4138	4.8	4.8
			1,1,2,2-TCA (DCB)	1.0867	1.0354	1.0354	4.7	4.7
2	B67102	12/13/2020	2-Butanone (BUT)	0.4666	0.3692	0.3692	20.9	20.9
			cis-1,2-DCE (FBZ)	0.4441	0.4307	0.4307	3.0	3.0
			1,4-Dioxane (DXE)	400.0000	417.0000	417.0781	4.3	4.3
			Tetrachloroethene (CBZ)	0.5670	0.5406	0.5406	4.7	4.7
			1,1,2,2-TCA (DCB)	1.1179	0.9869	0.9869	11.7	11.7

LDC #: 50184 A1a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: # 2

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	50.0	50.4	101	101	0
1,2-Dichloroethane-d4	↓	49.3	99	99	↓
Toluene-d8		43.9	88	88	
Bromofluorobenzene	✓	44.5	89	89	✓

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 50184A1a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration; SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: LCSD 460-746582/3,4

Compound	Spike Added (mg/kg)		Spiked Sample Concentration (mg/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
1,1-Dichloroethene	0.020	0.020	0.0232	0.0212	116	116	106	106	9	9
Trichloroethene			0.0205	0.0191	103	103	96	96	7	7
Benzene			0.0226	0.0202	113	113	101	101	11	11
Toluene			0.0207	0.0190	103	103	95	95	8	8.5
Chlorobenzene			0.0200	0.0184	100	100	92	92	8	8

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 50184 A1G

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260~~B~~)

The concentration of the sample was calculated for the compound identified below using the following calculation:

$$\text{Concentration} = \frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 2, PCE

$$\text{Conc.} = \frac{(1887)(50)(5\ mL)}{(426157)(0.5670)(4.839)(0.928)(1000)}$$

$$= 0.0004356$$

$$\approx 0.00044\ mg/kg$$

#	Sample ID	Compound	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Qualification
	2	PCE	0.00044		—

Long Island City, 30th Street - LDC# 50184

SDG: 4602246141

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
FB20201	460-224614-1	1,3-DICHLOROBENZENE	12/14/2020		Y	N	U		U	1.0	0.34	ug/l
FB20201	460-224614-1	CHLOROETHANE	12/14/2020		Y	N	U	UJ	UJ	1.0	0.32	ug/l
FB20201	460-224614-1	CHLOROBENZENE	12/14/2020		Y	N	U		U	1.0	0.38	ug/l
FB20201	460-224614-1	CARBON TETRACHLORIDE	12/14/2020		Y	N	U		U	1.0	0.21	ug/l
FB20201	460-224614-1	CARBON DISULFIDE	12/14/2020		Y	N	U		U	1.0	0.82	ug/l
FB20201	460-224614-1	BROMOMETHANE	12/14/2020		Y	N	U	UJ	UJ	1.0	0.55	ug/l
FB20201	460-224614-1	BROMOFORM	12/14/2020		Y	N	U		U	1.0	0.54	ug/l
FB20201	460-224614-1	BROMODICHLOROMETHANE	12/14/2020		Y	N	U		U	1.0	0.34	ug/l
FB20201	460-224614-1	BROMOCHLOROMETHANE	12/14/2020		Y	N	U		U	1.0	0.41	ug/l
FB20201	460-224614-1	BENZENE	12/14/2020		Y	N	U		U	1.0	0.20	ug/l
FB20201	460-224614-1	ACETONE	12/14/2020		Y	N	U		U	5.0	4.4	ug/l
FB20201	460-224614-1	2-HEXANONE	12/14/2020		Y	N	U		U	5.0	1.1	ug/l
FB20201	460-224614-1	CHLOROFORM	12/14/2020		Y	N	U		U	1.0	0.33	ug/l
FB20201	460-224614-1	1,4-DICHLOROBENZENE	12/14/2020		Y	N	U		U	1.0	0.33	ug/l
FB20201	460-224614-1	1,1,2,2-TETRACHLOROETHANE	12/14/2020		Y	N	U		U	1.0	0.37	ug/l
FB20201	460-224614-1	1,2-DICHLOROPROPANE	12/14/2020		Y	N	U		U	1.0	0.35	ug/l
FB20201	460-224614-1	1,2-DICHLOROETHANE	12/14/2020		Y	N	U		U	1.0	0.43	ug/l
FB20201	460-224614-1	1,2-DICHLOROBENZENE	12/14/2020		Y	N	U		U	1.0	0.21	ug/l
FB20201	460-224614-1	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	12/14/2020		Y	N	U		U	1.0	0.50	ug/l
FB20201	460-224614-1	1,2-DIBROMO-3-CHLOROPROPANE	12/14/2020		Y	N	U		U	1.0	0.38	ug/l
FB20201	460-224614-1	1,2,4-TRICHLOROBENZENE	12/14/2020		Y	N	U		U	1.0	0.37	ug/l
FB20201	460-224614-1	1,2,3-TRICHLOROBENZENE	12/14/2020		Y	N	U		U	1.0	0.36	ug/l
FB20201	460-224614-1	1,1-DICHLOROETHENE	12/14/2020		Y	N	U		U	1.0	0.26	ug/l

SDG: 4602246141

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
FB20201	460-224614-1	1,1-DICHLOROETHANE	12/14/2020		Y	N	U		U	1.0	0.26	ug/l
FB20201	460-224614-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	12/14/2020		Y	N	U		U	1.0	0.31	ug/l
FB20201	460-224614-1	1,1,1-TRICHLOROETHANE	12/14/2020		Y	N	U		U	1.0	0.24	ug/l
FB20201	460-224614-1	1,4-DIOXANE (P-DIOXANE)	12/14/2020		Y	N	U		U	50	28	ug/l
FB20201	460-224614-1	TETRACHLOROETHYLENE(PCE)	12/14/2020		Y	N	U		U	1.0	0.25	ug/l
FB20201	460-224614-1	CHLOROMETHANE	12/14/2020		Y	N	U		U	1.0	0.40	ug/l
FB20201	460-224614-1	1,1,2-TRICHLOROETHANE	12/14/2020		Y	N	U		U	1.0	0.20	ug/l
FB20201	460-224614-1	VINYL CHLORIDE	12/14/2020		Y	N	U		U	1.0	0.17	ug/l
FB20201	460-224614-1	TRICHLOROFLUOROMETHANE	12/14/2020		Y	N	U		U	1.0	0.32	ug/l
FB20201	460-224614-1	TRICHLOROETHYLENE (TCE)	12/14/2020		Y	N	U		U	1.0	0.31	ug/l
FB20201	460-224614-1	TRANS-1,3-DICHLOROPROPENE	12/14/2020		Y	N	U		U	1.0	0.22	ug/l
FB20201	460-224614-1	TOLUENE	12/14/2020		Y	N	U		U	1.0	0.38	ug/l
FB20201	460-224614-1	TERT-BUTYL METHYL ETHER	12/14/2020		Y	N	U		U	1.0	0.22	ug/l
FB20201	460-224614-1	STYRENE	12/14/2020		Y	N	U		U	1.0	0.42	ug/l
FB20201	460-224614-1	O-XYLENE (1,2-DIMETHYLBENZENE)	12/14/2020		Y	N	U		U	1.0	0.36	ug/l
FB20201	460-224614-1	METHYLENE CHLORIDE	12/14/2020		Y	N	U		U	1.0	0.32	ug/l
FB20201	460-224614-1	ETHYLBENZENE	12/14/2020		Y	N	U		U	1.0	0.30	ug/l
FB20201	460-224614-1	TRANS-1,2-DICHLOROETHENE	12/14/2020		Y	N	U		U	1.0	0.24	ug/l
FB20201	460-224614-1	CIS-1,3-DICHLOROPROPENE	12/14/2020		Y	N	U		U	1.0	0.22	ug/l
FB20201	460-224614-1	METHYLCYCLOHEXANE	12/14/2020		Y	N	U		U	1.0	0.71	ug/l
FB20201	460-224614-1	DIBROMOCHLOROMETHANE	12/14/2020		Y	N	U		U	1.0	0.28	ug/l
FB20201	460-224614-1	DICHLORODIFLUOROMETHANE	12/14/2020		Y	N	U		U	1.0	0.31	ug/l
FB20201	460-224614-1	CYCLOHEXANE	12/14/2020		Y	N	U		U	1.0	0.32	ug/l
FB20201	460-224614-1	Isopropylbenzene (Cumene)	12/14/2020		Y	N	U		U	1.0	0.34	ug/l
FB20201	460-224614-1	Cis-1,2-Dichloroethylene	12/14/2020		Y	N	U		U	1.0	0.22	ug/l

SDG: 4602246141

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
FB20201	460-224614-1	M,P-XYLENES	12/14/2020		Y	N	U		U	1.0	0.30	ug/l
FB20201	460-224614-1	METHYL ACETATE	12/14/2020		Y	N	U		U	5.0	0.79	ug/l
FB20201	460-224614-1	METHYL ETHYL KETONE (2-BUTANONE)	12/14/2020		Y	N	U		U	5.0	1.9	ug/l
FB20201	460-224614-1	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	12/14/2020		Y	N	U		U	5.0	1.3	ug/l
SW-11-2	460-224614-3	CHLOROFORM	12/13/2020		Y	N	U		U	0.0012	0.0012	mg/kg
SW-11-2	460-224614-3	Cis-1,2-Dichloroethylene	12/13/2020		Y	N	U		U	0.0012	0.00042	mg/kg
SW-11-2	460-224614-3	CHLOROMETHANE	12/13/2020		Y	N	U		U	0.0012	0.00052	mg/kg
SW-11-2	460-224614-3	CIS-1,3-DICHLOROPROPENE	12/13/2020		Y	N	U		U	0.0012	0.00032	mg/kg
SW-11-2	460-224614-3	CHLOROETHANE	12/13/2020		Y	N	U		U	0.0012	0.00062	mg/kg
SW-11-2	460-224614-3	CHLOROBENZENE	12/13/2020		Y	N	U		U	0.0012	0.00021	mg/kg
SW-11-2	460-224614-3	CARBON TETRACHLORIDE	12/13/2020		Y	N	U		U	0.0012	0.00046	mg/kg
SW-11-2	460-224614-3	CARBON DISULFIDE	12/13/2020		Y	N	U		U	0.0012	0.00032	mg/kg
SW-11-2	460-224614-3	BROMOFORM	12/13/2020		Y	N	U	UJ	UJ	0.0012	0.00050	mg/kg
SW-11-2	460-224614-3	CYCLOHEXANE	12/13/2020		Y	N	U		U	0.0012	0.00026	mg/kg
SW-11-2	460-224614-3	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	12/13/2020		Y	N	U		U	0.0012	0.00036	mg/kg
SW-11-2	460-224614-3	BROMOMETHANE	12/13/2020		Y	N	U		U	0.0012	0.0012	mg/kg
SW-11-2	460-224614-3	DIBROMOCHLOROMETHANE	12/13/2020		Y	N	U		U	0.0012	0.00023	mg/kg
SW-11-2	460-224614-3	DICHLORODIFLUOROMETHANE	12/13/2020		Y	N	U		U	0.0012	0.00040	mg/kg
SW-11-2	460-224614-3	ETHYLBENZENE	12/13/2020		Y	N	U		U	0.0012	0.00024	mg/kg
SW-11-2	460-224614-3	Isopropylbenzene (Cumene)	12/13/2020		Y	N	U		U	0.0012	0.00034	mg/kg
SW-11-2	460-224614-3	M,P-XYLENES	12/13/2020		Y	N	U		U	0.0012	0.00021	mg/kg
SW-11-2	460-224614-3	METHYL ACETATE	12/13/2020		Y	N	U		U	0.0059	0.0051	mg/kg
SW-11-2	460-224614-3	METHYL ETHYL KETONE (2-BUTANONE)	12/13/2020		Y	N	U	UJ	UJ	0.0059	0.00044	mg/kg
SW-11-2	460-224614-3	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	12/13/2020		Y	N	U		U	0.0059	0.0018	mg/kg

SDG: 4602246141

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
SW-11-2	460-224614-3	METHYLCYCLOHEXANE	12/13/2020		Y	N	U		U	0.0012	0.00059	mg/kg
SW-11-2	460-224614-3	METHYLENE CHLORIDE	12/13/2020		Y	N	U		U	0.0012	0.0014	mg/kg
SW-11-2	460-224614-3	BROMODICHLOROMETHANE	12/13/2020		Y	N	U		U	0.0012	0.00030	mg/kg
SW-11-2	460-224614-3	STYRENE	12/13/2020		Y	N	U		U	0.0012	0.00033	mg/kg
SW-11-2	460-224614-3	1,2,3-TRICHLOROBENZENE	12/13/2020		Y	N	U		U	0.0012	0.00021	mg/kg
SW-11-2	460-224614-3	O-XYLENE (1,2-DIMETHYLBENZENE)	12/13/2020		Y	N	U		U	0.0012	0.00023	mg/kg
SW-11-2	460-224614-3	1,1-DICHLOROETHENE	12/13/2020		Y	N	U		U	0.0012	0.00027	mg/kg
SW-11-2	460-224614-3	1,1,1-TRICHLOROETHANE	12/13/2020		Y	N	U		U	0.0012	0.00028	mg/kg
SW-11-2	460-224614-3	TERT-BUTYL METHYL ETHER	12/13/2020		Y	N	U		U	0.0012	0.00061	mg/kg
SW-11-2	460-224614-3	TRICHLOROETHYLENE (TCE)	12/13/2020		Y	N	U		U	0.0012	0.00038	mg/kg
SW-11-2	460-224614-3	1,1,2-TRICHLOROETHANE	12/13/2020		Y	N	U		U	0.0012	0.00021	mg/kg
SW-11-2	460-224614-3	TRANS-1,3-DICHLOROPROPENE	12/13/2020		Y	N	U		U	0.0012	0.00032	mg/kg
SW-11-2	460-224614-3	TRICHLOROFLUOROMETHANE	12/13/2020		Y	N	U		U	0.0012	0.00048	mg/kg
SW-11-2	460-224614-3	TRANS-1,2-DICHLOROETHENE	12/13/2020		Y	N	U		U	0.0012	0.00029	mg/kg
SW-11-2	460-224614-3	TOLUENE	12/13/2020		Y	N	U		U	0.0012	0.00028	mg/kg
SW-11-2	460-224614-3	TETRACHLOROETHYLENE(PCE)	12/13/2020	0.00077	Y	Y	J		J	0.0012	0.00036	mg/kg
SW-11-2	460-224614-3	1,1,2,2-TETRACHLOROETHANE	12/13/2020		Y	N	U		U	0.0012	0.00025	mg/kg
SW-11-2	460-224614-3	1,2-DIBROMO-3-CHLOROPROPANE	12/13/2020		Y	N	U	UJ	UJ	0.0012	0.00055	mg/kg
SW-11-2	460-224614-3	1,1-DICHLOROETHANE	12/13/2020		Y	N	U		U	0.0012	0.00024	mg/kg
SW-11-2	460-224614-3	BROMOCHLOROMETHANE	12/13/2020		Y	N	U		U	0.0012	0.00033	mg/kg
SW-11-2	460-224614-3	1,2,4-TRICHLOROBENZENE	12/13/2020		Y	N	U		U	0.0012	0.00042	mg/kg
SW-11-2	460-224614-3	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	12/13/2020		Y	N	U		U	0.0012	0.00021	mg/kg
SW-11-2	460-224614-3	1,2-DICHLOROBENZENE	12/13/2020		Y	N	U		U	0.0012	0.00043	mg/kg
SW-11-2	460-224614-3	1,2-DICHLOROETHANE	12/13/2020		Y	N	U		U	0.0012	0.00035	mg/kg
SW-11-2	460-224614-3	1,2-DICHLOROPROPANE	12/13/2020		Y	N	U		U	0.0012	0.00050	mg/kg

SDG: 4602246141

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
SW-11-2	460-224614-3	1,3-DICHLOROBENZENE	12/13/2020		Y	N	U		U	0.0012	0.00043	mg/kg
SW-11-2	460-224614-3	1,4-DICHLOROBENZENE	12/13/2020		Y	N	U		U	0.0012	0.00027	mg/kg
SW-11-2	460-224614-3	1,4-DIOXANE (P-DIOXANE)	12/13/2020		Y	N	U		U	0.024	0.011	mg/kg
SW-11-2	460-224614-3	2-HEXANONE	12/13/2020		Y	N	U		U	0.0059	0.0020	mg/kg
SW-11-2	460-224614-3	ACETONE	12/13/2020		Y	N	U		U	0.0071	0.0068	mg/kg
SW-11-2	460-224614-3	BENZENE	12/13/2020		Y	N	U		U	0.0012	0.00031	mg/kg
SW-11-2	460-224614-3	VINYL CHLORIDE	12/13/2020		Y	N	U		U	0.0012	0.00065	mg/kg
SW-6-20	460-224614-2	1,2,3-TRICHLOROBENZENE	12/13/2020		Y	N	U		U	0.0011	0.00020	mg/kg
SW-6-20	460-224614-2	1,1,1-TRICHLOROETHANE	12/13/2020		Y	N	U		U	0.0011	0.00026	mg/kg
SW-6-20	460-224614-2	1,1,2,2-TETRACHLOROETHANE	12/13/2020		Y	N	U		U	0.0011	0.00024	mg/kg
SW-6-20	460-224614-2	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	12/13/2020		Y	N	U		U	0.0011	0.00034	mg/kg
SW-6-20	460-224614-2	1,1,2-TRICHLOROETHANE	12/13/2020		Y	N	U		U	0.0011	0.00020	mg/kg
SW-6-20	460-224614-2	1,1-DICHLOROETHENE	12/13/2020		Y	N	U		U	0.0011	0.00025	mg/kg
SW-6-20	460-224614-2	1,2,4-TRICHLOROBENZENE	12/13/2020		Y	N	U		U	0.0011	0.00040	mg/kg
SW-6-20	460-224614-2	1,1-DICHLOROETHANE	12/13/2020		Y	N	U		U	0.0011	0.00023	mg/kg
SW-6-20	460-224614-2	1,2-DIBROMO-3-CHLOROPROPANE	12/13/2020		Y	N	U	UJ	UJ	0.0011	0.00051	mg/kg
SW-6-20	460-224614-2	ACETONE	12/13/2020		Y	N	U		U	0.0067	0.0064	mg/kg
SW-6-20	460-224614-2	Isopropylbenzene (Cumene)	12/13/2020		Y	N	U		U	0.0011	0.00032	mg/kg
SW-6-20	460-224614-2	2-HEXANONE	12/13/2020		Y	N	U		U	0.0056	0.0019	mg/kg
SW-6-20	460-224614-2	1,4-DIOXANE (P-DIOXANE)	12/13/2020		Y	N	U		U	0.022	0.010	mg/kg
SW-6-20	460-224614-2	1,4-DICHLOROBENZENE	12/13/2020		Y	N	U		U	0.0011	0.00025	mg/kg
SW-6-20	460-224614-2	1,3-DICHLOROBENZENE	12/13/2020		Y	N	U		U	0.0011	0.00041	mg/kg
SW-6-20	460-224614-2	1,2-DICHLOROPROPANE	12/13/2020		Y	N	U		U	0.0011	0.00047	mg/kg
SW-6-20	460-224614-2	1,2-DICHLOROETHANE	12/13/2020		Y	N	U		U	0.0011	0.00033	mg/kg
SW-6-20	460-224614-2	BENZENE	12/13/2020		Y	N	U		U	0.0011	0.00029	mg/kg

SDG: 4602246141

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
SW-6-20	460-224614-2	TETRACHLOROETHYLENE(PCE)	12/13/2020	0.00044	Y	Y	J		J	0.0011	0.00034	mg/kg
SW-6-20	460-224614-2	METHYL ACETATE	12/13/2020		Y	N	U		U	0.0056	0.0048	mg/kg
SW-6-20	460-224614-2	METHYL ETHYL KETONE (2-BUTANONE)	12/13/2020		Y	N	U	UJ	UJ	0.0056	0.00041	mg/kg
SW-6-20	460-224614-2	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	12/13/2020		Y	N	U		U	0.0056	0.0017	mg/kg
SW-6-20	460-224614-2	METHYLCYCLOHEXANE	12/13/2020		Y	N	U		U	0.0011	0.00056	mg/kg
SW-6-20	460-224614-2	METHYLENE CHLORIDE	12/13/2020		Y	N	U		U	0.0011	0.0013	mg/kg
SW-6-20	460-224614-2	O-XYLENE (1,2-DIMETHYLBENZENE)	12/13/2020		Y	N	U		U	0.0011	0.00022	mg/kg
SW-6-20	460-224614-2	M,P-XYLENES	12/13/2020		Y	N	U		U	0.0011	0.00019	mg/kg
SW-6-20	460-224614-2	TERT-BUTYL METHYL ETHER	12/13/2020		Y	N	U		U	0.0011	0.00057	mg/kg
SW-6-20	460-224614-2	TRANS-1,3-DICHLOROPROPENE	12/13/2020		Y	N	U		U	0.0011	0.00030	mg/kg
SW-6-20	460-224614-2	TOLUENE	12/13/2020		Y	N	U		U	0.0011	0.00026	mg/kg
SW-6-20	460-224614-2	TRANS-1,2-DICHLOROETHENE	12/13/2020		Y	N	U		U	0.0011	0.00027	mg/kg
SW-6-20	460-224614-2	TRICHLOROETHYLENE (TCE)	12/13/2020		Y	N	U		U	0.0011	0.00036	mg/kg
SW-6-20	460-224614-2	VINYL CHLORIDE	12/13/2020		Y	N	U		U	0.0011	0.00061	mg/kg
SW-6-20	460-224614-2	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	12/13/2020		Y	N	U		U	0.0011	0.00020	mg/kg
SW-6-20	460-224614-2	DICHLORODIFLUOROMETHANE	12/13/2020		Y	N	U		U	0.0011	0.00038	mg/kg
SW-6-20	460-224614-2	STYRENE	12/13/2020		Y	N	U		U	0.0011	0.00031	mg/kg
SW-6-20	460-224614-2	CARBON TETRACHLORIDE	12/13/2020		Y	N	U		U	0.0011	0.00043	mg/kg
SW-6-20	460-224614-2	TRICHLOROFLUOROMETHANE	12/13/2020		Y	N	U		U	0.0011	0.00045	mg/kg
SW-6-20	460-224614-2	BROMOCHLOROMETHANE	12/13/2020		Y	N	U		U	0.0011	0.00031	mg/kg
SW-6-20	460-224614-2	1,2-DICHLOROBENZENE	12/13/2020		Y	N	U		U	0.0011	0.00040	mg/kg
SW-6-20	460-224614-2	BROMOFORM	12/13/2020		Y	N	U	UJ	UJ	0.0011	0.00047	mg/kg
SW-6-20	460-224614-2	ETHYLBENZENE	12/13/2020		Y	N	U		U	0.0011	0.00022	mg/kg
SW-6-20	460-224614-2	CARBON DISULFIDE	12/13/2020		Y	N	U		U	0.0011	0.00030	mg/kg

SDG: 4602246141

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
SW-6-20	460-224614-2	BROMODICHLOROMETHANE	12/13/2020		Y	N	U		U	0.0011	0.00029	mg/kg
SW-6-20	460-224614-2	CHLOROBENZENE	12/13/2020		Y	N	U		U	0.0011	0.00020	mg/kg
SW-6-20	460-224614-2	CHLOROETHANE	12/13/2020		Y	N	U		U	0.0011	0.00058	mg/kg
SW-6-20	460-224614-2	CHLOROFORM	12/13/2020		Y	N	U		U	0.0011	0.0011	mg/kg
SW-6-20	460-224614-2	CHLOROMETHANE	12/13/2020		Y	N	U		U	0.0011	0.00049	mg/kg
SW-6-20	460-224614-2	Cis-1,2-Dichloroethylene	12/13/2020		Y	N	U		U	0.0011	0.00040	mg/kg
SW-6-20	460-224614-2	CIS-1,3-DICHLOROPROPENE	12/13/2020		Y	N	U		U	0.0011	0.00030	mg/kg
SW-6-20	460-224614-2	CYCLOHEXANE	12/13/2020		Y	N	U		U	0.0011	0.00025	mg/kg
SW-6-20	460-224614-2	DIBROMOCHLOROMETHANE	12/13/2020		Y	N	U		U	0.0011	0.00022	mg/kg
SW-6-20	460-224614-2	BROMOMETHANE	12/13/2020		Y	N	U		U	0.0011	0.0011	mg/kg
Trip Blank	460-224614-4	ETHYLBENZENE	12/14/2020		Y	N	U		U	1.0	0.30	ug/l
Trip Blank	460-224614-4	Isopropylbenzene (Cumene)	12/14/2020		Y	N	U		U	1.0	0.34	ug/l
Trip Blank	460-224614-4	M,P-XYLENES	12/14/2020		Y	N	U		U	1.0	0.30	ug/l
Trip Blank	460-224614-4	METHYL ACETATE	12/14/2020		Y	N	U		U	5.0	0.79	ug/l
Trip Blank	460-224614-4	METHYL ETHYL KETONE (2-BUTANONE)	12/14/2020		Y	N	U		U	5.0	1.9	ug/l
Trip Blank	460-224614-4	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	12/14/2020		Y	N	U		U	5.0	1.3	ug/l
Trip Blank	460-224614-4	METHYLCYCLOHEXANE	12/14/2020		Y	N	U		U	1.0	0.71	ug/l
Trip Blank	460-224614-4	METHYLENE CHLORIDE	12/14/2020		Y	N	U		U	1.0	0.32	ug/l
Trip Blank	460-224614-4	DICHLORODIFLUOROMETHANE	12/14/2020		Y	N	U		U	1.0	0.31	ug/l
Trip Blank	460-224614-4	STYRENE	12/14/2020		Y	N	U		U	1.0	0.42	ug/l
Trip Blank	460-224614-4	CYCLOHEXANE	12/14/2020		Y	N	U		U	1.0	0.32	ug/l
Trip Blank	460-224614-4	TERT-BUTYL METHYL ETHER	12/14/2020		Y	N	U		U	1.0	0.22	ug/l
Trip Blank	460-224614-4	O-XYLENE (1,2-DIMETHYLBENZENE)	12/14/2020		Y	N	U		U	1.0	0.36	ug/l
Trip Blank	460-224614-4	DIBROMOCHLOROMETHANE	12/14/2020		Y	N	U		U	1.0	0.28	ug/l

SDG: 4602246141

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
Trip Blank	460-224614-4	CHLOROBENZENE	12/14/2020		Y	N	U		U	1.0	0.38	ug/l
Trip Blank	460-224614-4	CHLOROETHANE	12/14/2020		Y	N	U	UJ	UJ	1.0	0.32	ug/l
Trip Blank	460-224614-4	CHLOROFORM	12/14/2020		Y	N	U		U	1.0	0.33	ug/l
Trip Blank	460-224614-4	CHLOROMETHANE	12/14/2020		Y	N	U		U	1.0	0.40	ug/l
Trip Blank	460-224614-4	CIS-1,3-DICHLOROPROPENE	12/14/2020		Y	N	U		U	1.0	0.22	ug/l
Trip Blank	460-224614-4	TRANS-1,3-DICHLOROPROPENE	12/14/2020		Y	N	U		U	1.0	0.22	ug/l
Trip Blank	460-224614-4	TRICHLOROETHYLENE (TCE)	12/14/2020		Y	N	U		U	1.0	0.31	ug/l
Trip Blank	460-224614-4	TRICHLOROFLUOROMETHANE	12/14/2020		Y	N	U		U	1.0	0.32	ug/l
Trip Blank	460-224614-4	VINYL CHLORIDE	12/14/2020		Y	N	U		U	1.0	0.17	ug/l
Trip Blank	460-224614-4	TETRACHLOROETHYLENE(PCE)	12/14/2020		Y	N	U		U	1.0	0.25	ug/l
Trip Blank	460-224614-4	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	12/14/2020		Y	N	U		U	1.0	0.50	ug/l
Trip Blank	460-224614-4	Cis-1,2-Dichloroethylene	12/14/2020		Y	N	U		U	1.0	0.22	ug/l
Trip Blank	460-224614-4	1,4-DICHLOROBENZENE	12/14/2020		Y	N	U		U	1.0	0.33	ug/l
Trip Blank	460-224614-4	1,1,1-TRICHLOROETHANE	12/14/2020		Y	N	U		U	1.0	0.24	ug/l
Trip Blank	460-224614-4	1,1,2,2-TETRACHLOROETHANE	12/14/2020		Y	N	U		U	1.0	0.37	ug/l
Trip Blank	460-224614-4	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	12/14/2020		Y	N	U		U	1.0	0.31	ug/l
Trip Blank	460-224614-4	1,1,2-TRICHLOROETHANE	12/14/2020		Y	N	U		U	1.0	0.20	ug/l
Trip Blank	460-224614-4	1,1-DICHLOROETHANE	12/14/2020		Y	N	U		U	1.0	0.26	ug/l
Trip Blank	460-224614-4	1,1-DICHLOROETHENE	12/14/2020		Y	N	U		U	1.0	0.26	ug/l
Trip Blank	460-224614-4	1,2,3-TRICHLOROBENZENE	12/14/2020		Y	N	U		U	1.0	0.36	ug/l
Trip Blank	460-224614-4	1,2,4-TRICHLOROBENZENE	12/14/2020		Y	N	U		U	1.0	0.37	ug/l
Trip Blank	460-224614-4	1,2-DIBROMO-3-CHLOROPROPANE	12/14/2020		Y	N	U		U	1.0	0.38	ug/l
Trip Blank	460-224614-4	1,2-DICHLOROBENZENE	12/14/2020		Y	N	U		U	1.0	0.21	ug/l
Trip Blank	460-224614-4	1,2-DICHLOROETHANE	12/14/2020		Y	N	U		U	1.0	0.43	ug/l
Trip Blank	460-224614-4	1,3-DICHLOROBENZENE	12/14/2020		Y	N	U		U	1.0	0.34	ug/l

SDG: 4602246141

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
Trip Blank	460-224614-4	TOLUENE	12/14/2020		Y	N	U		U	1.0	0.38	ug/l
Trip Blank	460-224614-4	1,4-DIOXANE (P-DIOXANE)	12/14/2020		Y	N	U		U	50	28	ug/l
Trip Blank	460-224614-4	2-HEXANONE	12/14/2020		Y	N	U		U	5.0	1.1	ug/l
Trip Blank	460-224614-4	ACETONE	12/14/2020		Y	N	U		U	5.0	4.4	ug/l
Trip Blank	460-224614-4	BENZENE	12/14/2020		Y	N	U		U	1.0	0.20	ug/l
Trip Blank	460-224614-4	BROMOCHLOROMETHANE	12/14/2020		Y	N	U		U	1.0	0.41	ug/l
Trip Blank	460-224614-4	BROMODICHLOROMETHANE	12/14/2020		Y	N	U		U	1.0	0.34	ug/l
Trip Blank	460-224614-4	BROMOFORM	12/14/2020		Y	N	U		U	1.0	0.54	ug/l
Trip Blank	460-224614-4	BROMOMETHANE	12/14/2020		Y	N	U	UJ	UJ	1.0	0.55	ug/l
Trip Blank	460-224614-4	CARBON DISULFIDE	12/14/2020		Y	N	U		U	1.0	0.82	ug/l
Trip Blank	460-224614-4	CARBON TETRACHLORIDE	12/14/2020		Y	N	U		U	1.0	0.21	ug/l
Trip Blank	460-224614-4	TRANS-1,2-DICHLOROETHENE	12/14/2020		Y	N	U		U	1.0	0.24	ug/l
Trip Blank	460-224614-4	1,2-DICHLOROPROPANE	12/14/2020		Y	N	U		U	1.0	0.35	ug/l

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

GEI Consultants
110 Walt Whitman Road, Suite 204
Huntington Station, NY 11746
ATTN: Mr. Bill Fitchett
Wfitchett@geiconsultants.com

January 28, 2021

SUBJECT: Long Island City, 30th Street, Data Usability Summary Report.

Dear Mr. Fitchett,

Enclosed is the final validation report for the fraction listed below. This SDG was received on January 7, 2021. Attachment 1 is a summary of the samples that were reviewed for analysis.

LDC Project #50185:

SDG #	**Fraction**
460-225550-1	Volatiles

The data validation was performed under modified Category B guidelines using quality control summaries provided by the laboratory. The analyses were validated using the following documents, as applicable to each method:

- USEPA Region 2 Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-Method 8260B and 8260C, SOP HW-24, Revision 4; October 2014
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, EPA 540-R-2017-002; January 2017
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Christina Rink

Christina Rink
crink@lab-data.com
Project Manager/Senior Chemist

44 pages-ADV EQUIS EDD/ NYDUSR Attachment 1

Category B **LDC #50185 (GEI Consultants, Inc. - Huntington Station, NY / 30th Street, Long Island City, Site No. C241214)**

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260D)																															
Matrix: Water/Soil				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	460-225550-1	01/07/21	01/28/21	2	8																														

Site: Long Island City, 30th Street
Laboratory: Eurofins
Report No.: 460-225550-1
Reviewer: Josephine Go and Christina Rink/Laboratory Data Consultants for GEI Consultants, Inc. – Huntington Station, NY
Date: January 27, 2021

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
EP-1	460-225550-1	VOC
EP-2	460-225550-2	VOC
EP-5	460-225550-3	VOC
EP-7	460-225550-4	VOC
EP-11	460-225550-5	VOC
EP-14	460-225550-6	VOC
EP-15	460-225550-7	VOC
EP-16	460-225550-8	VOC
FB20201228	460-225550-9	VOC
Trip Blank	460-225550-10	VOC

Associated QC Samples(s):
Field/Trip Blanks: Trip Blank, FB20201228
Field Duplicate pair: None Associated

The above-listed soil and water samples were collected on December 28, 2020 and were analyzed for volatile organic compounds (VOCs) by SW-846 method 8260D. The data validation was performed in accordance with the USEPA Region 2 *Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-Method 8260B and 8260C,* SOP HW-24, Revision 4 (October 2014) and the USEPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,* EPA 540-R-2017-002 (January 2017), modified as necessary to accommodate the non-CLP methodologies used.

The organic data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) Tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Control Sample (LCS) Results
- Internal Standards
- Field Duplicate Results
- Moisture Content
- Quantitation Limits and Data Assessment
- Sample Quantitation and Compound Identification

Overall Evaluation of Data and Potential Usability Issues

All results are usable as reported or usable with minor qualification due to laboratory quality control outliers.

The validation findings were based on the following information.

Data Completeness

The data package was complete as defined under the requirements for the NYSDEC ASP category B laboratory deliverables.

Holding Times and Sample Preservation

All criteria were met.

GC/MS Tunes

All criteria were met.

Initial and Continuing Calibrations

Initial Calibration:

Compounds that did not meet criteria are summarized in the following table.

Date	Instrument ID	Compound	IC %D	Associated Samples		Validation Action
12/20/20	A98493	2-Hexanone	32.5	FB20201228 Trip Blank	SS	UJ nondetects

Date	Instrument ID	Compound	IC %D	Associated Samples		Validation Action
12/12/20	D76031	Bromomethane	37.9	EP-1 EP-2 EP-5 EP-7 EP-11 EP-14 EP-15 EP-16	SS	UJ nondetects

X = Initial calibration (IC) relative standard deviation (%RSD) > 20; estimate (J/UJ) positive and nondetect results.
XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ) positive and nondetect results.
SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.
+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The 2-hexanone and bromomethane results were estimated due to second source calibration exceedances. The bias cannot be determined. The results can be used for project objectives as nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Continuing calibration:

Compounds that did not meet criteria are summarized in the following table.

Date	Standard ID	Compound	CC %D	Associated Samples		Validation Action
12/30/20	A98867	Methyl acetate	30.5	FB20201228	XX	UJ nondetects
		2-Hexanone	24.1	Trip Blank	XX	UJ nondetects
		1,1,2,2-Tetrachloroethane	21.4		XX	UJ nondetects
12/29/20	D76487	Vinyl chloride	25.2	EP-1	XX	J detects/UJ nondetects
		Acetone	26.3	EP-2	XX	J detects/UJ nondetects
		Carbon disulfide	24.0	EP-5	XX	J detects/UJ nondetects
		Methyl acetate	31.3	EP-7	XX	J detects/UJ nondetects
		2-Butanone	26.1	EP-11	XX	J detects/UJ nondetects
		4-Methyl-2-pentanone	23.1	EP-14	XX	J detects/UJ nondetects
		2-Hexanone	22.4	EP-15	XX	J detects/UJ nondetects
				EP-16		

X = Initial calibration (IC) relative standard deviation (%RSD) > 20; estimate (J/UJ) positive and nondetect results.
XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ) positive and nondetect results.
SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.
+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The methyl acetate, 2-hexanone, 1,1,2,2-tetrachloroethane, vinyl chloride, acetone, carbon disulfide, 2-butanone, and 4-methyl-2-pentanone results were estimated due to continuing calibration exceedances. The bias cannot be determined. The results can be used for project objectives as estimated values (J) or nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Blanks

Contamination was not detected in the method blanks.

No positive results were found in the trip blank sample Trip Blank and field blank sample FB20201228 for VOC analysis.

Surrogate Recoveries

All criteria were met.

MS/MSD Results

MS/MSD analyses were not associated with this sample set. Validation action was not required on this basis.

LCS Results

The following table lists the LCS/LCSD percent recoveries (%R) outside of control limits in the VOC analysis and the resulting validation actions.

LCS ID	Compound	LCS %R (Limits)	LCS/D %R (Limits)	Affected Sample	Validation Action
LCS/LCSD 460-749935/3,4	1,1,2,2-Tetrachloroethane Carbon disulfide Methyl acetate	124 (69-123) 145 (67-136) 151 (58-143)	- - -	EP-1 EP-2 EP-5 EP-7 EP-11 EP-14 EP-15 EP-16	None
LCS/LCSD 460-750414/4,5	Methyl acetate	134 (70-127)	137 (70-127)	FB20201228 Trip Blank	None

- Within control limits

Validation action was not required for 1,1,2,2-tetrachloroethane, carbon disulfide, and methyl acetate due to high LCS/LCSD recoveries as positive results only are affected and these compounds were not detected in the associated samples.

Internal Standards

All criteria were met.

Field Duplicate Results

A field duplicate pair was not associated with this sample set. Validation action was not required on this basis.

Moisture Content

All criteria were met.

Quantitation Limits and Data Assessment

Results were reported which were below the reporting limit (RL) and above the method detection limit (MDL) in the VOC analysis. These results were qualified as estimated (J) by the laboratory.

Dilutions were not required for VOC analysis.

Sample Quantitation and Compound Identification

Calculations were spot-checked; no discrepancies were noted.

DATA VALIDATION QUALIFIERS

U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.

J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.

JN - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.

R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

LDC #: 50185A1a
SDG #: 460-225550-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Category B

Date: 01/22/21
Page: 1 of 1
Reviewer: JM
2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / SW	ICAL ≤ 20%, r² ICV ≤ 30%
IV.	Continuing calibration	SW	CCV ≤ 20%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	FB = 9 TB = 10
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	SW	LCS/D
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	Results < RL > MDL = J dets
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	EP-1	460-225550-1	Soil	12/28/20
2	EP-2	460-225550-2	Soil	12/28/20
3	EP-5	460-225550-3	Soil	12/28/20
4	EP-7	460-225550-4	Soil	12/28/20
5	EP-11	460-225550-5	Soil	12/28/20
6	EP-14	460-225550-6	Soil	12/28/20
7	EP-15	460-225550-7	Soil	12/28/20
8	EP-16	460-225550-8	Soil	12/28/20
9	FB20201228	460-225550-9	Water	12/28/20
10	Trip Blank	460-225550-10	Water	12/28/20
11				
12				
13	MB 460-749935/7			
14	LCS 460-750414/9			

LDC #: 50185 A1a

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20% and relative response factors (RRF) within method criteria?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 30%?		✓		
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 20% and relative response factors (RRF) within method criteria?		✓		
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks were identified in this SDG?	✓			
Were target compounds detected in the field blanks?		✓		
VII. Surrogate spikes				
Were all surrogate percent recovery (%R) within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?		✓		
X. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds detected in the field duplicates?			✓	
XI. Internal standards				
Were internal standard area counts within -50% to +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XII. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	AA. Tetrachloroethene	AAA. 1,3,5-Trimethylbenzene	AAAA. Ethyl tert-butyl ether	A1. 1,3-Butadiene	A2.
B. Bromomethane	BB. 1,1,2,2-Tetrachloroethane	BBB. 4-Chlorotoluene	BBBB. tert-Amyl methyl ether	B1. Hexane	B2.
C. Vinyl choride	CC. Toluene	CCC. tert-Butylbenzene	CCCC. 1-Chlorohexane	C1. Heptane	C2.
D. Chloroethane	DD. Chlorobenzene	DDD. 1,2,4-Trimethylbenzene	DDDD. Isopropyl alcohol	D1. Propylene	D2.
E. Methylene chloride	EE. Ethylbenzene	EEE. sec-Butylbenzene	EEEE. Acetonitrile	E1. Freon 11	E2.
F. Acetone	FF. Styrene	FFF. 1,3-Dichlorobenzene	FFFF. Acrolein	F1. Freon 12	F2.
G. Carbon disulfide	GG. Xylenes, total	GGG. p-Isopropyltoluene	GGGG. Acrylonitrile	G1. Freon 113	G2.
H. 1,1-Dichloroethene	HH. Vinyl acetate	HHH. 1,4-Dichlorobenzene	HHHH. 1,4-Dioxane	H1. Freon 114	H2.
I. 1,1-Dichloroethane	II. 2-Chloroethylvinyl ether	III. n-Butylbenzene	IIII. Isobutyl alcohol	I1. 2-Nitropropane	I2.
J. 1,2-Dichloroethene, total	JJ. Dichlorodifluoromethane	JJJ. 1,2-Dichlorobenzene	JJJJ. Methacrylonitrile	J1. Dimethyl disulfide	J2.
K. Chloroform	KK. Trichlorofluoromethane	KKK. 1,2,4-Trichlorobenzene	KKKK. Propionitrile	K1. 2,3-Dimethyl pentane	K2.
L. 1,2-Dichloroethane	LL. Methyl-tert-butyl ether	LLL. Hexachlorobutadiene	LLLL. Ethyl ether	L1. 2,4-Dimethyl pentane	L2.
M. 2-Butanone	MM. 1,2-Dibromo-3-chloropropane	MMM. Naphthalene	MMMM. Benzyl chloride	M1. 3,3-Dimethyl pentane	M2.
N. 1,1,1-Trichloroethane	NN. Methyl ethyl ketone	NNN. 1,2,3-Trichlorobenzene	NNNN. Iodomethane	N1. 2-Methylpentane	N2.
O. Carbon tetrachloride	OO. 2,2-Dichloropropane	OOO. 1,3,5-Trichlorobenzene	OOOO.1,1-Difluoroethane	O1. 3-Methylpentane	O2.
P. Bromodichloromethane	PP. Bromochloromethane	PPP. trans-1,2-Dichloroethene	PPPP. Tetrahydrofuran	P1. 3-Ethylpentane	P2.
Q. 1,2-Dichloropropane	QQ. 1,1-Dichloropropene	QQQ. cis-1,2-Dichloroethene	QQQQ. Methyl acetate	Q1. 2,2-Dimethylpentane	Q2.
R. cis-1,3-Dichloropropene	RR. Dibromomethane	RRR. m,p-Xylenes	RRRR. Ethyl acetate	R1. 2,2,3- Trimethylbutane	R2.
S. Trichloroethene	SS. 1,3-Dichloropropane	SSS. o-Xylene	SSSS. Cyclohexane	S1. 2,2,4-Trimethylpentane	S2.
T. Dibromochloromethane	TT. 1,2-Dibromoethane	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	TTTT. Methylcyclohexane	T1. 2-Methylhexane	T2.
U. 1,1,2-Trichloroethane	UU. 1,1,1,2-Tetrachloroethane	UUU. 1,2-Dichlorotetrafluoroethane	UUUU. Allyl chloride	U1. Nonanal	U2.
V. Benzene	VV. Isopropylbenzene	VVV. 4-Ethyltoluene	VVVV. Methyl methacrylate	V1. 2-Methylnaphthalene	V2.
W. trans-1,3-Dichloropropene	WW. Bromobenzene	WWW. Ethanol	WWWW. Ethyl methacrylate	W1. Methanol	W2.
X. Bromoform	XX. 1,2,3-Trichloropropane	XXX. Di-isopropyl ether	XXXX. cis-1,4-Dichloro-2-butene	X1. 1,2,3-Trimethylbenzene	X2.
Y. 4-Methyl-2-pentanone	YY. n-Propylbenzene	YYY. tert-Butanol	YYYY. trans-1,4-Dichloro-2-butene	Y1. 2-Propanol	Y2.
Z. 2-Hexanone	ZZ. 2-Chlorotoluene	ZZZ. tert-Butyl alcohol	ZZZZ. Pentachloroethane	Z1.	Z2.

LDC #: 50B5A1a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was an initial calibration verification standard analyzed after each ICAL for each instrument?

Y N N/A Were all %D within the validation criteria of ≤20/30%D?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤ ~~20~~/30.0%)	Associated Samples	Qualifications
MS1	12/20/20	A98493	Z	32.5	9, 10, MB2 (ND)	J/UJ/A
	12/12/20	D76031	B	37.9	1-8, MB1 (ND)	

LDC #: 50185 A1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260 D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Y (N) N/A Were percent differences (%D) ≤20 % and relative response factors (RRF) within the method criteria?

#	Date	Standard ID	Compound	Finding %D (Limit: <20.0%)	Finding RRF (Limit)	Associated Samples	Qualifications
	12/30/20	A98867	QQQQ	30.5		9, 10, MB2 (ND)	J/NJ/A
			Z	24.1			
			BB	21.4			
	12/29/20	D76487	C	25.2		1-8, MB1 (ND+Det)	J/NJ/A
			F	26.3			
			G	24.0			
			QQQQ	31.3			
			M	26.1			
			Y	23.1			
			Z	22.4			

Note: * = Ave RRF failed method criteria but within validation criteria

LDC #: 50185 A1a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was a LCS required?

Y (N) N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	LCS/D 460-749935/3,4	BB	124 (69-123)	( )	( )	1-8 MB1 (ND)	J dets/P
		G	145 (67-136)	( )	( )	↓ ↓	↓
		QQQQ	151 (58-143	( )	( )	↓	
			( )	( )	( )		
			( )	( )	( )		
	LCS/D 460-750444/4,5	QQQQ	134 (70-127)	137 (70-127)	( )	9, 10, MB2 (ND)	J dets/P
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
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			( )	( )	( )		

LDC #: 50185A1a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$ — A_x = Area of Compound — A_{is} = Area of associated internal standard

average RRF = sum of the RRFs/number of standards — C_x = Concentration of compound — C_{is} = Concentration of internal standard

%RSD = 100 * (S/X) — S= Standard deviation of the RRFs — X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 50 std)	Recalculated RRF (RRF 50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL CVOAMS1	12/19/2020 to 12/20/2020	2-Butanone (BUT)	0.2771	0.2771	0.2935	0.2935	5.2	5.2
			cis-1,2-DCE (FBZ)	0.3606	0.3606	0.3664	0.3664	7.4	7.4
			1,4-Dioxane (DXE)	1.0821	1.0821	1.1227	1.1227	15.1	15.1
			Tetrachloroethene (CBZ)	0.4042	0.4042	0.4199	0.4199	13.3	13.3
			1,1,2,2-TCA (DCB)	0.8244	0.8244	0.7802	0.7802	4.9	4.9
2	ICAL CVOAMS4	12/12/2020	2-Butanone (BUT)	0.4052	0.4052	0.4391	0.4391	8.8	8.8
			cis-1,2-DCE (FBZ)	0.3854	0.3854	0.4055	0.4055	3.8	3.8
			1,4-Dioxane (DXE)	1.4765	1.4765	1.6138	1.6138	11.5	11.5
			Tetrachloroethene (CBZ)	0.5575	0.5575	0.5598	0.5598	4.1	4.1
			1,1,2,2-TCA (DCB)	1.4448	0.8793	0.9325	0.9325	9.8	9.8

LDC # 50185A1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound	(IS)	Average RRF (Initial)	Reported RRF (CCV)	Recalculated RRF (CCV)	Reported % D	Recalculated %D
1	A98867 CVOAMS1	12/30/2020	2-Butanone	(BUT)	0.2935	0.2730	0.2730	7.0	7.0
			cis-1,2-DCE	(FBZ)	0.3664	0.3592	0.3592	2.0	2.0
			1,4-Dioxane	(DXE)	1.1227	1.0856	1.0856	3.3	3.3
			Tetrachloroethene	(CBZ)	0.4199	0.3933	0.3933	6.3	6.3
			1,1,2,2-TCA	(DCB)	0.7802	0.9470	0.9470	21.4	21.4
2	D76487 CVOAMS4	12/29/2020	2-Butanone	(BUT)	0.4391	0.3244	0.3244	26.1	26.1
			cis-1,2-DCE	(FBZ)	0.4055	0.3849	0.3849	5.1	5.1
			1,4-Dioxane	(DXE)	1.6138	1.4246	1.4246	11.7	11.7
			Tetrachloroethene	(CBZ)	0.5598	0.4759	0.4759	15.0	15.0
			1,1,2,2-TCA	(DCB)	0.9325	0.9450	0.9450	1.3	1.3

LDC #: 50185 A1a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	50.0	52.2	104	104	0
1,2-Dichloroethane-d4		54.4	109	109	
Toluene-d8		49.8	100	100	
Bromofluorobenzene		56.7	113	113	

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 50185A1a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration; SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: LCSD 460-74995 35/3,4

Compound	Spike Added (mg/kg)		Spiked Sample Concentration (mg/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
1,1-Dichloroethene	0.020	0.020	0.0244	0.0229	122	122	114	114	6	6
Trichloroethene			0.0218	0.0208	109	109	104	104	5	5
Benzene			0.0241	0.0243	121	121	122	122	1	1
Toluene			0.0222	0.0213	101	111	106	106	4	4
Chlorobenzene	↓	↓	0.0208	0.0197	104	104	99	99	5	5

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 50185A1a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The concentration of the sample was calculated for the compound identified below using the following calculation:

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 6 , PCE

Conc. = $\frac{(14243)(50.0)(5\,mL)}{(362898)(0.5598)(5.31g)(0.896)(1000)}$

= 0.003684

≈ 0.0037 mg/kg

#	Sample ID	Compound	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Qualification
	6	PCE	0.0037	0.0037	—

Long Island City, 30th Street - LDC# 50185

SDG: 4602255501

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EP-11-20	460-225550-5	BROMODICHLOROMETHANE	12/29/2020		Y	N	U		U	0.0011	0.00027	mg/kg
EP-11-20	460-225550-5	1,3-DICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0011	0.00039	mg/kg
EP-11-20	460-225550-5	Cis-1,2-Dichloroethylene	12/29/2020		Y	N	U		U	0.0011	0.00038	mg/kg
EP-11-20	460-225550-5	CHLOROMETHANE	12/29/2020		Y	N	U		U	0.0011	0.00046	mg/kg
EP-11-20	460-225550-5	CHLOROFORM	12/29/2020		Y	N	U		U	0.0011	0.0010	mg/kg
EP-11-20	460-225550-5	CHLOROETHANE	12/29/2020		Y	N	U		U	0.0011	0.00055	mg/kg
EP-11-20	460-225550-5	CHLOROBENZENE	12/29/2020		Y	N	U		U	0.0011	0.00019	mg/kg
EP-11-20	460-225550-5	CYCLOHEXANE	12/29/2020		Y	N	U		U	0.0011	0.00023	mg/kg
EP-11-20	460-225550-5	BROMOFORM	12/29/2020		Y	N	U		U	0.0011	0.00045	mg/kg
EP-11-20	460-225550-5	DIBROMOCHLOROMETHANE	12/29/2020		Y	N	U		U	0.0011	0.00020	mg/kg
EP-11-20	460-225550-5	BROMOCHLOROMETHANE	12/29/2020		Y	N	U		U	0.0011	0.00030	mg/kg
EP-11-20	460-225550-5	BENZENE	12/29/2020		Y	N	U		U	0.0011	0.00027	mg/kg
EP-11-20	460-225550-5	METHYL ACETATE	12/29/2020		Y	N	UT	UJ	UJ	0.0053	0.0045	mg/kg
EP-11-20	460-225550-5	CARBON DISULFIDE	12/29/2020		Y	N	UT	UJ	UJ	0.0011	0.00028	mg/kg
EP-11-20	460-225550-5	1,4-DIOXANE (P-DIOXANE)	12/29/2020		Y	N	U		U	0.021	0.0097	mg/kg
EP-11-20	460-225550-5	1,4-DICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0011	0.00024	mg/kg
EP-11-20	460-225550-5	CARBON TETRACHLORIDE	12/29/2020		Y	N	U		U	0.0011	0.00041	mg/kg
EP-11-20	460-225550-5	STYRENE	12/29/2020		Y	N	U		U	0.0011	0.00029	mg/kg
EP-11-20	460-225550-5	2-HEXANONE	12/29/2020		Y	N	U	UJ	UJ	0.0053	0.0018	mg/kg
EP-11-20	460-225550-5	VINYL CHLORIDE	12/29/2020		Y	N	U	UJ	UJ	0.0011	0.00058	mg/kg
EP-11-20	460-225550-5	TRICHLOROFLUOROMETHANE	12/29/2020		Y	N	U		U	0.0011	0.00043	mg/kg
EP-11-20	460-225550-5	TRICHLOROETHYLENE (TCE)	12/29/2020		Y	N	U		U	0.0011	0.00034	mg/kg
EP-11-20	460-225550-5	TRANS-1,3-DICHLOROPROPENE	12/29/2020		Y	N	U		U	0.0011	0.00028	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EP-11-20	460-225550-5	TRANS-1,2-DICHLOROETHENE	12/29/2020		Y	N	U		U	0.0011	0.00026	mg/kg
EP-11-20	460-225550-5	CIS-1,3-DICHLOROPROPENE	12/29/2020		Y	N	U		U	0.0011	0.00029	mg/kg
EP-11-20	460-225550-5	TETRACHLOROETHYLENE(PCE)	12/29/2020	0.0010	Y	Y	J		J	0.0011	0.00032	mg/kg
EP-11-20	460-225550-5	O-XYLENE (1,2-DIMETHYLBENZENE)	12/29/2020		Y	N	U		U	0.0011	0.00020	mg/kg
EP-11-20	460-225550-5	METHYLENE CHLORIDE	12/29/2020		Y	N	U		U	0.0021	0.0012	mg/kg
EP-11-20	460-225550-5	METHYLCYCLOHEXANE	12/29/2020		Y	N	U		U	0.0011	0.00053	mg/kg
EP-11-20	460-225550-5	M,P-XYLENES	12/29/2020		Y	N	U		U	0.0011	0.00018	mg/kg
EP-11-20	460-225550-5	Isopropylbenzene (Cumene)	12/29/2020		Y	N	U		U	0.0011	0.00030	mg/kg
EP-11-20	460-225550-5	ETHYLBENZENE	12/29/2020		Y	N	U		U	0.0011	0.00021	mg/kg
EP-11-20	460-225550-5	DICHLORODIFLUOROMETHANE	12/29/2020		Y	N	U		U	0.0011	0.00036	mg/kg
EP-11-20	460-225550-5	TOLUENE	12/29/2020		Y	N	U		U	0.0011	0.00025	mg/kg
EP-11-20	460-225550-5	BROMOMETHANE	12/29/2020		Y	N	U	UJ	UJ	0.0021	0.0011	mg/kg
EP-11-20	460-225550-5	METHYL ETHYL KETONE (2-BUTANONE)	12/29/2020		Y	N	U	UJ	UJ	0.0053	0.00039	mg/kg
EP-11-20	460-225550-5	1,1,2,2-TETRACHLOROETHANE	12/29/2020		Y	N	UT		U	0.0011	0.00023	mg/kg
EP-11-20	460-225550-5	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	12/29/2020		Y	N	U		U	0.0011	0.00032	mg/kg
EP-11-20	460-225550-5	1,2-DICHLOROPROPANE	12/29/2020		Y	N	U		U	0.0011	0.00045	mg/kg
EP-11-20	460-225550-5	TERT-BUTYL METHYL ETHER	12/29/2020		Y	N	U		U	0.0011	0.00054	mg/kg
EP-11-20	460-225550-5	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	12/29/2020		Y	N	U	UJ	UJ	0.0053	0.0016	mg/kg
EP-11-20	460-225550-5	1,1,1-TRICHLOROETHANE	12/29/2020		Y	N	U		U	0.0011	0.00025	mg/kg
EP-11-20	460-225550-5	1,1,2-TRICHLOROETHANE	12/29/2020		Y	N	U		U	0.0011	0.00019	mg/kg
EP-11-20	460-225550-5	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	12/29/2020		Y	N	U		U	0.0011	0.00019	mg/kg
EP-11-20	460-225550-5	1,2-DICHLOROETHANE	12/29/2020		Y	N	U		U	0.0011	0.00031	mg/kg
EP-11-20	460-225550-5	1,1-DICHLOROETHANE	12/29/2020		Y	N	U		U	0.0011	0.00022	mg/kg
EP-11-20	460-225550-5	1,1-DICHLOROETHENE	12/29/2020		Y	N	U		U	0.0011	0.00024	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EP-11-20	460-225550-5	1,2,3-TRICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0011	0.00019	mg/kg
EP-11-20	460-225550-5	1,2,4-TRICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0011	0.00038	mg/kg
EP-11-20	460-225550-5	1,2-DIBROMO-3-CHLOROPROPANE	12/29/2020		Y	N	U		U	0.0011	0.00049	mg/kg
EP-11-20	460-225550-5	ACETONE	12/29/2020		Y	N	U	UJ	UJ	0.0063	0.0060	mg/kg
EP-11-20	460-225550-5	1,2-DICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0011	0.00038	mg/kg
EP-1-202	460-225550-1	CIS-1,3-DICHLOROPROPENE	12/29/2020		Y	N	U		U	0.0011	0.00029	mg/kg
EP-1-202	460-225550-1	Cis-1,2-Dichloroethylene	12/29/2020		Y	N	U		U	0.0011	0.00039	mg/kg
EP-1-202	460-225550-1	CHLOROMETHANE	12/29/2020		Y	N	U		U	0.0011	0.00047	mg/kg
EP-1-202	460-225550-1	CHLOROFORM	12/29/2020		Y	N	U		U	0.0011	0.0010	mg/kg
EP-1-202	460-225550-1	CHLOROETHANE	12/29/2020		Y	N	U		U	0.0011	0.00056	mg/kg
EP-1-202	460-225550-1	CHLOROBENZENE	12/29/2020		Y	N	U		U	0.0011	0.00019	mg/kg
EP-1-202	460-225550-1	CARBON TETRACHLORIDE	12/29/2020		Y	N	U		U	0.0011	0.00042	mg/kg
EP-1-202	460-225550-1	BENZENE	12/29/2020		Y	N	U		U	0.0011	0.00028	mg/kg
EP-1-202	460-225550-1	BROMODICHLOROMETHANE	12/29/2020		Y	N	U		U	0.0011	0.00028	mg/kg
EP-1-202	460-225550-1	BROMOCHLOROMETHANE	12/29/2020		Y	N	U		U	0.0011	0.00030	mg/kg
EP-1-202	460-225550-1	CYCLOHEXANE	12/29/2020		Y	N	U		U	0.0011	0.00024	mg/kg
EP-1-202	460-225550-1	METHYLENE CHLORIDE	12/29/2020		Y	N	U		U	0.0022	0.0012	mg/kg
EP-1-202	460-225550-1	1,4-DIOXANE (P-DIOXANE)	12/29/2020		Y	N	U		U	0.022	0.0099	mg/kg
EP-1-202	460-225550-1	BROMOFORM	12/29/2020		Y	N	U		U	0.0011	0.00046	mg/kg
EP-1-202	460-225550-1	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	12/29/2020		Y	N	U		U	0.0011	0.00019	mg/kg
EP-1-202	460-225550-1	TRICHLOROFLUOROMETHANE	12/29/2020		Y	N	U		U	0.0011	0.00044	mg/kg
EP-1-202	460-225550-1	TRICHLOROETHYLENE (TCE)	12/29/2020		Y	N	U		U	0.0011	0.00035	mg/kg
EP-1-202	460-225550-1	TRANS-1,3-DICHLOROPROPENE	12/29/2020		Y	N	U		U	0.0011	0.00029	mg/kg
EP-1-202	460-225550-1	TRANS-1,2-DICHLOROETHENE	12/29/2020		Y	N	U		U	0.0011	0.00027	mg/kg
EP-1-202	460-225550-1	TOLUENE	12/29/2020		Y	N	U		U	0.0011	0.00025	mg/kg

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EP-1-202	460-225550-1	TETRACHLOROETHYLENE(PCE)	12/29/2020		Y	N	U		U	0.0011	0.00033	mg/kg
EP-1-202	460-225550-1	TERT-BUTYL METHYL ETHER	12/29/2020		Y	N	U		U	0.0011	0.00055	mg/kg
EP-1-202	460-225550-1	M,P-XYLENES	12/29/2020		Y	N	U		U	0.0011	0.00019	mg/kg
EP-1-202	460-225550-1	O-XYLENE (1,2-DIMETHYLBENZENE)	12/29/2020		Y	N	U		U	0.0011	0.00021	mg/kg
EP-1-202	460-225550-1	DIBROMOCHLOROMETHANE	12/29/2020		Y	N	U		U	0.0011	0.00021	mg/kg
EP-1-202	460-225550-1	METHYLCYCLOHEXANE	12/29/2020		Y	N	U		U	0.0011	0.00054	mg/kg
EP-1-202	460-225550-1	1,4-DICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0011	0.00024	mg/kg
EP-1-202	460-225550-1	Isopropylbenzene (Cumene)	12/29/2020		Y	N	U		U	0.0011	0.00031	mg/kg
EP-1-202	460-225550-1	ETHYLBENZENE	12/29/2020		Y	N	U		U	0.0011	0.00021	mg/kg
EP-1-202	460-225550-1	DICHLORODIFLUOROMETHANE	12/29/2020		Y	N	U		U	0.0011	0.00036	mg/kg
EP-1-202	460-225550-1	1,1,2,2-TETRACHLOROETHANE	12/29/2020		Y	N	UT		U	0.0011	0.00023	mg/kg
EP-1-202	460-225550-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	12/29/2020		Y	N	U		U	0.0011	0.00032	mg/kg
EP-1-202	460-225550-1	STYRENE	12/29/2020		Y	N	U		U	0.0011	0.00030	mg/kg
EP-1-202	460-225550-1	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	12/29/2020		Y	N	U	UJ	UJ	0.0054	0.0017	mg/kg
EP-1-202	460-225550-1	CARBON DISULFIDE	12/29/2020		Y	N	UT	UJ	UJ	0.0011	0.00029	mg/kg
EP-1-202	460-225550-1	METHYL ACETATE	12/29/2020		Y	N	UT	UJ	UJ	0.0054	0.0046	mg/kg
EP-1-202	460-225550-1	ACETONE	12/29/2020		Y	N	U	UJ	UJ	0.0065	0.0062	mg/kg
EP-1-202	460-225550-1	1,2-DICHLOROETHANE	12/29/2020		Y	N	U		U	0.0011	0.00032	mg/kg
EP-1-202	460-225550-1	METHYL ETHYL KETONE (2-BUTANONE)	12/29/2020		Y	N	U	UJ	UJ	0.0054	0.00040	mg/kg
EP-1-202	460-225550-1	1,3-DICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0011	0.00039	mg/kg
EP-1-202	460-225550-1	VINYL CHLORIDE	12/29/2020		Y	N	U	UJ	UJ	0.0011	0.00059	mg/kg
EP-1-202	460-225550-1	2-HEXANONE	12/29/2020		Y	N	U	UJ	UJ	0.0054	0.0018	mg/kg
EP-1-202	460-225550-1	BROMOMETHANE	12/29/2020		Y	N	U	UJ	UJ	0.0022	0.0011	mg/kg
EP-1-202	460-225550-1	1,2-DICHLOROPROPANE	12/29/2020		Y	N	U		U	0.0011	0.00046	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EP-1-202	460-225550-1	1,1,1-TRICHLOROETHANE	12/29/2020		Y	N	U		U	0.0011	0.00025	mg/kg
EP-1-202	460-225550-1	1,2-DIBROMO-3-CHLOROPROPANE	12/29/2020		Y	N	U		U	0.0011	0.00050	mg/kg
EP-1-202	460-225550-1	1,2,4-TRICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0011	0.00039	mg/kg
EP-1-202	460-225550-1	1,2,3-TRICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0011	0.00019	mg/kg
EP-1-202	460-225550-1	1,2-DICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0011	0.00039	mg/kg
EP-1-202	460-225550-1	1,1-DICHLOROETHENE	12/29/2020		Y	N	U		U	0.0011	0.00024	mg/kg
EP-1-202	460-225550-1	1,1-DICHLOROETHANE	12/29/2020		Y	N	U		U	0.0011	0.00022	mg/kg
EP-1-202	460-225550-1	1,1,2-TRICHLOROETHANE	12/29/2020		Y	N	U		U	0.0011	0.00019	mg/kg
EP-14-20	460-225550-6	1,4-DIOXANE (P-DIOXANE)	12/29/2020		Y	N	U		U	0.021	0.0096	mg/kg
EP-14-20	460-225550-6	1,4-DICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0011	0.00024	mg/kg
EP-14-20	460-225550-6	1,3-DICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0011	0.00038	mg/kg
EP-14-20	460-225550-6	TOLUENE	12/29/2020		Y	N	U		U	0.0011	0.00025	mg/kg
EP-14-20	460-225550-6	1,2-DICHLOROPROPANE	12/29/2020		Y	N	U		U	0.0011	0.00044	mg/kg
EP-14-20	460-225550-6	TERT-BUTYL METHYL ETHER	12/29/2020		Y	N	U		U	0.0011	0.00054	mg/kg
EP-14-20	460-225550-6	TETRACHLOROETHYLENE(PCE)	12/29/2020	0.0037	Y	Y				0.0011	0.00032	mg/kg
EP-14-20	460-225550-6	1,2-DICHLOROETHANE	12/29/2020		Y	N	U		U	0.0011	0.00031	mg/kg
EP-14-20	460-225550-6	BROMOMETHANE	12/29/2020		Y	N	U	UJ	UJ	0.0021	0.0011	mg/kg
EP-14-20	460-225550-6	1,1,2,2-TETRACHLOROETHANE	12/29/2020		Y	N	UT		U	0.0011	0.00022	mg/kg
EP-14-20	460-225550-6	2-HEXANONE	12/29/2020		Y	N	U	UJ	UJ	0.0053	0.0018	mg/kg
EP-14-20	460-225550-6	TRANS-1,2-DICHLOROETHENE	12/29/2020		Y	N	U		U	0.0011	0.00026	mg/kg
EP-14-20	460-225550-6	TRANS-1,3-DICHLOROPROPENE	12/29/2020		Y	N	U		U	0.0011	0.00028	mg/kg
EP-14-20	460-225550-6	METHYLENE CHLORIDE	12/29/2020		Y	N	U		U	0.0021	0.0012	mg/kg
EP-14-20	460-225550-6	TRICHLOROFLUOROMETHANE	12/29/2020		Y	N	U		U	0.0011	0.00043	mg/kg
EP-14-20	460-225550-6	STYRENE	12/29/2020		Y	N	U		U	0.0011	0.00029	mg/kg
EP-14-20	460-225550-6	O-XYLENE (1,2-DIMETHYLBENZENE)	12/29/2020		Y	N	U		U	0.0011	0.00020	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EP-14-20	460-225550-6	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	12/29/2020		Y	N	U		U	0.0011	0.00032	mg/kg
EP-14-20	460-225550-6	1,1,2-TRICHLOROETHANE	12/29/2020		Y	N	U		U	0.0011	0.00019	mg/kg
EP-14-20	460-225550-6	1,2-DICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0011	0.00038	mg/kg
EP-14-20	460-225550-6	METHYL ETHYL KETONE (2-BUTANONE)	12/29/2020		Y	N	U	UJ	UJ	0.0053	0.00039	mg/kg
EP-14-20	460-225550-6	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	12/29/2020		Y	N	U	UJ	UJ	0.0053	0.0016	mg/kg
EP-14-20	460-225550-6	VINYL CHLORIDE	12/29/2020		Y	N	U	UJ	UJ	0.0011	0.00057	mg/kg
EP-14-20	460-225550-6	METHYLCYCLOHEXANE	12/29/2020		Y	N	U		U	0.0011	0.00052	mg/kg
EP-14-20	460-225550-6	TRICHLOROETHYLENE (TCE)	12/29/2020	0.00035	Y	Y	J		J	0.0011	0.00034	mg/kg
EP-14-20	460-225550-6	CIS-1,3-DICHLOROPROPENE	12/29/2020		Y	N	U		U	0.0011	0.00029	mg/kg
EP-14-20	460-225550-6	CHLOROETHANE	12/29/2020		Y	N	U		U	0.0011	0.00055	mg/kg
EP-14-20	460-225550-6	CHLOROFORM	12/29/2020		Y	N	U		U	0.0011	0.0010	mg/kg
EP-14-20	460-225550-6	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	12/29/2020		Y	N	U		U	0.0011	0.00019	mg/kg
EP-14-20	460-225550-6	1,1-DICHLOROETHENE	12/29/2020		Y	N	U		U	0.0011	0.00024	mg/kg
EP-14-20	460-225550-6	CHLOROBENZENE	12/29/2020		Y	N	U		U	0.0011	0.00019	mg/kg
EP-14-20	460-225550-6	Cis-1,2-Dichloroethylene	12/29/2020		Y	N	U		U	0.0011	0.00038	mg/kg
EP-14-20	460-225550-6	CYCLOHEXANE	12/29/2020		Y	N	U		U	0.0011	0.00023	mg/kg
EP-14-20	460-225550-6	DIBROMOCHLOROMETHANE	12/29/2020		Y	N	U		U	0.0011	0.00020	mg/kg
EP-14-20	460-225550-6	DICHLORODIFLUOROMETHANE	12/29/2020		Y	N	U		U	0.0011	0.00036	mg/kg
EP-14-20	460-225550-6	ETHYLBENZENE	12/29/2020		Y	N	U		U	0.0011	0.00021	mg/kg
EP-14-20	460-225550-6	Isopropylbenzene (Cumene)	12/29/2020		Y	N	U		U	0.0011	0.00030	mg/kg
EP-14-20	460-225550-6	M,P-XYLENES	12/29/2020		Y	N	U		U	0.0011	0.00018	mg/kg
EP-14-20	460-225550-6	CARBON DISULFIDE	12/29/2020		Y	N	UT	UJ	UJ	0.0011	0.00028	mg/kg
EP-14-20	460-225550-6	METHYL ACETATE	12/29/2020		Y	N	UT	UJ	UJ	0.0053	0.0045	mg/kg
EP-14-20	460-225550-6	BENZENE	12/29/2020		Y	N	U		U	0.0011	0.00027	mg/kg

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EP-14-20	460-225550-6	1,1-DICHLOROETHANE	12/29/2020		Y	N	U		U	0.0011	0.00022	mg/kg
EP-14-20	460-225550-6	CHLOROMETHANE	12/29/2020		Y	N	U		U	0.0011	0.00046	mg/kg
EP-14-20	460-225550-6	1,2,3-TRICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0011	0.00019	mg/kg
EP-14-20	460-225550-6	1,1,1-TRICHLOROETHANE	12/29/2020		Y	N	U		U	0.0011	0.00024	mg/kg
EP-14-20	460-225550-6	ACETONE	12/29/2020	0.014	Y	Y		J	J	0.0063	0.0060	mg/kg
EP-14-20	460-225550-6	BROMOCHLOROMETHANE	12/29/2020		Y	N	U		U	0.0011	0.00030	mg/kg
EP-14-20	460-225550-6	BROMODICHLOROMETHANE	12/29/2020		Y	N	U		U	0.0011	0.00027	mg/kg
EP-14-20	460-225550-6	BROMOFORM	12/29/2020		Y	N	U		U	0.0011	0.00045	mg/kg
EP-14-20	460-225550-6	CARBON TETRACHLORIDE	12/29/2020		Y	N	U		U	0.0011	0.00041	mg/kg
EP-14-20	460-225550-6	1,2-DIBROMO-3-CHLOROPROPANE	12/29/2020		Y	N	U		U	0.0011	0.00048	mg/kg
EP-14-20	460-225550-6	1,2,4-TRICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0011	0.00038	mg/kg
EP-15-20	460-225550-7	CHLOROFORM	12/29/2020		Y	N	U		U	0.00097	0.00094	mg/kg
EP-15-20	460-225550-7	Isopropylbenzene (Cumene)	12/29/2020		Y	N	U		U	0.00097	0.00028	mg/kg
EP-15-20	460-225550-7	ETHYLBENZENE	12/29/2020		Y	N	U		U	0.00097	0.00019	mg/kg
EP-15-20	460-225550-7	VINYL CHLORIDE	12/29/2020		Y	N	U	UJ	UJ	0.00097	0.00053	mg/kg
EP-15-20	460-225550-7	DIBROMOCHLOROMETHANE	12/29/2020		Y	N	U		U	0.00097	0.00019	mg/kg
EP-15-20	460-225550-7	BROMOMETHANE	12/29/2020		Y	N	U	UJ	UJ	0.0019	0.00097	mg/kg
EP-15-20	460-225550-7	CIS-1,3-DICHLOROPROPENE	12/29/2020		Y	N	U		U	0.00097	0.00027	mg/kg
EP-15-20	460-225550-7	CHLOROMETHANE	12/29/2020		Y	N	U		U	0.00097	0.00042	mg/kg
EP-15-20	460-225550-7	STYRENE	12/29/2020		Y	N	U		U	0.00097	0.00027	mg/kg
EP-15-20	460-225550-7	Cis-1,2-Dichloroethylene	12/29/2020		Y	N	U		U	0.00097	0.00035	mg/kg
EP-15-20	460-225550-7	M,P-XYLENES	12/29/2020		Y	N	U		U	0.00097	0.00017	mg/kg
EP-15-20	460-225550-7	METHYLCYCLOHEXANE	12/29/2020		Y	N	U		U	0.00097	0.00048	mg/kg
EP-15-20	460-225550-7	O-XYLENE (1,2-DIMETHYLBENZENE)	12/29/2020		Y	N	U		U	0.00097	0.00019	mg/kg
EP-15-20	460-225550-7	TRICHLOROETHYLENE (TCE)	12/29/2020		Y	N	U		U	0.00097	0.00031	mg/kg

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EP-15-20	460-225550-7	TERT-BUTYL METHYL ETHER	12/29/2020		Y	N	U		U	0.00097	0.00050	mg/kg
EP-15-20	460-225550-7	TETRACHLOROETHYLENE(PCE)	12/29/2020	0.0020	Y	Y				0.00097	0.00030	mg/kg
EP-15-20	460-225550-7	TOLUENE	12/29/2020		Y	N	U		U	0.00097	0.00023	mg/kg
EP-15-20	460-225550-7	TRANS-1,2-DICHLOROETHENE	12/29/2020		Y	N	U		U	0.00097	0.00024	mg/kg
EP-15-20	460-225550-7	TRANS-1,3-DICHLOROPROPENE	12/29/2020		Y	N	U		U	0.00097	0.00026	mg/kg
EP-15-20	460-225550-7	CHLOROETHANE	12/29/2020		Y	N	U		U	0.00097	0.00051	mg/kg
EP-15-20	460-225550-7	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	12/29/2020		Y	N	U	UJ	UJ	0.0049	0.0015	mg/kg
EP-15-20	460-225550-7	CYCLOHEXANE	12/29/2020		Y	N	U		U	0.00097	0.00021	mg/kg
EP-15-20	460-225550-7	TRICHLOROFLUOROMETHANE	12/29/2020		Y	N	U		U	0.00097	0.00039	mg/kg
EP-15-20	460-225550-7	METHYLENE CHLORIDE	12/29/2020		Y	N	U		U	0.0019	0.0011	mg/kg
EP-15-20	460-225550-7	1,1,1-TRICHLOROETHANE	12/29/2020		Y	N	U		U	0.00097	0.00023	mg/kg
EP-15-20	460-225550-7	ACETONE	12/29/2020	0.026	Y	Y		J	J	0.0058	0.0056	mg/kg
EP-15-20	460-225550-7	METHYL ETHYL KETONE (2-BUTANONE)	12/29/2020	0.0033	Y	Y	J	J	J	0.0049	0.00036	mg/kg
EP-15-20	460-225550-7	DICHLORODIFLUOROMETHANE	12/29/2020		Y	N	U		U	0.00097	0.00033	mg/kg
EP-15-20	460-225550-7	CHLOROBENZENE	12/29/2020		Y	N	U		U	0.00097	0.00017	mg/kg
EP-15-20	460-225550-7	METHYL ACETATE	12/29/2020		Y	N	UT	UJ	UJ	0.0049	0.0042	mg/kg
EP-15-20	460-225550-7	1,1,2,2-TETRACHLOROETHANE	12/29/2020		Y	N	UT		U	0.00097	0.00021	mg/kg
EP-15-20	460-225550-7	1,1,2-TRICHLOROETHANE	12/29/2020		Y	N	U		U	0.00097	0.00017	mg/kg
EP-15-20	460-225550-7	1,1-DICHLOROETHANE	12/29/2020		Y	N	U		U	0.00097	0.00020	mg/kg
EP-15-20	460-225550-7	1,1-DICHLOROETHENE	12/29/2020		Y	N	U		U	0.00097	0.00022	mg/kg
EP-15-20	460-225550-7	1,2,3-TRICHLOROBENZENE	12/29/2020		Y	N	U		U	0.00097	0.00018	mg/kg
EP-15-20	460-225550-7	1,2,4-TRICHLOROBENZENE	12/29/2020		Y	N	U		U	0.00097	0.00035	mg/kg
EP-15-20	460-225550-7	1,2-DIBROMO-3-CHLOROPROPANE	12/29/2020		Y	N	U		U	0.00097	0.00045	mg/kg
EP-15-20	460-225550-7	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	12/29/2020		Y	N	U		U	0.00097	0.00017	mg/kg

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EP-15-20	460-225550-7	2-HEXANONE	12/29/2020		Y	N	U	UJ	UJ	0.0049	0.0017	mg/kg
EP-15-20	460-225550-7	CARBON DISULFIDE	12/29/2020		Y	N	UT	UJ	UJ	0.00097	0.00026	mg/kg
EP-15-20	460-225550-7	BROMOFORM	12/29/2020		Y	N	U		U	0.00097	0.00041	mg/kg
EP-15-20	460-225550-7	BROMOCHLOROMETHANE	12/29/2020		Y	N	U		U	0.00097	0.00027	mg/kg
EP-15-20	460-225550-7	1,2-DICHLOROBENZENE	12/29/2020		Y	N	U		U	0.00097	0.00035	mg/kg
EP-15-20	460-225550-7	BROMODICHLOROMETHANE	12/29/2020		Y	N	U		U	0.00097	0.00025	mg/kg
EP-15-20	460-225550-7	BENZENE	12/29/2020		Y	N	U		U	0.00097	0.00025	mg/kg
EP-15-20	460-225550-7	1,4-DIOXANE (P-DIOXANE)	12/29/2020		Y	N	U		U	0.019	0.0089	mg/kg
EP-15-20	460-225550-7	1,4-DICHLOROBENZENE	12/29/2020		Y	N	U		U	0.00097	0.00022	mg/kg
EP-15-20	460-225550-7	1,3-DICHLOROBENZENE	12/29/2020		Y	N	U		U	0.00097	0.00035	mg/kg
EP-15-20	460-225550-7	1,2-DICHLOROPROPANE	12/29/2020		Y	N	U		U	0.00097	0.00041	mg/kg
EP-15-20	460-225550-7	1,2-DICHLOROETHANE	12/29/2020		Y	N	U		U	0.00097	0.00029	mg/kg
EP-15-20	460-225550-7	CARBON TETRACHLORIDE	12/29/2020		Y	N	U		U	0.00097	0.00038	mg/kg
EP-15-20	460-225550-7	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	12/29/2020		Y	N	U		U	0.00097	0.00029	mg/kg
EP-16-20	460-225550-8	DIBROMOCHLOROMETHANE	12/29/2020		Y	N	U		U	0.0011	0.00022	mg/kg
EP-16-20	460-225550-8	CYCLOHEXANE	12/29/2020		Y	N	U		U	0.0011	0.00025	mg/kg
EP-16-20	460-225550-8	CIS-1,3-DICHLOROPROPENE	12/29/2020		Y	N	U		U	0.0011	0.00031	mg/kg
EP-16-20	460-225550-8	Cis-1,2-Dichloroethylene	12/29/2020		Y	N	U		U	0.0011	0.00041	mg/kg
EP-16-20	460-225550-8	CHLOROMETHANE	12/29/2020		Y	N	U		U	0.0011	0.00050	mg/kg
EP-16-20	460-225550-8	CHLOROETHANE	12/29/2020		Y	N	U		U	0.0011	0.00060	mg/kg
EP-16-20	460-225550-8	METHYLCYCLOHEXANE	12/29/2020		Y	N	U		U	0.0011	0.00057	mg/kg
EP-16-20	460-225550-8	CHLOROBENZENE	12/29/2020		Y	N	U		U	0.0011	0.00020	mg/kg
EP-16-20	460-225550-8	CHLOROFORM	12/29/2020		Y	N	U		U	0.0011	0.0011	mg/kg
EP-16-20	460-225550-8	ETHYLBENZENE	12/29/2020		Y	N	U		U	0.0011	0.00023	mg/kg
EP-16-20	460-225550-8	M,P-XYLENES	12/29/2020		Y	N	U		U	0.0011	0.00020	mg/kg

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EP-16-20	460-225550-8	TETRACHLOROETHYLENE(PCE)	12/29/2020	0.0011	Y	Y				0.0011	0.00035	mg/kg
EP-16-20	460-225550-8	METHYLENE CHLORIDE	12/29/2020		Y	N	U		U	0.0023	0.0013	mg/kg
EP-16-20	460-225550-8	O-XYLENE (1,2-DIMETHYLBENZENE)	12/29/2020		Y	N	U		U	0.0011	0.00022	mg/kg
EP-16-20	460-225550-8	STYRENE	12/29/2020		Y	N	U		U	0.0011	0.00032	mg/kg
EP-16-20	460-225550-8	CARBON TETRACHLORIDE	12/29/2020		Y	N	U		U	0.0011	0.00044	mg/kg
EP-16-20	460-225550-8	1,2-DIBROMO-3-CHLOROPROPANE	12/29/2020		Y	N	U		U	0.0011	0.00053	mg/kg
EP-16-20	460-225550-8	TERT-BUTYL METHYL ETHER	12/29/2020		Y	N	U		U	0.0011	0.00059	mg/kg
EP-16-20	460-225550-8	Isopropylbenzene (Cumene)	12/29/2020		Y	N	U		U	0.0011	0.00033	mg/kg
EP-16-20	460-225550-8	1,2-DICHLOROPROPANE	12/29/2020		Y	N	U		U	0.0011	0.00049	mg/kg
EP-16-20	460-225550-8	2-HEXANONE	12/29/2020		Y	N	U	UJ	UJ	0.0057	0.0020	mg/kg
EP-16-20	460-225550-8	CARBON DISULFIDE	12/29/2020		Y	N	UT	UJ	UJ	0.0011	0.00031	mg/kg
EP-16-20	460-225550-8	1,1,1-TRICHLOROETHANE	12/29/2020		Y	N	U		U	0.0011	0.00027	mg/kg
EP-16-20	460-225550-8	1,1,2-TRICHLOROETHANE	12/29/2020		Y	N	U		U	0.0011	0.00020	mg/kg
EP-16-20	460-225550-8	1,1-DICHLOROETHANE	12/29/2020		Y	N	U		U	0.0011	0.00024	mg/kg
EP-16-20	460-225550-8	1,1-DICHLOROETHENE	12/29/2020		Y	N	U		U	0.0011	0.00026	mg/kg
EP-16-20	460-225550-8	1,2,3-TRICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0011	0.00021	mg/kg
EP-16-20	460-225550-8	1,2,4-TRICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0011	0.00041	mg/kg
EP-16-20	460-225550-8	1,2-DICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0011	0.00041	mg/kg
EP-16-20	460-225550-8	1,2-DICHLOROETHANE	12/29/2020		Y	N	U		U	0.0011	0.00034	mg/kg
EP-16-20	460-225550-8	BROMOFORM	12/29/2020		Y	N	U		U	0.0011	0.00049	mg/kg
EP-16-20	460-225550-8	1,3-DICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0011	0.00042	mg/kg
EP-16-20	460-225550-8	1,4-DICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0011	0.00026	mg/kg
EP-16-20	460-225550-8	1,4-DIOXANE (P-DIOXANE)	12/29/2020		Y	N	U		U	0.023	0.011	mg/kg
EP-16-20	460-225550-8	METHYL ACETATE	12/29/2020		Y	N	UT	UJ	UJ	0.0057	0.0049	mg/kg
EP-16-20	460-225550-8	1,1,2,2-TETRACHLOROETHANE	12/29/2020		Y	N	UT		U	0.0011	0.00025	mg/kg

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EP-16-20	460-225550-8	BENZENE	12/29/2020		Y	N	U		U	0.0011	0.00030	mg/kg
EP-16-20	460-225550-8	BROMOCHLOROMETHANE	12/29/2020		Y	N	U		U	0.0011	0.00032	mg/kg
EP-16-20	460-225550-8	BROMODICHLOROMETHANE	12/29/2020		Y	N	U		U	0.0011	0.00029	mg/kg
EP-16-20	460-225550-8	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	12/29/2020		Y	N	U		U	0.0011	0.00021	mg/kg
EP-16-20	460-225550-8	DICHLORODIFLUOROMETHANE	12/29/2020		Y	N	U		U	0.0011	0.00039	mg/kg
EP-16-20	460-225550-8	METHYL ETHYL KETONE (2-BUTANONE)	12/29/2020		Y	N	U	UJ	UJ	0.0057	0.00042	mg/kg
EP-16-20	460-225550-8	VINYL CHLORIDE	12/29/2020		Y	N	U	UJ	UJ	0.0011	0.00063	mg/kg
EP-16-20	460-225550-8	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	12/29/2020		Y	N	U	UJ	UJ	0.0057	0.0018	mg/kg
EP-16-20	460-225550-8	TOLUENE	12/29/2020		Y	N	U		U	0.0011	0.00027	mg/kg
EP-16-20	460-225550-8	BROMOMETHANE	12/29/2020		Y	N	U	UJ	UJ	0.0023	0.0011	mg/kg
EP-16-20	460-225550-8	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	12/29/2020		Y	N	U		U	0.0011	0.00035	mg/kg
EP-16-20	460-225550-8	TRICHLOROETHYLENE (TCE)	12/29/2020		Y	N	U		U	0.0011	0.00037	mg/kg
EP-16-20	460-225550-8	TRANS-1,2-DICHLOROETHENE	12/29/2020		Y	N	U		U	0.0011	0.00028	mg/kg
EP-16-20	460-225550-8	ACETONE	12/29/2020		Y	N	U	UJ	UJ	0.0069	0.0066	mg/kg
EP-16-20	460-225550-8	TRICHLOROFLUOROMETHANE	12/29/2020		Y	N	U		U	0.0011	0.00047	mg/kg
EP-16-20	460-225550-8	TRANS-1,3-DICHLOROPROPENE	12/29/2020		Y	N	U		U	0.0011	0.00031	mg/kg
EP-2-202	460-225550-2	TERT-BUTYL METHYL ETHER	12/29/2020		Y	N	U		U	0.0012	0.00059	mg/kg
EP-2-202	460-225550-2	STYRENE	12/29/2020		Y	N	U		U	0.0012	0.00032	mg/kg
EP-2-202	460-225550-2	O-XYLENE (1,2-DIMETHYLBENZENE)	12/29/2020		Y	N	U		U	0.0012	0.00022	mg/kg
EP-2-202	460-225550-2	METHYLENE CHLORIDE	12/29/2020		Y	N	U		U	0.0023	0.0013	mg/kg
EP-2-202	460-225550-2	ACETONE	12/29/2020		Y	N	U	UJ	UJ	0.0069	0.0066	mg/kg
EP-2-202	460-225550-2	METHYL ETHYL KETONE (2-BUTANONE)	12/29/2020		Y	N	U	UJ	UJ	0.0058	0.00042	mg/kg
EP-2-202	460-225550-2	DICHLORODIFLUOROMETHANE	12/29/2020		Y	N	U		U	0.0012	0.00039	mg/kg
EP-2-202	460-225550-2	TRICHLOROETHYLENE (TCE)	12/29/2020		Y	N	U		U	0.0012	0.00037	mg/kg

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EP-2-202	460-225550-2	Isopropylbenzene (Cumene)	12/29/2020		Y	N	U		U	0.0012	0.00033	mg/kg
EP-2-202	460-225550-2	ETHYLBENZENE	12/29/2020		Y	N	U		U	0.0012	0.00023	mg/kg
EP-2-202	460-225550-2	DIBROMOCHLOROMETHANE	12/29/2020		Y	N	U		U	0.0012	0.00022	mg/kg
EP-2-202	460-225550-2	METHYLCYCLOHEXANE	12/29/2020		Y	N	U		U	0.0012	0.00058	mg/kg
EP-2-202	460-225550-2	TETRACHLOROETHYLENE(PCE)	12/29/2020	0.00086	Y	Y	J		J	0.0012	0.00035	mg/kg
EP-2-202	460-225550-2	TOLUENE	12/29/2020	0.00059	Y	Y	J		J	0.0012	0.00027	mg/kg
EP-2-202	460-225550-2	CYCLOHEXANE	12/29/2020		Y	N	U		U	0.0012	0.00026	mg/kg
EP-2-202	460-225550-2	TRANS-1,3-DICHLOROPROPENE	12/29/2020		Y	N	U		U	0.0012	0.00031	mg/kg
EP-2-202	460-225550-2	TRICHLOROFLUOROMETHANE	12/29/2020		Y	N	U		U	0.0012	0.00047	mg/kg
EP-2-202	460-225550-2	2-HEXANONE	12/29/2020		Y	N	U	UJ	UJ	0.0058	0.0020	mg/kg
EP-2-202	460-225550-2	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	12/29/2020		Y	N	U	UJ	UJ	0.0058	0.0018	mg/kg
EP-2-202	460-225550-2	VINYL CHLORIDE	12/29/2020		Y	N	U	UJ	UJ	0.0012	0.00063	mg/kg
EP-2-202	460-225550-2	METHYL ACETATE	12/29/2020		Y	N	UT	UJ	UJ	0.0058	0.0050	mg/kg
EP-2-202	460-225550-2	CARBON DISULFIDE	12/29/2020		Y	N	UT	UJ	UJ	0.0012	0.00031	mg/kg
EP-2-202	460-225550-2	1,1,2,2-TETRACHLOROETHANE	12/29/2020		Y	N	UT		U	0.0012	0.00025	mg/kg
EP-2-202	460-225550-2	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	12/29/2020		Y	N	U		U	0.0012	0.00035	mg/kg
EP-2-202	460-225550-2	TRANS-1,2-DICHLOROETHENE	12/29/2020		Y	N	U		U	0.0012	0.00028	mg/kg
EP-2-202	460-225550-2	1,4-DICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0012	0.00026	mg/kg
EP-2-202	460-225550-2	1,2,3-TRICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0012	0.00021	mg/kg
EP-2-202	460-225550-2	BROMOMETHANE	12/29/2020		Y	N	U	UJ	UJ	0.0023	0.0012	mg/kg
EP-2-202	460-225550-2	1,2,4-TRICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0012	0.00041	mg/kg
EP-2-202	460-225550-2	1,1-DICHLOROETHANE	12/29/2020		Y	N	U		U	0.0012	0.00024	mg/kg
EP-2-202	460-225550-2	1,1,2-TRICHLOROETHANE	12/29/2020		Y	N	U		U	0.0012	0.00021	mg/kg
EP-2-202	460-225550-2	1,1,1-TRICHLOROETHANE	12/29/2020		Y	N	U		U	0.0012	0.00027	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EP-2-202	460-225550-2	M,P-XYLENES	12/29/2020		Y	N	U		U	0.0012	0.00020	mg/kg
EP-2-202	460-225550-2	CIS-1,3-DICHLOROPROPENE	12/29/2020		Y	N	U		U	0.0012	0.00032	mg/kg
EP-2-202	460-225550-2	1,2-DIBROMO-3-CHLOROPROPANE	12/29/2020		Y	N	U		U	0.0012	0.00053	mg/kg
EP-2-202	460-225550-2	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	12/29/2020		Y	N	U		U	0.0012	0.00021	mg/kg
EP-2-202	460-225550-2	1,2-DICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0012	0.00042	mg/kg
EP-2-202	460-225550-2	1,2-DICHLOROETHANE	12/29/2020		Y	N	U		U	0.0012	0.00034	mg/kg
EP-2-202	460-225550-2	1,1-DICHLOROETHENE	12/29/2020		Y	N	U		U	0.0012	0.00026	mg/kg
EP-2-202	460-225550-2	1,3-DICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0012	0.00042	mg/kg
EP-2-202	460-225550-2	Cis-1,2-Dichloroethylene	12/29/2020		Y	N	U		U	0.0012	0.00041	mg/kg
EP-2-202	460-225550-2	CHLOROMETHANE	12/29/2020		Y	N	U		U	0.0012	0.00050	mg/kg
EP-2-202	460-225550-2	BENZENE	12/29/2020		Y	N	U		U	0.0012	0.00030	mg/kg
EP-2-202	460-225550-2	BROMOCHLOROMETHANE	12/29/2020		Y	N	U		U	0.0012	0.00032	mg/kg
EP-2-202	460-225550-2	BROMODICHLOROMETHANE	12/29/2020		Y	N	U		U	0.0012	0.00030	mg/kg
EP-2-202	460-225550-2	BROMOFORM	12/29/2020		Y	N	U		U	0.0012	0.00049	mg/kg
EP-2-202	460-225550-2	CHLOROFORM	12/29/2020		Y	N	U		U	0.0012	0.0011	mg/kg
EP-2-202	460-225550-2	CARBON TETRACHLORIDE	12/29/2020		Y	N	U		U	0.0012	0.00045	mg/kg
EP-2-202	460-225550-2	1,4-DIOXANE (P-DIOXANE)	12/29/2020		Y	N	U		U	0.023	0.011	mg/kg
EP-2-202	460-225550-2	1,2-DICHLOROPROPANE	12/29/2020		Y	N	U		U	0.0012	0.00049	mg/kg
EP-2-202	460-225550-2	CHLOROBENZENE	12/29/2020		Y	N	U		U	0.0012	0.00020	mg/kg
EP-2-202	460-225550-2	CHLOROETHANE	12/29/2020		Y	N	U		U	0.0012	0.00060	mg/kg
EP-5-202	460-225550-3	TRICHLOROETHYLENE (TCE)	12/29/2020		Y	N	U		U	0.0010	0.00033	mg/kg
EP-5-202	460-225550-3	BROMOMETHANE	12/29/2020		Y	N	U	UJ	UJ	0.0021	0.0010	mg/kg
EP-5-202	460-225550-3	TETRACHLOROETHYLENE(PCE)	12/29/2020		Y	N	U		U	0.0010	0.00031	mg/kg
EP-5-202	460-225550-3	TOLUENE	12/29/2020		Y	N	U		U	0.0010	0.00024	mg/kg
EP-5-202	460-225550-3	TRANS-1,2-DICHLOROETHENE	12/29/2020		Y	N	U		U	0.0010	0.00025	mg/kg

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EP-5-202	460-225550-3	TRANS-1,3-DICHLOROPROPENE	12/29/2020		Y	N	U		U	0.0010	0.00027	mg/kg
EP-5-202	460-225550-3	1,2-DIBROMO-3-CHLOROPROPANE	12/29/2020		Y	N	U		U	0.0010	0.00047	mg/kg
EP-5-202	460-225550-3	TRICHLOROFLUOROMETHANE	12/29/2020		Y	N	U		U	0.0010	0.00042	mg/kg
EP-5-202	460-225550-3	CARBON DISULFIDE	12/29/2020		Y	N	UT	UJ	UJ	0.0010	0.00027	mg/kg
EP-5-202	460-225550-3	METHYL ACETATE	12/29/2020		Y	N	UT	UJ	UJ	0.0051	0.0044	mg/kg
EP-5-202	460-225550-3	BENZENE	12/29/2020		Y	N	U		U	0.0010	0.00027	mg/kg
EP-5-202	460-225550-3	1,4-DIOXANE (P-DIOXANE)	12/29/2020		Y	N	U		U	0.021	0.0094	mg/kg
EP-5-202	460-225550-3	1,4-DICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0010	0.00023	mg/kg
EP-5-202	460-225550-3	1,3-DICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0010	0.00038	mg/kg
EP-5-202	460-225550-3	1,2-DICHLOROPROPANE	12/29/2020		Y	N	U		U	0.0010	0.00043	mg/kg
EP-5-202	460-225550-3	1,2-DICHLOROETHANE	12/29/2020		Y	N	U		U	0.0010	0.00030	mg/kg
EP-5-202	460-225550-3	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	12/29/2020		Y	N	U		U	0.0010	0.00018	mg/kg
EP-5-202	460-225550-3	1,2,3-TRICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0010	0.00019	mg/kg
EP-5-202	460-225550-3	1,2,4-TRICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0010	0.00037	mg/kg
EP-5-202	460-225550-3	TERT-BUTYL METHYL ETHER	12/29/2020		Y	N	U		U	0.0010	0.00053	mg/kg
EP-5-202	460-225550-3	CHLOROFORM	12/29/2020		Y	N	U		U	0.0010	0.0010	mg/kg
EP-5-202	460-225550-3	1,2-DICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0010	0.00037	mg/kg
EP-5-202	460-225550-3	CIS-1,3-DICHLOROPROPENE	12/29/2020		Y	N	U		U	0.0010	0.00028	mg/kg
EP-5-202	460-225550-3	Cis-1,2-Dichloroethylene	12/29/2020		Y	N	U		U	0.0010	0.00037	mg/kg
EP-5-202	460-225550-3	1,1-DICHLOROETHANE	12/29/2020		Y	N	U		U	0.0010	0.00021	mg/kg
EP-5-202	460-225550-3	STYRENE	12/29/2020		Y	N	U		U	0.0010	0.00029	mg/kg
EP-5-202	460-225550-3	1,1,2-TRICHLOROETHANE	12/29/2020		Y	N	U		U	0.0010	0.00018	mg/kg
EP-5-202	460-225550-3	1,1,1-TRICHLOROETHANE	12/29/2020		Y	N	U		U	0.0010	0.00024	mg/kg
EP-5-202	460-225550-3	1,1,2,2-TETRACHLOROETHANE	12/29/2020		Y	N	UT		U	0.0010	0.00022	mg/kg
EP-5-202	460-225550-3	1,1-DICHLOROETHENE	12/29/2020		Y	N	U		U	0.0010	0.00023	mg/kg

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EP-5-202	460-225550-3	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	12/29/2020		Y	N	U		U	0.0010	0.00031	mg/kg
EP-5-202	460-225550-3	2-HEXANONE	12/29/2020		Y	N	U	UJ	UJ	0.0051	0.0018	mg/kg
EP-5-202	460-225550-3	CHLOROBENZENE	12/29/2020		Y	N	U		U	0.0010	0.00018	mg/kg
EP-5-202	460-225550-3	BROMODICHLOROMETHANE	12/29/2020		Y	N	U		U	0.0010	0.00026	mg/kg
EP-5-202	460-225550-3	BROMOFORM	12/29/2020		Y	N	U		U	0.0010	0.00044	mg/kg
EP-5-202	460-225550-3	ACETONE	12/29/2020		Y	N	U	UJ	UJ	0.0062	0.0059	mg/kg
EP-5-202	460-225550-3	BROMOCHLOROMETHANE	12/29/2020		Y	N	U		U	0.0010	0.00029	mg/kg
EP-5-202	460-225550-3	Isopropylbenzene (Cumene)	12/29/2020		Y	N	U		U	0.0010	0.00029	mg/kg
EP-5-202	460-225550-3	O-XYLENE (1,2-DIMETHYLBENZENE)	12/29/2020		Y	N	U		U	0.0010	0.00020	mg/kg
EP-5-202	460-225550-3	METHYLENE CHLORIDE	12/29/2020		Y	N	U		U	0.0021	0.0012	mg/kg
EP-5-202	460-225550-3	METHYLCYCLOHEXANE	12/29/2020		Y	N	U		U	0.0010	0.00051	mg/kg
EP-5-202	460-225550-3	VINYL CHLORIDE	12/29/2020		Y	N	U	UJ	UJ	0.0010	0.00056	mg/kg
EP-5-202	460-225550-3	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	12/29/2020		Y	N	U	UJ	UJ	0.0051	0.0016	mg/kg
EP-5-202	460-225550-3	M,P-XYLENES	12/29/2020		Y	N	U		U	0.0010	0.00018	mg/kg
EP-5-202	460-225550-3	CARBON TETRACHLORIDE	12/29/2020		Y	N	U		U	0.0010	0.00040	mg/kg
EP-5-202	460-225550-3	ETHYLBENZENE	12/29/2020		Y	N	U		U	0.0010	0.00020	mg/kg
EP-5-202	460-225550-3	DICHLORODIFLUOROMETHANE	12/29/2020		Y	N	U		U	0.0010	0.00035	mg/kg
EP-5-202	460-225550-3	CHLOROETHANE	12/29/2020		Y	N	U		U	0.0010	0.00054	mg/kg
EP-5-202	460-225550-3	DIBROMOCHLOROMETHANE	12/29/2020		Y	N	U		U	0.0010	0.00020	mg/kg
EP-5-202	460-225550-3	CYCLOHEXANE	12/29/2020		Y	N	U		U	0.0010	0.00023	mg/kg
EP-5-202	460-225550-3	CHLOROMETHANE	12/29/2020		Y	N	U		U	0.0010	0.00045	mg/kg
EP-5-202	460-225550-3	METHYL ETHYL KETONE (2-BUTANONE)	12/29/2020		Y	N	U	UJ	UJ	0.0051	0.00038	mg/kg
EP-7-202	460-225550-4	DIBROMOCHLOROMETHANE	12/29/2020		Y	N	U		U	0.0010	0.00020	mg/kg
EP-7-202	460-225550-4	1,1,2,2-TETRACHLOROETHANE	12/29/2020		Y	N	UT		U	0.0010	0.00022	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EP-7-202	460-225550-4	O-XYLENE (1,2-DIMETHYLBENZENE)	12/29/2020		Y	N	U		U	0.0010	0.00020	mg/kg
EP-7-202	460-225550-4	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	12/29/2020		Y	N	U		U	0.0010	0.00031	mg/kg
EP-7-202	460-225550-4	CIS-1,3-DICHLOROPROPENE	12/29/2020		Y	N	U		U	0.0010	0.00028	mg/kg
EP-7-202	460-225550-4	Cis-1,2-Dichloroethylene	12/29/2020		Y	N	U		U	0.0010	0.00037	mg/kg
EP-7-202	460-225550-4	CHLOROMETHANE	12/29/2020		Y	N	U		U	0.0010	0.00045	mg/kg
EP-7-202	460-225550-4	CYCLOHEXANE	12/29/2020		Y	N	U		U	0.0010	0.00023	mg/kg
EP-7-202	460-225550-4	TERT-BUTYL METHYL ETHER	12/29/2020		Y	N	U		U	0.0010	0.00053	mg/kg
EP-7-202	460-225550-4	BROMOMETHANE	12/29/2020		Y	N	U	UJ	UJ	0.0021	0.0010	mg/kg
EP-7-202	460-225550-4	TRICHLOROFLUOROMETHANE	12/29/2020		Y	N	U		U	0.0010	0.00042	mg/kg
EP-7-202	460-225550-4	TRICHLOROETHYLENE (TCE)	12/29/2020		Y	N	U		U	0.0010	0.00033	mg/kg
EP-7-202	460-225550-4	TRANS-1,3-DICHLOROPROPENE	12/29/2020		Y	N	U		U	0.0010	0.00027	mg/kg
EP-7-202	460-225550-4	CHLOROFORM	12/29/2020		Y	N	U		U	0.0010	0.0010	mg/kg
EP-7-202	460-225550-4	CARBON DISULFIDE	12/29/2020		Y	N	UT	UJ	UJ	0.0010	0.00027	mg/kg
EP-7-202	460-225550-4	TRANS-1,2-DICHLOROETHENE	12/29/2020		Y	N	U		U	0.0010	0.00025	mg/kg
EP-7-202	460-225550-4	METHYLCYCLOHEXANE	12/29/2020		Y	N	U		U	0.0010	0.00051	mg/kg
EP-7-202	460-225550-4	TETRACHLOROETHYLENE(PCE)	12/29/2020	0.00089	Y	Y	J		J	0.0010	0.00031	mg/kg
EP-7-202	460-225550-4	DICHLORODIFLUOROMETHANE	12/29/2020		Y	N	U		U	0.0010	0.00035	mg/kg
EP-7-202	460-225550-4	STYRENE	12/29/2020		Y	N	U		U	0.0010	0.00029	mg/kg
EP-7-202	460-225550-4	METHYLENE CHLORIDE	12/29/2020		Y	N	U		U	0.0021	0.0012	mg/kg
EP-7-202	460-225550-4	VINYL CHLORIDE	12/29/2020		Y	N	U	UJ	UJ	0.0010	0.00056	mg/kg
EP-7-202	460-225550-4	M,P-XYLENES	12/29/2020		Y	N	U		U	0.0010	0.00018	mg/kg
EP-7-202	460-225550-4	Isopropylbenzene (Cumene)	12/29/2020		Y	N	U		U	0.0010	0.00029	mg/kg
EP-7-202	460-225550-4	METHYL ACETATE	12/29/2020		Y	N	UT	UJ	UJ	0.0051	0.0044	mg/kg
EP-7-202	460-225550-4	ETHYLBENZENE	12/29/2020		Y	N	U		U	0.0010	0.00020	mg/kg
EP-7-202	460-225550-4	TOLUENE	12/29/2020		Y	N	U		U	0.0010	0.00024	mg/kg

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EP-7-202	460-225550-4	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	12/29/2020		Y	N	U		U	0.0010	0.00018	mg/kg
EP-7-202	460-225550-4	1,1-DICHLOROETHANE	12/29/2020		Y	N	U		U	0.0010	0.00021	mg/kg
EP-7-202	460-225550-4	1,1-DICHLOROETHENE	12/29/2020		Y	N	U		U	0.0010	0.00023	mg/kg
EP-7-202	460-225550-4	1,2,3-TRICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0010	0.00019	mg/kg
EP-7-202	460-225550-4	1,2,4-TRICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0010	0.00037	mg/kg
EP-7-202	460-225550-4	CHLOROETHANE	12/29/2020		Y	N	U		U	0.0010	0.00054	mg/kg
EP-7-202	460-225550-4	BROMOFORM	12/29/2020		Y	N	U		U	0.0010	0.00044	mg/kg
EP-7-202	460-225550-4	1,2-DIBROMO-3-CHLOROPROPANE	12/29/2020		Y	N	U		U	0.0010	0.00047	mg/kg
EP-7-202	460-225550-4	1,2-DICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0010	0.00037	mg/kg
EP-7-202	460-225550-4	1,2-DICHLOROETHANE	12/29/2020		Y	N	U		U	0.0010	0.00030	mg/kg
EP-7-202	460-225550-4	1,2-DICHLOROPROPANE	12/29/2020		Y	N	U		U	0.0010	0.00043	mg/kg
EP-7-202	460-225550-4	1,3-DICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0010	0.00037	mg/kg
EP-7-202	460-225550-4	1,4-DICHLOROBENZENE	12/29/2020		Y	N	U		U	0.0010	0.00023	mg/kg
EP-7-202	460-225550-4	1,4-DIOXANE (P-DIOXANE)	12/29/2020		Y	N	U		U	0.021	0.0094	mg/kg
EP-7-202	460-225550-4	BROMOCHLOROMETHANE	12/29/2020		Y	N	U		U	0.0010	0.00029	mg/kg
EP-7-202	460-225550-4	CHLOROBENZENE	12/29/2020		Y	N	U		U	0.0010	0.00018	mg/kg
EP-7-202	460-225550-4	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	12/29/2020		Y	N	U	UJ	UJ	0.0051	0.0016	mg/kg
EP-7-202	460-225550-4	1,1,1-TRICHLOROETHANE	12/29/2020		Y	N	U		U	0.0010	0.00024	mg/kg
EP-7-202	460-225550-4	METHYL ETHYL KETONE (2-BUTANONE)	12/29/2020		Y	N	U	UJ	UJ	0.0051	0.00038	mg/kg
EP-7-202	460-225550-4	BENZENE	12/29/2020		Y	N	U		U	0.0010	0.00026	mg/kg
EP-7-202	460-225550-4	ACETONE	12/29/2020		Y	N	U	UJ	UJ	0.0062	0.0059	mg/kg
EP-7-202	460-225550-4	2-HEXANONE	12/29/2020		Y	N	U	UJ	UJ	0.0051	0.0018	mg/kg
EP-7-202	460-225550-4	1,1,2-TRICHLOROETHANE	12/29/2020		Y	N	U		U	0.0010	0.00018	mg/kg
EP-7-202	460-225550-4	BROMODICHLOROMETHANE	12/29/2020		Y	N	U		U	0.0010	0.00026	mg/kg

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EP-7-202	460-225550-4	CARBON TETRACHLORIDE	12/29/2020		Y	N	U		U	0.0010	0.00040	mg/kg
FB20201	460-225550-9	Cis-1,2-Dichloroethylene	12/31/2020		Y	N	U		U	1.0	0.22	ug/l
FB20201	460-225550-9	Isopropylbenzene (Cumene)	12/31/2020		Y	N	U		U	1.0	0.34	ug/l
FB20201	460-225550-9	ETHYLBENZENE	12/31/2020		Y	N	U		U	1.0	0.30	ug/l
FB20201	460-225550-9	DICHLORODIFLUOROMETHANE	12/31/2020		Y	N	U		U	1.0	0.31	ug/l
FB20201	460-225550-9	DIBROMOCHLOROMETHANE	12/31/2020		Y	N	U		U	1.0	0.28	ug/l
FB20201	460-225550-9	CIS-1,3-DICHLOROPROPENE	12/31/2020		Y	N	U		U	1.0	0.22	ug/l
FB20201	460-225550-9	METHYLCYCLOHEXANE	12/31/2020		Y	N	U		U	1.0	0.71	ug/l
FB20201	460-225550-9	CHLOROMETHANE	12/31/2020		Y	N	U		U	1.0	0.40	ug/l
FB20201	460-225550-9	CHLOROFORM	12/31/2020		Y	N	U		U	1.0	0.33	ug/l
FB20201	460-225550-9	CHLOROETHANE	12/31/2020		Y	N	U		U	1.0	0.32	ug/l
FB20201	460-225550-9	CYCLOHEXANE	12/31/2020		Y	N	U		U	1.0	0.32	ug/l
FB20201	460-225550-9	M,P-XYLENES	12/31/2020		Y	N	U		U	1.0	0.30	ug/l
FB20201	460-225550-9	TETRACHLOROETHYLENE(PCE)	12/31/2020		Y	N	U		U	1.0	0.25	ug/l
FB20201	460-225550-9	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	12/31/2020		Y	N	U			1.0	0.31	ug/l
FB20201	460-225550-9	METHYLENE CHLORIDE	12/31/2020		Y	N	U		U	1.0	0.32	ug/l
FB20201	460-225550-9	O-XYLENE (1,2-DIMETHYLBENZENE)	12/31/2020		Y	N	U		U	1.0	0.36	ug/l
FB20201	460-225550-9	STYRENE	12/31/2020		Y	N	U		U	1.0	0.42	ug/l
FB20201	460-225550-9	TERT-BUTYL METHYL ETHER	12/31/2020		Y	N	U		U	1.0	0.22	ug/l
FB20201	460-225550-9	CHLOROBENZENE	12/31/2020		Y	N	U		U	1.0	0.38	ug/l
FB20201	460-225550-9	1,1,2,2-TETRACHLOROETHANE	12/31/2020		Y	N	U	UJ	UJ	1.0	0.37	ug/l
FB20201	460-225550-9	METHYL ACETATE	12/31/2020		Y	N	UT	UJ	UJ	5.0	0.79	ug/l
FB20201	460-225550-9	2-HEXANONE	12/31/2020		Y	N	U	UJ	UJ	5.0	1.1	ug/l
FB20201	460-225550-9	TOLUENE	12/31/2020		Y	N	U		U	1.0	0.38	ug/l
FB20201	460-225550-9	TRANS-1,2-DICHLOROETHENE	12/31/2020		Y	N	U		U	1.0	0.24	ug/l

SDG: 4602255501

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
FB20201	460-225550-9	BROMOMETHANE	12/31/2020		Y	N	U		U	1.0	0.55	ug/l
FB20201	460-225550-9	METHYL ETHYL KETONE (2-BUTANONE)	12/31/2020		Y	N	U		U	5.0	1.9	ug/l
FB20201	460-225550-9	1,1-DICHLOROETHENE	12/31/2020		Y	N	U		U	1.0	0.26	ug/l
FB20201	460-225550-9	CARBON TETRACHLORIDE	12/31/2020		Y	N	U		U	1.0	0.21	ug/l
FB20201	460-225550-9	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	12/31/2020		Y	N	U		U	5.0	1.3	ug/l
FB20201	460-225550-9	VINYL CHLORIDE	12/31/2020		Y	N	U		U	1.0	0.17	ug/l
FB20201	460-225550-9	TRICHLOROETHYLENE (TCE)	12/31/2020		Y	N	U		U	1.0	0.31	ug/l
FB20201	460-225550-9	TRANS-1,3-DICHLOROPROPENE	12/31/2020		Y	N	U		U	1.0	0.22	ug/l
FB20201	460-225550-9	1,1,1-TRICHLOROETHANE	12/31/2020		Y	N	U		U	1.0	0.24	ug/l
FB20201	460-225550-9	1,1-DICHLOROETHANE	12/31/2020		Y	N	U		U	1.0	0.26	ug/l
FB20201	460-225550-9	TRICHLOROFLUOROMETHANE	12/31/2020		Y	N	U		U	1.0	0.32	ug/l
FB20201	460-225550-9	1,2,3-TRICHLOROBENZENE	12/31/2020		Y	N	U		U	1.0	0.36	ug/l
FB20201	460-225550-9	1,2,4-TRICHLOROBENZENE	12/31/2020		Y	N	U		U	1.0	0.37	ug/l
FB20201	460-225550-9	1,2-DIBROMO-3-CHLOROPROPANE	12/31/2020		Y	N	U		U	1.0	0.38	ug/l
FB20201	460-225550-9	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	12/31/2020		Y	N	U		U	1.0	0.50	ug/l
FB20201	460-225550-9	ACETONE	12/31/2020		Y	N	U		U	5.0	4.4	ug/l
FB20201	460-225550-9	BROMODICHLOROMETHANE	12/31/2020		Y	N	U		U	1.0	0.34	ug/l
FB20201	460-225550-9	1,1,2-TRICHLOROETHANE	12/31/2020		Y	N	U		U	1.0	0.20	ug/l
FB20201	460-225550-9	BROMOFORM	12/31/2020		Y	N	U		U	1.0	0.54	ug/l
FB20201	460-225550-9	1,2-DICHLOROBENZENE	12/31/2020		Y	N	U		U	1.0	0.21	ug/l
FB20201	460-225550-9	BENZENE	12/31/2020		Y	N	U		U	1.0	0.20	ug/l
FB20201	460-225550-9	BROMOCHLOROMETHANE	12/31/2020		Y	N	U		U	1.0	0.41	ug/l
FB20201	460-225550-9	CARBON DISULFIDE	12/31/2020		Y	N	U		U	1.0	0.82	ug/l
FB20201	460-225550-9	1,4-DIOXANE (P-DIOXANE)	12/31/2020		Y	N	U		U	50	28	ug/l

SDG: 4602255501

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
FB20201	460-225550-9	1,4-DICHLOROBENZENE	12/31/2020		Y	N	U		U	1.0	0.33	ug/l
FB20201	460-225550-9	1,3-DICHLOROBENZENE	12/31/2020		Y	N	U		U	1.0	0.34	ug/l
FB20201	460-225550-9	1,2-DICHLOROPROPANE	12/31/2020		Y	N	U		U	1.0	0.35	ug/l
FB20201	460-225550-9	1,2-DICHLOROETHANE	12/31/2020		Y	N	U		U	1.0	0.43	ug/l
Trip Blank	460-225550-10	O-XYLENE (1,2-DIMETHYLBENZENE)	12/31/2020		Y	N	U		U	1.0	0.36	ug/l
Trip Blank	460-225550-10	STYRENE	12/31/2020		Y	N	U		U	1.0	0.42	ug/l
Trip Blank	460-225550-10	TERT-BUTYL METHYL ETHER	12/31/2020		Y	N	U		U	1.0	0.22	ug/l
Trip Blank	460-225550-10	METHYLENE CHLORIDE	12/31/2020		Y	N	U		U	1.0	0.32	ug/l
Trip Blank	460-225550-10	METHYLCYCLOHEXANE	12/31/2020		Y	N	U		U	1.0	0.71	ug/l
Trip Blank	460-225550-10	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	12/31/2020		Y	N	U		U	5.0	1.3	ug/l
Trip Blank	460-225550-10	METHYL ACETATE	12/31/2020		Y	N	UT	UJ	UJ	5.0	0.79	ug/l
Trip Blank	460-225550-10	M,P-XYLENES	12/31/2020		Y	N	U		U	1.0	0.30	ug/l
Trip Blank	460-225550-10	TETRACHLOROETHYLENE(PCE)	12/31/2020		Y	N	U		U	1.0	0.25	ug/l
Trip Blank	460-225550-10	METHYL ETHYL KETONE (2-BUTANONE)	12/31/2020		Y	N	U		U	5.0	1.9	ug/l
Trip Blank	460-225550-10	TOLUENE	12/31/2020		Y	N	U		U	1.0	0.38	ug/l
Trip Blank	460-225550-10	TRANS-1,2-DICHLOROETHENE	12/31/2020		Y	N	U		U	1.0	0.24	ug/l
Trip Blank	460-225550-10	TRANS-1,3-DICHLOROPROPENE	12/31/2020		Y	N	U		U	1.0	0.22	ug/l
Trip Blank	460-225550-10	TRICHLOROETHYLENE (TCE)	12/31/2020		Y	N	U		U	1.0	0.31	ug/l
Trip Blank	460-225550-10	TRICHLOROFLUOROMETHANE	12/31/2020		Y	N	U		U	1.0	0.32	ug/l
Trip Blank	460-225550-10	VINYL CHLORIDE	12/31/2020		Y	N	U		U	1.0	0.17	ug/l
Trip Blank	460-225550-10	1,1-DICHLOROETHANE	12/31/2020		Y	N	U		U	1.0	0.26	ug/l
Trip Blank	460-225550-10	1,1,2-TRICHLOROETHANE	12/31/2020		Y	N	U		U	1.0	0.20	ug/l
Trip Blank	460-225550-10	1,1,1-TRICHLOROETHANE	12/31/2020		Y	N	U		U	1.0	0.24	ug/l
Trip Blank	460-225550-10	Isopropylbenzene (Cumene)	12/31/2020		Y	N	U		U	1.0	0.34	ug/l

SDG: 4602255501

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
Trip Blank	460-225550-10	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	12/31/2020		Y	N	U			1.0	0.31	ug/l
Trip Blank	460-225550-10	CARBON DISULFIDE	12/31/2020		Y	N	U		U	1.0	0.82	ug/l
Trip Blank	460-225550-10	1,1,2,2-TETRACHLOROETHANE	12/31/2020		Y	N	U	UJ	UJ	1.0	0.37	ug/l
Trip Blank	460-225550-10	2-HEXANONE	12/31/2020		Y	N	U	UJ	UJ	5.0	1.1	ug/l
Trip Blank	460-225550-10	BROMOCHLOROMETHANE	12/31/2020		Y	N	U		U	1.0	0.41	ug/l
Trip Blank	460-225550-10	1,2,4-TRICHLOROBENZENE	12/31/2020		Y	N	U		U	1.0	0.37	ug/l
Trip Blank	460-225550-10	1,2,3-TRICHLOROBENZENE	12/31/2020		Y	N	U		U	1.0	0.36	ug/l
Trip Blank	460-225550-10	1,2-DIBROMO-3-CHLOROPROPANE	12/31/2020		Y	N	U		U	1.0	0.38	ug/l
Trip Blank	460-225550-10	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	12/31/2020		Y	N	U		U	1.0	0.50	ug/l
Trip Blank	460-225550-10	1,2-DICHLOROBENZENE	12/31/2020		Y	N	U		U	1.0	0.21	ug/l
Trip Blank	460-225550-10	1,2-DICHLOROETHANE	12/31/2020		Y	N	U		U	1.0	0.43	ug/l
Trip Blank	460-225550-10	1,2-DICHLOROPROPANE	12/31/2020		Y	N	U		U	1.0	0.35	ug/l
Trip Blank	460-225550-10	1,3-DICHLOROBENZENE	12/31/2020		Y	N	U		U	1.0	0.34	ug/l
Trip Blank	460-225550-10	1,4-DICHLOROBENZENE	12/31/2020		Y	N	U		U	1.0	0.33	ug/l
Trip Blank	460-225550-10	1,4-DIOXANE (P-DIOXANE)	12/31/2020		Y	N	U		U	50	28	ug/l
Trip Blank	460-225550-10	1,1-DICHLOROETHENE	12/31/2020		Y	N	U		U	1.0	0.26	ug/l
Trip Blank	460-225550-10	CHLOROBENZENE	12/31/2020		Y	N	U		U	1.0	0.38	ug/l
Trip Blank	460-225550-10	BENZENE	12/31/2020		Y	N	U		U	1.0	0.20	ug/l
Trip Blank	460-225550-10	ETHYLBENZENE	12/31/2020		Y	N	U		U	1.0	0.30	ug/l
Trip Blank	460-225550-10	BROMODICHLOROMETHANE	12/31/2020		Y	N	U		U	1.0	0.34	ug/l
Trip Blank	460-225550-10	BROMOFORM	12/31/2020		Y	N	U		U	1.0	0.54	ug/l
Trip Blank	460-225550-10	BROMOMETHANE	12/31/2020		Y	N	U		U	1.0	0.55	ug/l
Trip Blank	460-225550-10	CARBON TETRACHLORIDE	12/31/2020		Y	N	U		U	1.0	0.21	ug/l
Trip Blank	460-225550-10	CHLOROETHANE	12/31/2020		Y	N	U		U	1.0	0.32	ug/l
Trip Blank	460-225550-10	CHLOROFORM	12/31/2020		Y	N	U		U	1.0	0.33	ug/l

SDG: 4602255501

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
Trip Blank	460-225550-10	CHLOROMETHANE	12/31/2020		Y	N	U		U	1.0	0.40	ug/l
Trip Blank	460-225550-10	Cis-1,2-Dichloroethylene	12/31/2020		Y	N	U		U	1.0	0.22	ug/l
Trip Blank	460-225550-10	CIS-1,3-DICHLOROPROPENE	12/31/2020		Y	N	U		U	1.0	0.22	ug/l
Trip Blank	460-225550-10	CYCLOHEXANE	12/31/2020		Y	N	U		U	1.0	0.32	ug/l
Trip Blank	460-225550-10	DIBROMOCHLOROMETHANE	12/31/2020		Y	N	U		U	1.0	0.28	ug/l
Trip Blank	460-225550-10	DICHLORODIFLUOROMETHANE	12/31/2020		Y	N	U		U	1.0	0.31	ug/l
Trip Blank	460-225550-10	ACETONE	12/31/2020		Y	N	U		U	5.0	4.4	ug/l

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

GEI Consultants
110 Walt Whitman Road, Suite 204
Huntington Station, NY 11746
ATTN: Mr. Bill Fitchett
Wfitchett@geiconsultants.com

January 28, 2021

SUBJECT: Long Island City, 30th Street, Data Usability Summary Report.

Dear Mr. Fitchett,

Enclosed is the final validation report for the fraction listed below. This SDG was received on January 8, 2021. Attachment 1 is a summary of the samples that were reviewed for analysis.

LDC Project #50204:

SDG #	**Fraction**
460-225730-1	Volatiles

The data validation was performed under modified Category B guidelines using quality control summaries provided by the laboratory. The analyses were validated using the following documents, as applicable to each method:

- USEPA Region 2 Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-Method 8260B and 8260C, SOP HW-24, Revision 4; October 2014
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, EPA 540-R-2017-002; January 2017
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Christina Rink

Christina Rink
crink@lab-data.com
Project Manager/Senior Chemist

38 pages-ADV EQUIS EDD/ NYDUSR Attachment 1

Category B **LDC #50204 (GEI Consultants, Inc. - Huntington Station, NY / 30th Street, Long Island City, Site No. C241214)**

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260D)																															
Matrix: Water/Soil				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	460-225730-1	01/08/21	01/29/21	2	7																														

Site: Long Island City, 30th Street
Laboratory: Eurofins
Report No.: 460-225730-1
Reviewer: Josephine Go and Christina Rink/Laboratory Data Consultants for GEI Consultants, Inc. – Huntington Station, NY
Date: January 27, 2021

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
SW-13	460-225730-1	VOC
SW-14	460-225730-2	VOC
SW-15	460-225730-3	VOC
SW-16	460-225730-4	VOC
SW-17	460-225730-5	VOC
EP-6	460-225730-6	VOC
EP-10	460-225730-7	VOC
FB20201230	460-225730-8	VOC
Trip Blank	460-225730-9	VOC

Associated QC Samples(s):
Field/Trip Blanks: Trip Blank, FB20201230
Field Duplicate pair: None Associated

The above-listed soil and water samples were collected on December 30, 2020 and were analyzed for volatile organic compounds (VOCs) by SW-846 method 8260D. The data validation was performed in accordance with the USEPA Region 2 *Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-Method 8260B and 8260C,* SOP HW-24, Revision 4 (October 2014) and the USEPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,* EPA 540-R-2017-002 (January 2017), modified as necessary to accommodate the non-CLP methodologies used.

The organic data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) Tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Control Sample (LCS) Results
- Internal Standards
- Field Duplicate Results
- Moisture Content
- Quantitation Limits and Data Assessment
- Sample Quantitation and Compound Identification

Overall Evaluation of Data and Potential Usability Issues

All results are usable as reported or usable with minor qualification due to laboratory quality control outliers.

The validation findings were based on the following information.

Data Completeness

The data package was complete as defined under the requirements for the NYSDEC ASP category B laboratory deliverables.

Holding Times and Sample Preservation

All criteria were met.

GC/MS Tunes

All criteria were met.

Initial and Continuing Calibrations

Initial Calibration:

All criteria were met.

Continuing calibration:

Compounds that did not meet criteria are summarized in the following table.

Date	Standard ID	Compound	CC %D	Associated Samples		Validation Action
01/02/21	N29510	1,2,3-Trichlorobenzene	21.4	FB20201230 Trip Blank	XX	UJ nondetects
01/02/21	K21201	Carbon tetrachloride	24.0	SW-13 SW-14 SW-15 SW-16 SW-17 EP-6 EP-10	XX	UJ nondetects

X = Initial calibration (IC) relative standard deviation (%RSD) > 20; estimate (J/UJ) positive and nondetect results.
XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ) positive and nondetect results.
SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.
+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The 1,2,3-trichlorobenzene and carbon tetrachloride results were estimated due to continuing calibration exceedances. The bias cannot be determined. The results can be used for project objectives as nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Blanks

Contamination was not detected in the method blanks.

No positive results were found in the trip blank sample Trip Blank and field blank sample FB20201230 for VOC analysis.

Surrogate Recoveries

All criteria were met.

MS/MSD Results

MS/MSD analyses were not associated with this sample set. Validation action was not required on this basis.

LCS Results

All criteria were met.

Internal Standards

All criteria were met.

Field Duplicate Results

A field duplicate pair was not associated with this sample set. Validation action was not required on this basis.

Moisture Content

All criteria were met.

Quantitation Limits and Data Assessment

Results were reported which were below the reporting limit (RL) and above the method detection limit (MDL) in the VOC analysis. These results were qualified as estimated (J) by the laboratory.

Dilutions were not required for VOC analysis.

Sample Quantitation and Compound Identification

Calculations were spot-checked; no discrepancies were noted.

DATA VALIDATION QUALIFIERS

U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.

J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.

JN - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.

R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

LDC #: 50204A1a
SDG #: 460-225730-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Category B

Date: 01/22/21
Page: 1 of 1
Reviewer: JM
2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	ICAL ≤ 20% ICV ≤ 30%
IV.	Continuing calibration	SW	CCV ≤ 20%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	FB = 8 TB = 9
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	A	LCS/D
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	Results <RL > MDL = J dets
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	SW-13	460-225730-1	Soil	12/30/20
2	SW-14	460-225730-2	Soil	12/30/20
3	SW-15	460-225730-3	Soil	12/30/20
4	SW-16	460-225730-4	Soil	12/30/20
5	SW-17	460-225730-5	Soil	12/30/20
6	EP-6	460-225730-6	Soil	12/30/20
7	EP-10	460-225730-7	Soil	12/30/20
8	FB20201230	460-225730-8	Water	12/30/20
9	Trip Blank	460-225730-9	Water	12/30/20
10				

Notes:

1	MB 460-750668/7					
2	" -750719/8					
	LB 460-750635/1-A					

LDC #: 50204 A1a

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG

Method: Volatiles (EPA SW 846 Method 8260C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20% and relative response factors (RRF) within method criteria?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 30%?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 20% and relative response factors (RRF) within method criteria?		✓		
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks were identified in this SDG?	✓			
Were target compounds detected in the field blanks?		✓		
VII. Surrogate spikes				
Were all surrogate percent recovery (%R) within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
X. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds detected in the field duplicates?			✓	
XI. Internal standards				
Were internal standard area counts within -50% to +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XII. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data	✓			
Overall assessment of data was found to be acceptable.				

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	AA. Tetrachloroethene	AAA. 1,3,5-Trimethylbenzene	AAAA. Ethyl tert-butyl ether	A1. 1,3-Butadiene	A2.
B. Bromomethane	BB. 1,1,2,2-Tetrachloroethane	BBB. 4-Chlorotoluene	BBBB. tert-Amyl methyl ether	B1. Hexane	B2.
C. Vinyl choride	CC. Toluene	CCC. tert-Butylbenzene	CCCC. 1-Chlorohexane	C1. Heptane	C2.
D. Chloroethane	DD. Chlorobenzene	DDD. 1,2,4-Trimethylbenzene	DDDD. Isopropyl alcohol	D1. Propylene	D2.
E. Methylene chloride	EE. Ethylbenzene	EEE. sec-Butylbenzene	EEEE. Acetonitrile	E1. Freon 11	E2.
F. Acetone	FF. Styrene	FFF. 1,3-Dichlorobenzene	FFFF. Acrolein	F1. Freon 12	F2.
G. Carbon disulfide	GG. Xylenes, total	GGG. p-Isopropyltoluene	GGGG. Acrylonitrile	G1. Freon 113	G2.
H. 1,1-Dichloroethene	HH. Vinyl acetate	HHH. 1,4-Dichlorobenzene	HHHH. 1,4-Dioxane	H1. Freon 114	H2.
I. 1,1-Dichloroethane	II. 2-Chloroethylvinyl ether	III. n-Butylbenzene	IIII. Isobutyl alcohol	I1. 2-Nitropropane	I2.
J. 1,2-Dichloroethene, total	JJ. Dichlorodifluoromethane	JJJ. 1,2-Dichlorobenzene	JJJJ. Methacrylonitrile	J1. Dimethyl disulfide	J2.
K. Chloroform	KK. Trichlorofluoromethane	KKK. 1,2,4-Trichlorobenzene	KKKK. Propionitrile	K1. 2,3-Dimethyl pentane	K2.
L. 1,2-Dichloroethane	LL. Methyl-tert-butyl ether	LLL. Hexachlorobutadiene	LLLL. Ethyl ether	L1. 2,4-Dimethyl pentane	L2.
M. 2-Butanone	MM. 1,2-Dibromo-3-chloropropane	MMM. Naphthalene	MMMM. Benzyl chloride	M1. 3,3-Dimethyl pentane	M2.
N. 1,1,1-Trichloroethane	NN. Methyl ethyl ketone	NNN. 1,2,3-Trichlorobenzene	NNNN. Iodomethane	N1. 2-Methylpentane	N2.
O. Carbon tetrachloride	OO. 2,2-Dichloropropane	OOO. 1,3,5-Trichlorobenzene	OOOO.1,1-Difluoroethane	O1. 3-Methylpentane	O2.
P. Bromodichloromethane	PP. Bromochloromethane	PPP. trans-1,2-Dichloroethene	PPPP. Tetrahydrofuran	P1. 3-Ethylpentane	P2.
Q. 1,2-Dichloropropane	QQ. 1,1-Dichloropropene	QQQ. cis-1,2-Dichloroethene	QQQQ. Methyl acetate	Q1. 2,2-Dimethylpentane	Q2.
R. cis-1,3-Dichloropropene	RR. Dibromomethane	RRR. m,p-Xylenes	RRRR. Ethyl acetate	R1. 2,2,3- Trimethylbutane	R2.
S. Trichloroethene	SS. 1,3-Dichloropropane	SSS. o-Xylene	SSSS. Cyclohexane	S1. 2,2,4-Trimethylpentane	S2.
T. Dibromochloromethane	TT. 1,2-Dibromoethane	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	TTTT. Methylcyclohexane	T1. 2-Methylhexane	T2.
U. 1,1,2-Trichloroethane	UU. 1,1,1,2-Tetrachloroethane	UUU. 1,2-Dichlorotetrafluoroethane	UUUU. Allyl chloride	U1. Nonanal	U2.
V. Benzene	VV. Isopropylbenzene	VVV. 4-Ethyltoluene	VVVV. Methyl methacrylate	V1. 2-Methylnaphthalene	V2.
W. trans-1,3-Dichloropropene	WW. Bromobenzene	WWW. Ethanol	WWWW. Ethyl methacrylate	W1. Methanol	W2.
X. Bromoform	XX. 1,2,3-Trichloropropane	XXX. Di-isopropyl ether	XXXX. cis-1,4-Dichloro-2-butene	X1. 1,2,3-Trimethylbenzene	X2.
Y. 4-Methyl-2-pentanone	YY. n-Propylbenzene	YYY. tert-Butanol	YYYY. trans-1,4-Dichloro-2-butene	Y1. 2-Propanol	Y2.
Z. 2-Hexanone	ZZ. 2-Chlorotoluene	ZZZ. tert-Butyl alcohol	ZZZZ. Pentachloroethane	Z1.	Z2.

LDC #: 50204 A1A

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Y N N/A Were percent differences (%D) ≤20 % and relative response factors (RRF) within the method criteria?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤20.0%)	Finding RRF (Limit)	Associated Samples	Qualifications
	01/02/21	N29510	NNN	21.4		8, 9, MB2 (ND)	J/NJ/A
	01/02/21	K21201	O	24.0		1-7, MB1 (ND)	

Note: * = Ave RRF failed method criteria but within validation criteria

LDC #: 50204A1a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$ — A_x = Area of Compound — A_{is} = Area of associated internal standard

average RRF = sum of the RRFs/number of standards — C_x = Concentration of compound — C_{is} = Concentration of internal standard

%RSD = 100 * (S/X) — S= Standard deviation of the RRFs — X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 50 std)	Recalculated RRF (RRF 50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL CVOAMS11	12/12/2020	2-Butanone (BUT)	0.3133	0.3133	0.3031	0.3031	5.6	5.6
			cis-1,2-DCE (FBZ)	0.3053	0.3053	0.3075	0.3075	8.1	8.1
			1,4-Dioxane (DXE)	0.8910	0.8910	1.0198	1.0198	8.0	8.0
			Tetrachloroethene (CBZ)	0.3200	0.3200	0.3279	0.3279	7.4	7.4
			1,1,2,2-TCA (DCB)	0.8194	0.8194	0.8123	0.8123	3.9	3.9
2	ICAL CVOAMS9	12/15/2020	2-Butanone (BUT)	0.2538	0.2538	0.2691	0.2691	8.0	8.0
			cis-1,2-DCE (FBZ)	0.3821	0.3821	0.3709	0.3709	9.5	9.5
			1,4-Dioxane (DXE)	1.2474	1.2474	1.1057	1.1057	17.4	17.4
			Tetrachloroethene (CBZ)	0.3736	0.3736	0.3558	0.3558	5.9	5.9
			1,1,2,2-TCA (DCB)	1.0168	1.0168	0.9534	0.9534	5.4	5.4

LDC # 50204A1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound	(IS)	Average RRF (Initial)	Reported RRF (CCV)	Recalculated RRF (CCV)	Reported % D	Recalculated %D
1	N29510 CVOAMS11	1/2/2021	2-Butanone	(BUT)	0.3031	0.3230	0.3230	6.6	6.6
			cis-1,2-DCE	(FBZ)	0.3075	0.2945	0.2945	4.2	4.2
			1,4-Dioxane	(DXE)	1.0198	1.1621	1.1621	13.9	14.0
			Tetrachloroethene	(CBZ)	0.3279	0.3409	0.3409	4.0	4.0
			1,1,2,2-TCA	(DCB)	0.8123	0.7628	0.7628	6.1	6.1
2	K21201 CVOAMS9	1/2/2021	2-Butanone	(BUT)	0.2691	0.2597	0.2597	3.5	3.5
			cis-1,2-DCE	(FBZ)	0.3709	0.4069	0.4069	4.5	9.7
			1,4-Dioxane	(DXE)	1.1057	1.2777	1.2777	15.6	15.6
			Tetrachloroethene	(CBZ)	0.3558	0.3752	0.3752	5.5	5.5
			1,1,2,2-TCA	(DCB)	0.9534	0.9017	0.9017	5.4	5.4

LDC #: 50204 A1a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	56.0	58.9	118	118	0
1,2-Dichloroethane-d4		58.1	116	116	
Toluene-d8		50.1	100	100	
Bromofluorobenzene		56.0	112	112	

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 50204A1a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration
SA = Spike added

RPD = | LCSC - LCSDC | * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: LCS ID 460-750668/3,9

Compound	Spike Added (mg/kg)		Spiked Sample Concentration (mg/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
1,1-Dichloroethene	0.020	0.020	0.0219	0.0212	109	109	106	106	3	3
Trichloroethene	|	|	0.0194	0.0189	97	97	94	94	3	3
Benzene	|	|	0.0201	0.0197	100	100	99	99	2	2
Toluene	|	|	0.0193	0.0189	96	96	95	95	2	2
Chlorobenzene	✓	✓	0.0199	0.0193	99	99	96	96	3	3

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 50204A1a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The concentration of the sample was calculated for the compound identified below using the following calculation:

$$\text{Concentration} = \frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 4, PCE

$$\text{Conc.} = \frac{(11535)(50.0)(5\text{mL})}{(448414)(0.3558)(5.90\text{g})(0.892)(1000)}$$

$$= 0.003434$$

$$\approx 0.0034 \text{ mg/kg}$$

#	Sample ID	Compound	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Qualification
	4	PCE	0.0034	0.0034	—

Long Island City, 30th Street - LDC# 50204

SDG: 4602257301

Analytical Method	SW8260											
Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EP-10-20201230	460-225730-7	1,2-DICHLOROPROPANE	1/2/2021		Y	N	U		U	0.00098	0.00041	mg/kg
EP-10-20201230	460-225730-7	1,1,2,2-TETRACHLOROETHANE	1/2/2021		Y	N	U		U	0.00098	0.00021	mg/kg
EP-10-20201230	460-225730-7	CARBON DISULFIDE	1/2/2021		Y	N	U		U	0.00098	0.00026	mg/kg
EP-10-20201230	460-225730-7	BROMOMETHANE	1/2/2021		Y	N	U		U	0.0020	0.00098	mg/kg
EP-10-20201230	460-225730-7	BROMOFORM	1/2/2021		Y	N	U		U	0.00098	0.00041	mg/kg
EP-10-20201230	460-225730-7	BROMODICHLOROMETHANE	1/2/2021		Y	N	U		U	0.00098	0.00025	mg/kg
EP-10-20201230	460-225730-7	BROMOCHLOROMETHANE	1/2/2021		Y	N	U		U	0.00098	0.00027	mg/kg
EP-10-20201230	460-225730-7	BENZENE	1/2/2021		Y	N	U		U	0.00098	0.00025	mg/kg
EP-10-20201230	460-225730-7	ACETONE	1/2/2021	0.020	Y	Y				0.0059	0.0056	mg/kg
EP-10-20201230	460-225730-7	2-HEXANONE	1/2/2021		Y	N	U		U	0.0049	0.0017	mg/kg
EP-10-20201230	460-225730-7	1,4-DIOXANE (P-DIOXANE)	1/2/2021		Y	N	U		U	0.020	0.0090	mg/kg
EP-10-20201230	460-225730-7	CHLOROBENZENE	1/2/2021		Y	N	U		U	0.00098	0.00017	mg/kg
EP-10-20201230	460-225730-7	1,3-DICHLOROBENZENE	1/2/2021		Y	N	U		U	0.00098	0.00036	mg/kg
EP-10-20201230	460-225730-7	1,2-DICHLOROBENZENE	1/2/2021		Y	N	U		U	0.00098	0.00035	mg/kg
EP-10-20201230	460-225730-7	1,2-DICHLOROETHANE	1/2/2021		Y	N	U		U	0.00098	0.00029	mg/kg
EP-10-20201230	460-225730-7	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	1/2/2021		Y	N	U		U	0.00098	0.00018	mg/kg
EP-10-20201230	460-225730-7	1,2,4-TRICHLOROBENZENE	1/2/2021		Y	N	U		U	0.00098	0.00035	mg/kg
EP-10-20201230	460-225730-7	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1/2/2021		Y	N	U		U	0.00098	0.00029	mg/kg
EP-10-20201230	460-225730-7	1,1-DICHLOROETHENE	1/2/2021		Y	N	U		U	0.00098	0.00022	mg/kg
EP-10-20201230	460-225730-7	1,1-DICHLOROETHANE	1/2/2021		Y	N	U		U	0.00098	0.00020	mg/kg
EP-10-20201230	460-225730-7	1,1,2-TRICHLOROETHANE	1/2/2021		Y	N	U		U	0.00098	0.00017	mg/kg
EP-10-20201230	460-225730-7	VINYL CHLORIDE	1/2/2021		Y	N	U		U	0.00098	0.00053	mg/kg

SDG: 4602257301

Analytical Method	SW8260											
Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EP-10-20201230	460-225730-7	1,1,1-TRICHLOROETHANE	1/2/2021		Y	N	U		U	0.00098	0.00023	mg/kg
EP-10-20201230	460-225730-7	1,2,3-TRICHLOROBENZENE	1/2/2021		Y	N	U		U	0.00098	0.00018	mg/kg
EP-10-20201230	460-225730-7	CARBON TETRACHLORIDE	1/2/2021		Y	N	U	UJ	UJ	0.00098	0.00038	mg/kg
EP-10-20201230	460-225730-7	1,4-DICHLOROBENZENE	1/2/2021		Y	N	U		U	0.00098	0.00022	mg/kg
EP-10-20201230	460-225730-7	TERT-BUTYL METHYL ETHER	1/2/2021		Y	N	U		U	0.00098	0.00050	mg/kg
EP-10-20201230	460-225730-7	TRICHLOROFLUOROMETHANE	1/2/2021		Y	N	U		U	0.00098	0.00040	mg/kg
EP-10-20201230	460-225730-7	1,2-DIBROMO-3-CHLOROPROPANE	1/2/2021		Y	N	U		U	0.00098	0.00045	mg/kg
EP-10-20201230	460-225730-7	CHLOROETHANE	1/2/2021		Y	N	U		U	0.00098	0.00051	mg/kg
EP-10-20201230	460-225730-7	TRICHLOROETHYLENE (TCE)	1/2/2021		Y	N	U		U	0.00098	0.00031	mg/kg
EP-10-20201230	460-225730-7	TRANS-1,3-DICHLOROPROPENE	1/2/2021		Y	N	U		U	0.00098	0.00026	mg/kg
EP-10-20201230	460-225730-7	TRANS-1,2-DICHLOROETHENE	1/2/2021		Y	N	U		U	0.00098	0.00024	mg/kg
EP-10-20201230	460-225730-7	TETRACHLOROETHYLENE(PCE)	1/2/2021	0.0025	Y	Y				0.00098	0.00030	mg/kg
EP-10-20201230	460-225730-7	STYRENE	1/2/2021		Y	N	U		U	0.00098	0.00027	mg/kg
EP-10-20201230	460-225730-7	O-XYLENE (1,2-DIMETHYLBENZENE)	1/2/2021		Y	N	U		U	0.00098	0.00019	mg/kg
EP-10-20201230	460-225730-7	METHYLENE CHLORIDE	1/2/2021		Y	N	U		U	0.0020	0.0011	mg/kg
EP-10-20201230	460-225730-7	METHYLCYCLOHEXANE	1/2/2021		Y	N	U		U	0.00098	0.00049	mg/kg
EP-10-20201230	460-225730-7	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	1/2/2021		Y	N	U		U	0.0049	0.0015	mg/kg
EP-10-20201230	460-225730-7	CIS-1,3-DICHLOROPROPENE	1/2/2021		Y	N	U		U	0.00098	0.00027	mg/kg
EP-10-20201230	460-225730-7	CHLOROFORM	1/2/2021		Y	N	U		U	0.00098	0.00095	mg/kg
EP-10-20201230	460-225730-7	CHLOROMETHANE	1/2/2021		Y	N	U		U	0.00098	0.00042	mg/kg
EP-10-20201230	460-225730-7	TOLUENE	1/2/2021		Y	N	U		U	0.00098	0.00023	mg/kg
EP-10-20201230	460-225730-7	Cis-1,2-Dichloroethylene	1/2/2021		Y	N	U		U	0.00098	0.00035	mg/kg
EP-10-20201230	460-225730-7	METHYL ETHYL KETONE (2-BUTANONE)	1/2/2021		Y	N	U		U	0.0049	0.00036	mg/kg

SDG: 4602257301

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EP-10-20201230	460-225730-7	CYCLOHEXANE	1/2/2021		Y	N	U		U	0.00098	0.00022	mg/kg
EP-10-20201230	460-225730-7	DIBROMOCHLOROMETHANE	1/2/2021		Y	N	U		U	0.00098	0.00019	mg/kg
EP-10-20201230	460-225730-7	ETHYLBENZENE	1/2/2021		Y	N	U		U	0.00098	0.00019	mg/kg
EP-10-20201230	460-225730-7	Isopropylbenzene (Cumene)	1/2/2021		Y	N	U		U	0.00098	0.00028	mg/kg
EP-10-20201230	460-225730-7	M,P-XYLENES	1/2/2021		Y	N	U		U	0.00098	0.00017	mg/kg
EP-10-20201230	460-225730-7	DICHLORODIFLUOROMETHANE	1/2/2021		Y	N	U		U	0.00098	0.00033	mg/kg
EP-10-20201230	460-225730-7	METHYL ACETATE	1/2/2021		Y	N	U		U	0.0049	0.0042	mg/kg
EP-6-20201230	460-225730-6	BROMODICHLOROMETHANE	1/2/2021		Y	N	U		U	0.0012	0.00030	mg/kg
EP-6-20201230	460-225730-6	ETHYLBENZENE	1/2/2021		Y	N	U		U	0.0012	0.00023	mg/kg
EP-6-20201230	460-225730-6	DICHLORODIFLUOROMETHANE	1/2/2021		Y	N	U		U	0.0012	0.00040	mg/kg
EP-6-20201230	460-225730-6	DIBROMOCHLOROMETHANE	1/2/2021		Y	N	U		U	0.0012	0.00023	mg/kg
EP-6-20201230	460-225730-6	CYCLOHEXANE	1/2/2021		Y	N	U		U	0.0012	0.00026	mg/kg
EP-6-20201230	460-225730-6	CIS-1,3-DICHLOROPROPENE	1/2/2021		Y	N	U		U	0.0012	0.00032	mg/kg
EP-6-20201230	460-225730-6	Cis-1,2-Dichloroethylene	1/2/2021		Y	N	U		U	0.0012	0.00042	mg/kg
EP-6-20201230	460-225730-6	CHLOROMETHANE	1/2/2021		Y	N	U		U	0.0012	0.00051	mg/kg
EP-6-20201230	460-225730-6	CARBON DISULFIDE	1/2/2021		Y	N	U		U	0.0012	0.00031	mg/kg
EP-6-20201230	460-225730-6	CHLOROETHANE	1/2/2021		Y	N	U		U	0.0012	0.00061	mg/kg
EP-6-20201230	460-225730-6	CHLOROBENZENE	1/2/2021		Y	N	U		U	0.0012	0.00021	mg/kg
EP-6-20201230	460-225730-6	BROMOFORM	1/2/2021		Y	N	U		U	0.0012	0.00050	mg/kg
EP-6-20201230	460-225730-6	BROMOMETHANE	1/2/2021		Y	N	U		U	0.0023	0.0012	mg/kg
EP-6-20201230	460-225730-6	TRICHLOROFLUOROMETHANE	1/2/2021		Y	N	U		U	0.0012	0.00048	mg/kg
EP-6-20201230	460-225730-6	Isopropylbenzene (Cumene)	1/2/2021		Y	N	U		U	0.0012	0.00033	mg/kg
EP-6-20201230	460-225730-6	CHLOROFORM	1/2/2021		Y	N	U		U	0.0012	0.0011	mg/kg
EP-6-20201230	460-225730-6	TETRACHLOROETHYLENE(PCE)	1/2/2021	0.0013	Y	Y				0.0012	0.00036	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EP-6-20201230	460-225730-6	M,P-XYLENES	1/2/2021		Y	N	U		U	0.0012	0.00020	mg/kg
EP-6-20201230	460-225730-6	BROMOCHLOROMETHANE	1/2/2021		Y	N	U		U	0.0012	0.00033	mg/kg
EP-6-20201230	460-225730-6	1,2,3-TRICHLOROBENZENE	1/2/2021		Y	N	U		U	0.0012	0.00021	mg/kg
EP-6-20201230	460-225730-6	VINYL CHLORIDE	1/2/2021		Y	N	U		U	0.0012	0.00064	mg/kg
EP-6-20201230	460-225730-6	TRICHLOROETHYLENE (TCE)	1/2/2021		Y	N	U		U	0.0012	0.00038	mg/kg
EP-6-20201230	460-225730-6	TRANS-1,3-DICHLOROPROPENE	1/2/2021		Y	N	U		U	0.0012	0.00031	mg/kg
EP-6-20201230	460-225730-6	TOLUENE	1/2/2021		Y	N	U		U	0.0012	0.00027	mg/kg
EP-6-20201230	460-225730-6	METHYL ACETATE	1/2/2021		Y	N	U		U	0.0059	0.0050	mg/kg
EP-6-20201230	460-225730-6	TERT-BUTYL METHYL ETHER	1/2/2021		Y	N	U		U	0.0012	0.00060	mg/kg
EP-6-20201230	460-225730-6	STYRENE	1/2/2021		Y	N	U		U	0.0012	0.00033	mg/kg
EP-6-20201230	460-225730-6	O-XYLENE (1,2-DIMETHYLBENZENE)	1/2/2021		Y	N	U		U	0.0012	0.00023	mg/kg
EP-6-20201230	460-225730-6	METHYLENE CHLORIDE	1/2/2021		Y	N	U		U	0.0023	0.0013	mg/kg
EP-6-20201230	460-225730-6	METHYLCYCLOHEXANE	1/2/2021		Y	N	U		U	0.0012	0.00058	mg/kg
EP-6-20201230	460-225730-6	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	1/2/2021		Y	N	U		U	0.0059	0.0018	mg/kg
EP-6-20201230	460-225730-6	TRANS-1,2-DICHLOROETHENE	1/2/2021		Y	N	U		U	0.0012	0.00029	mg/kg
EP-6-20201230	460-225730-6	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1/2/2021		Y	N	U		U	0.0012	0.00035	mg/kg
EP-6-20201230	460-225730-6	METHYL ETHYL KETONE (2-BUTANONE)	1/2/2021		Y	N	U		U	0.0059	0.00043	mg/kg
EP-6-20201230	460-225730-6	1,1,1-TRICHLOROETHANE	1/2/2021		Y	N	U		U	0.0012	0.00027	mg/kg
EP-6-20201230	460-225730-6	BENZENE	1/2/2021		Y	N	U		U	0.0012	0.00030	mg/kg
EP-6-20201230	460-225730-6	1,1,2,2-TETRACHLOROETHANE	1/2/2021		Y	N	U		U	0.0012	0.00025	mg/kg
EP-6-20201230	460-225730-6	CARBON TETRACHLORIDE	1/2/2021		Y	N	U	UJ	UJ	0.0012	0.00045	mg/kg
EP-6-20201230	460-225730-6	1,1,2-TRICHLOROETHANE	1/2/2021		Y	N	U		U	0.0012	0.00021	mg/kg
EP-6-20201230	460-225730-6	1,1-DICHLOROETHANE	1/2/2021		Y	N	U		U	0.0012	0.00024	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EP-6-20201230	460-225730-6	1,1-DICHLOROETHENE	1/2/2021		Y	N	U		U	0.0012	0.00026	mg/kg
EP-6-20201230	460-225730-6	1,2,4-TRICHLOROBENZENE	1/2/2021		Y	N	U		U	0.0012	0.00042	mg/kg
EP-6-20201230	460-225730-6	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	1/2/2021		Y	N	U		U	0.0012	0.00021	mg/kg
EP-6-20201230	460-225730-6	1,2-DICHLOROBENZENE	1/2/2021		Y	N	U		U	0.0012	0.00042	mg/kg
EP-6-20201230	460-225730-6	1,2-DICHLOROETHANE	1/2/2021		Y	N	U		U	0.0012	0.00035	mg/kg
EP-6-20201230	460-225730-6	1,2-DICHLOROPROPANE	1/2/2021		Y	N	U		U	0.0012	0.00050	mg/kg
EP-6-20201230	460-225730-6	1,3-DICHLOROBENZENE	1/2/2021		Y	N	U		U	0.0012	0.00043	mg/kg
EP-6-20201230	460-225730-6	1,4-DICHLOROBENZENE	1/2/2021		Y	N	U		U	0.0012	0.00026	mg/kg
EP-6-20201230	460-225730-6	1,4-DIOXANE (P-DIOXANE)	1/2/2021		Y	N	U		U	0.023	0.011	mg/kg
EP-6-20201230	460-225730-6	2-HEXANONE	1/2/2021		Y	N	U		U	0.0059	0.0020	mg/kg
EP-6-20201230	460-225730-6	ACETONE	1/2/2021	0.0090	Y	Y				0.0070	0.0067	mg/kg
EP-6-20201230	460-225730-6	1,2-DIBROMO-3-CHLOROPROPANE	1/2/2021		Y	N	U		U	0.0012	0.00054	mg/kg
FB20201230-202012	460-225730-8	CYCLOHEXANE	1/2/2021		Y	N	U		U	1.0	0.32	ug/l
FB20201230-202012	460-225730-8	METHYLCYCLOHEXANE	1/2/2021		Y	N	U		U	1.0	0.71	ug/l
FB20201230-202012	460-225730-8	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	1/2/2021		Y	N	U		U	5.0	1.3	ug/l
FB20201230-202012	460-225730-8	METHYL ETHYL KETONE (2-BUTANONE)	1/2/2021		Y	N	U		U	5.0	1.9	ug/l
FB20201230-202012	460-225730-8	METHYL ACETATE	1/2/2021		Y	N	U		U	5.0	0.79	ug/l
FB20201230-202012	460-225730-8	M,P-XYLENES	1/2/2021		Y	N	U		U	1.0	0.30	ug/l
FB20201230-202012	460-225730-8	Isopropylbenzene (Cumene)	1/2/2021		Y	N	U		U	1.0	0.34	ug/l
FB20201230-202012	460-225730-8	ETHYLBENZENE	1/2/2021		Y	N	U		U	1.0	0.30	ug/l
FB20201230-202012	460-225730-8	Cis-1,2-Dichloroethylene	1/2/2021		Y	N	U		U	1.0	0.22	ug/l
FB20201230-202012	460-225730-8	DIBROMOCHLOROMETHANE	1/2/2021		Y	N	U		U	1.0	0.28	ug/l
FB20201230-202012	460-225730-8	CIS-1,3-DICHLOROPROPENE	1/2/2021		Y	N	U		U	1.0	0.22	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
FB20201230-202012	460-225730-8	DICHLORODIFLUOROMETHANE	1/2/2021		Y	N	U		U	1.0	0.31	ug/l
FB20201230-202012	460-225730-8	O-XYLENE (1,2-DIMETHYLBENZENE)	1/2/2021		Y	N	U		U	1.0	0.36	ug/l
FB20201230-202012	460-225730-8	TERT-BUTYL METHYL ETHER	1/2/2021		Y	N	U		U	1.0	0.22	ug/l
FB20201230-202012	460-225730-8	TETRACHLOROETHYLENE(PCE)	1/2/2021		Y	N	U		U	1.0	0.25	ug/l
FB20201230-202012	460-225730-8	TOLUENE	1/2/2021		Y	N	U		U	1.0	0.38	ug/l
FB20201230-202012	460-225730-8	TRANS-1,2-DICHLOROETHENE	1/2/2021		Y	N	U		U	1.0	0.24	ug/l
FB20201230-202012	460-225730-8	TRANS-1,3-DICHLOROPROPENE	1/2/2021		Y	N	U		U	1.0	0.22	ug/l
FB20201230-202012	460-225730-8	1,2-DICHLOROPROPANE	1/2/2021		Y	N	U		U	1.0	0.35	ug/l
FB20201230-202012	460-225730-8	TRICHLOROFLUOROMETHANE	1/2/2021		Y	N	U		U	1.0	0.32	ug/l
FB20201230-202012	460-225730-8	METHYLENE CHLORIDE	1/2/2021		Y	N	U		U	1.0	0.32	ug/l
FB20201230-202012	460-225730-8	VINYL CHLORIDE	1/2/2021		Y	N	U		U	1.0	0.17	ug/l
FB20201230-202012	460-225730-8	1,4-DIOXANE (P-DIOXANE)	1/2/2021		Y	N	U		U	50	28	ug/l
FB20201230-202012	460-225730-8	1,4-DICHLOROBENZENE	1/2/2021		Y	N	U		U	1.0	0.33	ug/l
FB20201230-202012	460-225730-8	1,3-DICHLOROBENZENE	1/2/2021		Y	N	U		U	1.0	0.34	ug/l
FB20201230-202012	460-225730-8	TRICHLOROETHYLENE (TCE)	1/2/2021		Y	N	U		U	1.0	0.31	ug/l
FB20201230-202012	460-225730-8	BROMOMETHANE	1/2/2021		Y	N	U		U	1.0	0.55	ug/l
FB20201230-202012	460-225730-8	STYRENE	1/2/2021		Y	N	U		U	1.0	0.42	ug/l
FB20201230-202012	460-225730-8	CARBON TETRACHLORIDE	1/2/2021		Y	N	U		U	1.0	0.21	ug/l
FB20201230-202012	460-225730-8	1,2,3-TRICHLOROBENZENE	1/2/2021		Y	N	U	UJ	UJ	1.0	0.36	ug/l
FB20201230-202012	460-225730-8	CHLOROMETHANE	1/2/2021		Y	N	U		U	1.0	0.40	ug/l
FB20201230-202012	460-225730-8	CHLOROFORM	1/2/2021		Y	N	U		U	1.0	0.33	ug/l
FB20201230-202012	460-225730-8	CHLOROETHANE	1/2/2021		Y	N	U		U	1.0	0.32	ug/l
FB20201230-202012	460-225730-8	1,2-DICHLOROETHANE	1/2/2021		Y	N	U		U	1.0	0.43	ug/l
FB20201230-202012	460-225730-8	CARBON DISULFIDE	1/2/2021		Y	N	U		U	1.0	0.82	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
FB20201230-202012	460-225730-8	BROMOFORM	1/2/2021		Y	N	U		U	1.0	0.54	ug/l
FB20201230-202012	460-225730-8	BROMODICHLOROMETHANE	1/2/2021		Y	N	U		U	1.0	0.34	ug/l
FB20201230-202012	460-225730-8	BROMOCHLOROMETHANE	1/2/2021		Y	N	U		U	1.0	0.41	ug/l
FB20201230-202012	460-225730-8	BENZENE	1/2/2021		Y	N	U		U	1.0	0.20	ug/l
FB20201230-202012	460-225730-8	1,2,4-TRICHLOROBENZENE	1/2/2021		Y	N	U		U	1.0	0.37	ug/l
FB20201230-202012	460-225730-8	CHLOROBENZENE	1/2/2021		Y	N	U		U	1.0	0.38	ug/l
FB20201230-202012	460-225730-8	1,2-DICHLOROBENZENE	1/2/2021		Y	N	U		U	1.0	0.21	ug/l
FB20201230-202012	460-225730-8	ACETONE	1/2/2021		Y	N	U		U	5.0	4.4	ug/l
FB20201230-202012	460-225730-8	2-HEXANONE	1/2/2021		Y	N	U		U	5.0	1.1	ug/l
FB20201230-202012	460-225730-8	1,2-DIBROMO-3-CHLOROPROPANE	1/2/2021		Y	N	U		U	1.0	0.38	ug/l
FB20201230-202012	460-225730-8	1,1-DICHLOROETHENE	1/2/2021		Y	N	U		U	1.0	0.26	ug/l
FB20201230-202012	460-225730-8	1,1-DICHLOROETHANE	1/2/2021		Y	N	U		U	1.0	0.26	ug/l
FB20201230-202012	460-225730-8	1,1,2-TRICHLOROETHANE	1/2/2021		Y	N	U		U	1.0	0.20	ug/l
FB20201230-202012	460-225730-8	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1/2/2021		Y	N	U		U	1.0	0.31	ug/l
FB20201230-202012	460-225730-8	1,1,2,2-TETRACHLOROETHANE	1/2/2021		Y	N	U		U	1.0	0.37	ug/l
FB20201230-202012	460-225730-8	1,1,1-TRICHLOROETHANE	1/2/2021		Y	N	U		U	1.0	0.24	ug/l
FB20201230-202012	460-225730-8	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	1/2/2021		Y	N	U		U	1.0	0.50	ug/l
SW-13-20201230	460-225730-1	Cis-1,2-Dichloroethylene	1/2/2021		Y	N	U		U	0.0011	0.00039	mg/kg
SW-13-20201230	460-225730-1	METHYL ETHYL KETONE (2-BUTANONE)	1/2/2021		Y	N	U		U	0.0055	0.00040	mg/kg
SW-13-20201230	460-225730-1	METHYL ACETATE	1/2/2021		Y	N	U		U	0.0055	0.0047	mg/kg
SW-13-20201230	460-225730-1	M,P-XYLENES	1/2/2021		Y	N	U		U	0.0011	0.00019	mg/kg
SW-13-20201230	460-225730-1	Isopropylbenzene (Cumene)	1/2/2021		Y	N	U		U	0.0011	0.00031	mg/kg
SW-13-20201230	460-225730-1	ETHYLBENZENE	1/2/2021		Y	N	U		U	0.0011	0.00022	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
SW-13-20201230	460-225730-1	DICHLORODIFLUOROMETHANE	1/2/2021		Y	N	U		U	0.0011	0.00037	mg/kg
SW-13-20201230	460-225730-1	DIBROMOCHLOROMETHANE	1/2/2021		Y	N	U		U	0.0011	0.00021	mg/kg
SW-13-20201230	460-225730-1	CIS-1,3-DICHLOROPROPENE	1/2/2021		Y	N	U		U	0.0011	0.00030	mg/kg
SW-13-20201230	460-225730-1	TRICHLOROFLUOROMETHANE	1/2/2021		Y	N	U		U	0.0011	0.00045	mg/kg
SW-13-20201230	460-225730-1	CYCLOHEXANE	1/2/2021		Y	N	U		U	0.0011	0.00024	mg/kg
SW-13-20201230	460-225730-1	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	1/2/2021		Y	N	U		U	0.0055	0.0017	mg/kg
SW-13-20201230	460-225730-1	METHYLCYCLOHEXANE	1/2/2021		Y	N	U		U	0.0011	0.00055	mg/kg
SW-13-20201230	460-225730-1	VINYL CHLORIDE	1/2/2021		Y	N	U		U	0.0011	0.00060	mg/kg
SW-13-20201230	460-225730-1	O-XYLENE (1,2-DIMETHYLBENZENE)	1/2/2021		Y	N	U		U	0.0011	0.00021	mg/kg
SW-13-20201230	460-225730-1	STYRENE	1/2/2021		Y	N	U		U	0.0011	0.00031	mg/kg
SW-13-20201230	460-225730-1	TERT-BUTYL METHYL ETHER	1/2/2021		Y	N	U		U	0.0011	0.00056	mg/kg
SW-13-20201230	460-225730-1	TETRACHLOROETHYLENE(PCE)	1/2/2021	0.00078	Y	Y	J		J	0.0011	0.00034	mg/kg
SW-13-20201230	460-225730-1	TOLUENE	1/2/2021		Y	N	U		U	0.0011	0.00026	mg/kg
SW-13-20201230	460-225730-1	TRANS-1,2-DICHLOROETHENE	1/2/2021		Y	N	U		U	0.0011	0.00027	mg/kg
SW-13-20201230	460-225730-1	CHLOROMETHANE	1/2/2021		Y	N	U		U	0.0011	0.00048	mg/kg
SW-13-20201230	460-225730-1	TRICHLOROETHYLENE (TCE)	1/2/2021		Y	N	U		U	0.0011	0.00035	mg/kg
SW-13-20201230	460-225730-1	1,3-DICHLOROBENZENE	1/2/2021		Y	N	U		U	0.0011	0.00040	mg/kg
SW-13-20201230	460-225730-1	TRANS-1,3-DICHLOROPROPENE	1/2/2021		Y	N	U		U	0.0011	0.00029	mg/kg
SW-13-20201230	460-225730-1	1,4-DICHLOROBENZENE	1/2/2021		Y	N	U		U	0.0011	0.00025	mg/kg
SW-13-20201230	460-225730-1	1,1,1-TRICHLOROETHANE	1/2/2021		Y	N	U		U	0.0011	0.00026	mg/kg
SW-13-20201230	460-225730-1	1,1,2,2-TETRACHLOROETHANE	1/2/2021		Y	N	U		U	0.0011	0.00024	mg/kg
SW-13-20201230	460-225730-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1/2/2021		Y	N	U		U	0.0011	0.00033	mg/kg
SW-13-20201230	460-225730-1	1,1,2-TRICHLOROETHANE	1/2/2021		Y	N	U		U	0.0011	0.00020	mg/kg

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Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
SW-13-20201230	460-225730-1	1,1-DICHLOROETHANE	1/2/2021		Y	N	U		U	0.0011	0.00023	mg/kg
SW-13-20201230	460-225730-1	1,1-DICHLOROETHENE	1/2/2021		Y	N	U		U	0.0011	0.00025	mg/kg
SW-13-20201230	460-225730-1	1,2,4-TRICHLOROBENZENE	1/2/2021		Y	N	U		U	0.0011	0.00039	mg/kg
SW-13-20201230	460-225730-1	1,2-DIBROMO-3-CHLOROPROPANE	1/2/2021		Y	N	U		U	0.0011	0.00051	mg/kg
SW-13-20201230	460-225730-1	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	1/2/2021		Y	N	U		U	0.0011	0.00020	mg/kg
SW-13-20201230	460-225730-1	1,2-DICHLOROBENZENE	1/2/2021		Y	N	U		U	0.0011	0.00040	mg/kg
SW-13-20201230	460-225730-1	1,4-DIOXANE (P-DIOXANE)	1/2/2021		Y	N	U		U	0.022	0.010	mg/kg
SW-13-20201230	460-225730-1	1,2-DICHLOROPROPANE	1/2/2021		Y	N	U		U	0.0011	0.00047	mg/kg
SW-13-20201230	460-225730-1	CHLOROFORM	1/2/2021		Y	N	U		U	0.0011	0.0011	mg/kg
SW-13-20201230	460-225730-1	2-HEXANONE	1/2/2021		Y	N	U		U	0.0055	0.0019	mg/kg
SW-13-20201230	460-225730-1	ACETONE	1/2/2021		Y	N	U		U	0.0066	0.0063	mg/kg
SW-13-20201230	460-225730-1	BENZENE	1/2/2021		Y	N	U		U	0.0011	0.00028	mg/kg
SW-13-20201230	460-225730-1	BROMOCHLOROMETHANE	1/2/2021		Y	N	U		U	0.0011	0.00031	mg/kg
SW-13-20201230	460-225730-1	BROMODICHLOROMETHANE	1/2/2021		Y	N	U		U	0.0011	0.00028	mg/kg
SW-13-20201230	460-225730-1	BROMOFORM	1/2/2021		Y	N	U		U	0.0011	0.00047	mg/kg
SW-13-20201230	460-225730-1	BROMOMETHANE	1/2/2021		Y	N	U		U	0.0022	0.0011	mg/kg
SW-13-20201230	460-225730-1	CARBON DISULFIDE	1/2/2021		Y	N	U		U	0.0011	0.00029	mg/kg
SW-13-20201230	460-225730-1	CHLOROBENZENE	1/2/2021		Y	N	U		U	0.0011	0.00019	mg/kg
SW-13-20201230	460-225730-1	CHLOROETHANE	1/2/2021		Y	N	U		U	0.0011	0.00057	mg/kg
SW-13-20201230	460-225730-1	1,2-DICHLOROETHANE	1/2/2021		Y	N	U		U	0.0011	0.00033	mg/kg
SW-13-20201230	460-225730-1	CARBON TETRACHLORIDE	1/2/2021		Y	N	U	UJ	UJ	0.0011	0.00043	mg/kg
SW-13-20201230	460-225730-1	1,2,3-TRICHLOROBENZENE	1/2/2021		Y	N	U		U	0.0011	0.00020	mg/kg
SW-13-20201230	460-225730-1	METHYLENE CHLORIDE	1/2/2021		Y	N	U		U	0.0022	0.0013	mg/kg

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Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
SW-14-20201230	460-225730-2	METHYL ACETATE	1/2/2021		Y	N	U		U	0.0050	0.0043	mg/kg
SW-14-20201230	460-225730-2	METHYL ETHYL KETONE (2-BUTANONE)	1/2/2021		Y	N	U		U	0.0050	0.00037	mg/kg
SW-14-20201230	460-225730-2	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	1/2/2021		Y	N	U		U	0.0050	0.0016	mg/kg
SW-14-20201230	460-225730-2	METHYLCYCLOHEXANE	1/2/2021		Y	N	U		U	0.0010	0.00050	mg/kg
SW-14-20201230	460-225730-2	METHYLENE CHLORIDE	1/2/2021		Y	N	U		U	0.0020	0.0012	mg/kg
SW-14-20201230	460-225730-2	O-XYLENE (1,2-DIMETHYLBENZENE)	1/2/2021		Y	N	U		U	0.0010	0.00020	mg/kg
SW-14-20201230	460-225730-2	STYRENE	1/2/2021		Y	N	U		U	0.0010	0.00028	mg/kg
SW-14-20201230	460-225730-2	TETRACHLOROETHYLENE(PCE)	1/2/2021	0.0020	Y	Y				0.0010	0.00031	mg/kg
SW-14-20201230	460-225730-2	TRANS-1,2-DICHLOROETHENE	1/2/2021		Y	N	U		U	0.0010	0.00025	mg/kg
SW-14-20201230	460-225730-2	TRANS-1,3-DICHLOROPROPENE	1/2/2021		Y	N	U		U	0.0010	0.00027	mg/kg
SW-14-20201230	460-225730-2	M,P-XYLENES	1/2/2021	0.00069	Y	Y	J		J	0.0010	0.00018	mg/kg
SW-14-20201230	460-225730-2	TRICHLOROFLUOROMETHANE	1/2/2021		Y	N	U		U	0.0010	0.00041	mg/kg
SW-14-20201230	460-225730-2	TERT-BUTYL METHYL ETHER	1/2/2021		Y	N	U		U	0.0010	0.00052	mg/kg
SW-14-20201230	460-225730-2	VINYL CHLORIDE	1/2/2021		Y	N	U		U	0.0010	0.00055	mg/kg
SW-14-20201230	460-225730-2	BROMOCHLOROMETHANE	1/2/2021		Y	N	U		U	0.0010	0.00028	mg/kg
SW-14-20201230	460-225730-2	CARBON TETRACHLORIDE	1/2/2021		Y	N	U	UJ	UJ	0.0010	0.00039	mg/kg
SW-14-20201230	460-225730-2	1,2,3-TRICHLOROBENZENE	1/2/2021		Y	N	U		U	0.0010	0.00018	mg/kg
SW-14-20201230	460-225730-2	DIBROMOCHLOROMETHANE	1/2/2021		Y	N	U		U	0.0010	0.00020	mg/kg
SW-14-20201230	460-225730-2	CYCLOHEXANE	1/2/2021		Y	N	U		U	0.0010	0.00022	mg/kg
SW-14-20201230	460-225730-2	CIS-1,3-DICHLOROPROPENE	1/2/2021		Y	N	U		U	0.0010	0.00028	mg/kg
SW-14-20201230	460-225730-2	Cis-1,2-Dichloroethylene	1/2/2021		Y	N	U		U	0.0010	0.00036	mg/kg
SW-14-20201230	460-225730-2	CHLOROMETHANE	1/2/2021		Y	N	U		U	0.0010	0.00044	mg/kg
SW-14-20201230	460-225730-2	CHLOROFORM	1/2/2021		Y	N	U		U	0.0010	0.00098	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
SW-14-20201230	460-225730-2	CHLOROETHANE	1/2/2021		Y	N	U		U	0.0010	0.00053	mg/kg
SW-14-20201230	460-225730-2	TRICHLOROETHYLENE (TCE)	1/2/2021		Y	N	U		U	0.0010	0.00032	mg/kg
SW-14-20201230	460-225730-2	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	1/2/2021		Y	N	U		U	0.0010	0.00018	mg/kg
SW-14-20201230	460-225730-2	ACETONE	1/2/2021		Y	N	U		U	0.0061	0.0058	mg/kg
SW-14-20201230	460-225730-2	2-HEXANONE	1/2/2021		Y	N	U		U	0.0050	0.0017	mg/kg
SW-14-20201230	460-225730-2	1,4-DIOXANE (P-DIOXANE)	1/2/2021		Y	N	U		U	0.020	0.0093	mg/kg
SW-14-20201230	460-225730-2	1,4-DICHLOROBENZENE	1/2/2021		Y	N	U		U	0.0010	0.00023	mg/kg
SW-14-20201230	460-225730-2	1,3-DICHLOROBENZENE	1/2/2021		Y	N	U		U	0.0010	0.00037	mg/kg
SW-14-20201230	460-225730-2	1,2-DICHLOROPROPANE	1/2/2021		Y	N	U		U	0.0010	0.00043	mg/kg
SW-14-20201230	460-225730-2	TOLUENE	1/2/2021	0.00043	Y	Y	J		J	0.0010	0.00024	mg/kg
SW-14-20201230	460-225730-2	Isopropylbenzene (Cumene)	1/2/2021		Y	N	U		U	0.0010	0.00029	mg/kg
SW-14-20201230	460-225730-2	BENZENE	1/2/2021		Y	N	U		U	0.0010	0.00026	mg/kg
SW-14-20201230	460-225730-2	1,2-DICHLOROBENZENE	1/2/2021		Y	N	U		U	0.0010	0.00036	mg/kg
SW-14-20201230	460-225730-2	1,2-DIBROMO-3-CHLOROPROPANE	1/2/2021		Y	N	U		U	0.0010	0.00046	mg/kg
SW-14-20201230	460-225730-2	1,2,4-TRICHLOROBENZENE	1/2/2021		Y	N	U		U	0.0010	0.00036	mg/kg
SW-14-20201230	460-225730-2	1,1-DICHLOROETHENE	1/2/2021		Y	N	U		U	0.0010	0.00023	mg/kg
SW-14-20201230	460-225730-2	ETHYLBENZENE	1/2/2021		Y	N	U		U	0.0010	0.00020	mg/kg
SW-14-20201230	460-225730-2	BROMOFORM	1/2/2021		Y	N	U		U	0.0010	0.00043	mg/kg
SW-14-20201230	460-225730-2	1,2-DICHLOROETHANE	1/2/2021		Y	N	U		U	0.0010	0.00030	mg/kg
SW-14-20201230	460-225730-2	CARBON DISULFIDE	1/2/2021		Y	N	U		U	0.0010	0.00027	mg/kg
SW-14-20201230	460-225730-2	1,1-DICHLOROETHANE	1/2/2021		Y	N	U		U	0.0010	0.00021	mg/kg
SW-14-20201230	460-225730-2	CHLOROBENZENE	1/2/2021		Y	N	U		U	0.0010	0.00018	mg/kg
SW-14-20201230	460-225730-2	BROMOMETHANE	1/2/2021		Y	N	U		U	0.0020	0.0010	mg/kg

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Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
SW-14-20201230	460-225730-2	DICHLORODIFLUOROMETHANE	1/2/2021		Y	N	U		U	0.0010	0.00034	mg/kg
SW-14-20201230	460-225730-2	BROMODICHLOROMETHANE	1/2/2021		Y	N	U		U	0.0010	0.00026	mg/kg
SW-14-20201230	460-225730-2	1,1,2,2-TETRACHLOROETHANE	1/2/2021		Y	N	U		U	0.0010	0.00022	mg/kg
SW-14-20201230	460-225730-2	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1/2/2021		Y	N	U		U	0.0010	0.00030	mg/kg
SW-14-20201230	460-225730-2	1,1,2-TRICHLOROETHANE	1/2/2021		Y	N	U		U	0.0010	0.00018	mg/kg
SW-14-20201230	460-225730-2	1,1,1-TRICHLOROETHANE	1/2/2021		Y	N	U		U	0.0010	0.00024	mg/kg
SW-15-20201230	460-225730-3	TOLUENE	1/2/2021		Y	N	U		U	0.00098	0.00023	mg/kg
SW-15-20201230	460-225730-3	TRANS-1,2-DICHLOROETHENE	1/2/2021		Y	N	U		U	0.00098	0.00024	mg/kg
SW-15-20201230	460-225730-3	TRANS-1,3-DICHLOROPROPENE	1/2/2021		Y	N	U		U	0.00098	0.00026	mg/kg
SW-15-20201230	460-225730-3	TERT-BUTYL METHYL ETHER	1/2/2021		Y	N	U		U	0.00098	0.00050	mg/kg
SW-15-20201230	460-225730-3	STYRENE	1/2/2021		Y	N	U		U	0.00098	0.00027	mg/kg
SW-15-20201230	460-225730-3	O-XYLENE (1,2-DIMETHYLBENZENE)	1/2/2021		Y	N	U		U	0.00098	0.00019	mg/kg
SW-15-20201230	460-225730-3	METHYLENE CHLORIDE	1/2/2021		Y	N	U		U	0.0020	0.0011	mg/kg
SW-15-20201230	460-225730-3	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	1/2/2021		Y	N	U		U	0.0049	0.0015	mg/kg
SW-15-20201230	460-225730-3	BROMOFORM	1/2/2021		Y	N	U		U	0.00098	0.00042	mg/kg
SW-15-20201230	460-225730-3	METHYLCYCLOHEXANE	1/2/2021		Y	N	U		U	0.00098	0.00049	mg/kg
SW-15-20201230	460-225730-3	TETRACHLOROETHYLENE(PCE)	1/2/2021	0.0015	Y	Y				0.00098	0.00030	mg/kg
SW-15-20201230	460-225730-3	TRICHLOROETHYLENE (TCE)	1/2/2021		Y	N	U		U	0.00098	0.00031	mg/kg
SW-15-20201230	460-225730-3	TRICHLOROFLUOROMETHANE	1/2/2021		Y	N	U		U	0.00098	0.00040	mg/kg
SW-15-20201230	460-225730-3	VINYL CHLORIDE	1/2/2021		Y	N	U		U	0.00098	0.00053	mg/kg
SW-15-20201230	460-225730-3	BENZENE	1/2/2021		Y	N	U		U	0.00098	0.00025	mg/kg
SW-15-20201230	460-225730-3	BROMOCHLOROMETHANE	1/2/2021		Y	N	U		U	0.00098	0.00027	mg/kg
SW-15-20201230	460-225730-3	1,2,3-TRICHLOROBENZENE	1/2/2021		Y	N	U		U	0.00098	0.00018	mg/kg

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Analytical Method	SW8260											
Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
SW-15-20201230	460-225730-3	BROMOMETHANE	1/2/2021		Y	N	U		U	0.0020	0.00098	mg/kg
SW-15-20201230	460-225730-3	CARBON DISULFIDE	1/2/2021		Y	N	U		U	0.00098	0.00026	mg/kg
SW-15-20201230	460-225730-3	METHYL ETHYL KETONE (2-BUTANONE)	1/2/2021		Y	N	U		U	0.0049	0.00036	mg/kg
SW-15-20201230	460-225730-3	1,4-DIOXANE (P-DIOXANE)	1/2/2021		Y	N	U		U	0.020	0.0090	mg/kg
SW-15-20201230	460-225730-3	BROMODICHLOROMETHANE	1/2/2021		Y	N	U		U	0.00098	0.00025	mg/kg
SW-15-20201230	460-225730-3	ACETONE	1/2/2021		Y	N	U		U	0.0059	0.0056	mg/kg
SW-15-20201230	460-225730-3	1,2-DICHLOROPROPANE	1/2/2021		Y	N	U		U	0.00098	0.00041	mg/kg
SW-15-20201230	460-225730-3	1,2-DICHLOROETHANE	1/2/2021		Y	N	U		U	0.00098	0.00029	mg/kg
SW-15-20201230	460-225730-3	1,2-DICHLOROBENZENE	1/2/2021		Y	N	U		U	0.00098	0.00035	mg/kg
SW-15-20201230	460-225730-3	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	1/2/2021		Y	N	U		U	0.00098	0.00018	mg/kg
SW-15-20201230	460-225730-3	1,2-DIBROMO-3-CHLOROPROPANE	1/2/2021		Y	N	U		U	0.00098	0.00045	mg/kg
SW-15-20201230	460-225730-3	1,3-DICHLOROBENZENE	1/2/2021		Y	N	U		U	0.00098	0.00036	mg/kg
SW-15-20201230	460-225730-3	1,1-DICHLOROETHENE	1/2/2021		Y	N	U		U	0.00098	0.00022	mg/kg
SW-15-20201230	460-225730-3	1,2,4-TRICHLOROBENZENE	1/2/2021		Y	N	U		U	0.00098	0.00035	mg/kg
SW-15-20201230	460-225730-3	1,1,2-TRICHLOROETHANE	1/2/2021		Y	N	U		U	0.00098	0.00017	mg/kg
SW-15-20201230	460-225730-3	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1/2/2021		Y	N	U		U	0.00098	0.00029	mg/kg
SW-15-20201230	460-225730-3	1,1,2,2-TETRACHLOROETHANE	1/2/2021		Y	N	U		U	0.00098	0.00021	mg/kg
SW-15-20201230	460-225730-3	CARBON TETRACHLORIDE	1/2/2021		Y	N	U	UJ	UJ	0.00098	0.00038	mg/kg
SW-15-20201230	460-225730-3	1,1,1-TRICHLOROETHANE	1/2/2021		Y	N	U		U	0.00098	0.00023	mg/kg
SW-15-20201230	460-225730-3	UNKNOWN VOLATILE ORGANIC WITH HIGHEST CONC.	1/2/2021	0.0059	Y	Y	J		J	0	0	mg/kg
SW-15-20201230	460-225730-3	METHYL ACETATE	1/2/2021		Y	N	U		U	0.0049	0.0042	mg/kg
SW-15-20201230	460-225730-3	CYCLOHEXANE	1/2/2021		Y	N	U		U	0.00098	0.00022	mg/kg
SW-15-20201230	460-225730-3	Isopropylbenzene (Cumene)	1/2/2021		Y	N	U		U	0.00098	0.00028	mg/kg

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Analytical Method	SW8260											
Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
SW-15-20201230	460-225730-3	M,P-XYLENES	1/2/2021		Y	N	U		U	0.00098	0.00017	mg/kg
SW-15-20201230	460-225730-3	1,1-DICHLOROETHANE	1/2/2021		Y	N	U		U	0.00098	0.00020	mg/kg
SW-15-20201230	460-225730-3	1,4-DICHLOROBENZENE	1/2/2021		Y	N	U		U	0.00098	0.00022	mg/kg
SW-15-20201230	460-225730-3	ETHYLBENZENE	1/2/2021		Y	N	U		U	0.00098	0.00019	mg/kg
SW-15-20201230	460-225730-3	DIBROMOCHLOROMETHANE	1/2/2021		Y	N	U		U	0.00098	0.00019	mg/kg
SW-15-20201230	460-225730-3	CIS-1,3-DICHLOROPROPENE	1/2/2021		Y	N	U		U	0.00098	0.00027	mg/kg
SW-15-20201230	460-225730-3	Cis-1,2-Dichloroethylene	1/2/2021		Y	N	U		U	0.00098	0.00035	mg/kg
SW-15-20201230	460-225730-3	CHLOROMETHANE	1/2/2021		Y	N	U		U	0.00098	0.00043	mg/kg
SW-15-20201230	460-225730-3	CHLOROFORM	1/2/2021		Y	N	U		U	0.00098	0.00095	mg/kg
SW-15-20201230	460-225730-3	CHLOROETHANE	1/2/2021		Y	N	U		U	0.00098	0.00051	mg/kg
SW-15-20201230	460-225730-3	CHLOROBENZENE	1/2/2021		Y	N	U		U	0.00098	0.00017	mg/kg
SW-15-20201230	460-225730-3	2-HEXANONE	1/2/2021		Y	N	U		U	0.0049	0.0017	mg/kg
SW-15-20201230	460-225730-3	DICHLORODIFLUOROMETHANE	1/2/2021		Y	N	U		U	0.00098	0.00033	mg/kg
SW-16-20201230	460-225730-4	TRICHLOROETHYLENE (TCE)	1/2/2021		Y	N	U		U	0.00095	0.00030	mg/kg
SW-16-20201230	460-225730-4	METHYL ACETATE	1/2/2021		Y	N	U		U	0.0048	0.0041	mg/kg
SW-16-20201230	460-225730-4	METHYL ETHYL KETONE (2-BUTANONE)	1/2/2021		Y	N	U		U	0.0048	0.00035	mg/kg
SW-16-20201230	460-225730-4	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	1/2/2021		Y	N	U		U	0.0048	0.0015	mg/kg
SW-16-20201230	460-225730-4	M,P-XYLENES	1/2/2021		Y	N	U		U	0.00095	0.00017	mg/kg
SW-16-20201230	460-225730-4	METHYLENE CHLORIDE	1/2/2021		Y	N	U		U	0.0019	0.0011	mg/kg
SW-16-20201230	460-225730-4	Isopropylbenzene (Cumene)	1/2/2021		Y	N	U		U	0.00095	0.00027	mg/kg
SW-16-20201230	460-225730-4	STYRENE	1/2/2021		Y	N	U		U	0.00095	0.00026	mg/kg
SW-16-20201230	460-225730-4	TERT-BUTYL METHYL ETHER	1/2/2021		Y	N	U		U	0.00095	0.00049	mg/kg
SW-16-20201230	460-225730-4	TETRACHLOROETHYLENE(PCE)	1/2/2021	0.0034	Y	Y				0.00095	0.00029	mg/kg

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Analytical Method	SW8260											
Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
SW-16-20201230	460-225730-4	TOLUENE	1/2/2021		Y	N	U		U	0.00095	0.00022	mg/kg
SW-16-20201230	460-225730-4	TRANS-1,3-DICHLOROPROPENE	1/2/2021		Y	N	U		U	0.00095	0.00025	mg/kg
SW-16-20201230	460-225730-4	TRICHLOROFLUOROMETHANE	1/2/2021		Y	N	U		U	0.00095	0.00039	mg/kg
SW-16-20201230	460-225730-4	VINYL CHLORIDE	1/2/2021		Y	N	U		U	0.00095	0.00052	mg/kg
SW-16-20201230	460-225730-4	ETHYLBENZENE	1/2/2021		Y	N	U		U	0.00095	0.00019	mg/kg
SW-16-20201230	460-225730-4	METHYLCYCLOHEXANE	1/2/2021		Y	N	U		U	0.00095	0.00047	mg/kg
SW-16-20201230	460-225730-4	TRANS-1,2-DICHLOROETHENE	1/2/2021		Y	N	U		U	0.00095	0.00023	mg/kg
SW-16-20201230	460-225730-4	1,2-DICHLOROBENZENE	1/2/2021		Y	N	U		U	0.00095	0.00034	mg/kg
SW-16-20201230	460-225730-4	1,1-DICHLOROETHENE	1/2/2021		Y	N	U		U	0.00095	0.00021	mg/kg
SW-16-20201230	460-225730-4	1,1,2-TRICHLOROETHANE	1/2/2021		Y	N	U		U	0.00095	0.00017	mg/kg
SW-16-20201230	460-225730-4	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1/2/2021		Y	N	U		U	0.00095	0.00029	mg/kg
SW-16-20201230	460-225730-4	1,1,2,2-TETRACHLOROETHANE	1/2/2021		Y	N	U		U	0.00095	0.00020	mg/kg
SW-16-20201230	460-225730-4	1,1,1-TRICHLOROETHANE	1/2/2021		Y	N	U		U	0.00095	0.00022	mg/kg
SW-16-20201230	460-225730-4	1,2,3-TRICHLOROBENZENE	1/2/2021		Y	N	U		U	0.00095	0.00017	mg/kg
SW-16-20201230	460-225730-4	1,4-DICHLOROBENZENE	1/2/2021		Y	N	U		U	0.00095	0.00021	mg/kg
SW-16-20201230	460-225730-4	1,3-DICHLOROBENZENE	1/2/2021		Y	N	U		U	0.00095	0.00035	mg/kg
SW-16-20201230	460-225730-4	1,2,4-TRICHLOROBENZENE	1/2/2021		Y	N	U		U	0.00095	0.00034	mg/kg
SW-16-20201230	460-225730-4	CARBON TETRACHLORIDE	1/2/2021		Y	N	U	UJ	UJ	0.00095	0.00037	mg/kg
SW-16-20201230	460-225730-4	1,2-DICHLOROETHANE	1/2/2021		Y	N	U		U	0.00095	0.00028	mg/kg
SW-16-20201230	460-225730-4	1,2-DIBROMO-3-CHLOROPROPANE	1/2/2021		Y	N	U		U	0.00095	0.00044	mg/kg
SW-16-20201230	460-225730-4	1,2-DICHLOROPROPANE	1/2/2021		Y	N	U		U	0.00095	0.00040	mg/kg
SW-16-20201230	460-225730-4	DICHLORODIFLUOROMETHANE	1/2/2021		Y	N	U		U	0.00095	0.00032	mg/kg
SW-16-20201230	460-225730-4	O-XYLENE (1,2-DIMETHYLBENZENE)	1/2/2021		Y	N	U		U	0.00095	0.00018	mg/kg

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Analytical Method	SW8260											
Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
SW-16-20201230	460-225730-4	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	1/2/2021		Y	N	U		U	0.00095	0.00017	mg/kg
SW-16-20201230	460-225730-4	CHLOROBENZENE	1/2/2021		Y	N	U		U	0.00095	0.00017	mg/kg
SW-16-20201230	460-225730-4	DIBROMOCHLOROMETHANE	1/2/2021		Y	N	U		U	0.00095	0.00018	mg/kg
SW-16-20201230	460-225730-4	CYCLOHEXANE	1/2/2021		Y	N	U		U	0.00095	0.00021	mg/kg
SW-16-20201230	460-225730-4	CIS-1,3-DICHLOROPROPENE	1/2/2021		Y	N	U		U	0.00095	0.00026	mg/kg
SW-16-20201230	460-225730-4	Cis-1,2-Dichloroethylene	1/2/2021		Y	N	U		U	0.00095	0.00034	mg/kg
SW-16-20201230	460-225730-4	CHLOROMETHANE	1/2/2021		Y	N	U		U	0.00095	0.00041	mg/kg
SW-16-20201230	460-225730-4	1,1-DICHLOROETHANE	1/2/2021		Y	N	U		U	0.00095	0.00020	mg/kg
SW-16-20201230	460-225730-4	CHLOROETHANE	1/2/2021		Y	N	U		U	0.00095	0.00050	mg/kg
SW-16-20201230	460-225730-4	1,4-DIOXANE (P-DIOXANE)	1/2/2021		Y	N	U		U	0.019	0.0087	mg/kg
SW-16-20201230	460-225730-4	CARBON DISULFIDE	1/2/2021		Y	N	U		U	0.00095	0.00025	mg/kg
SW-16-20201230	460-225730-4	BROMOMETHANE	1/2/2021		Y	N	U		U	0.0019	0.00095	mg/kg
SW-16-20201230	460-225730-4	BROMOFORM	1/2/2021		Y	N	U		U	0.00095	0.00040	mg/kg
SW-16-20201230	460-225730-4	BROMODICHLOROMETHANE	1/2/2021		Y	N	U		U	0.00095	0.00024	mg/kg
SW-16-20201230	460-225730-4	BROMOCHLOROMETHANE	1/2/2021		Y	N	U		U	0.00095	0.00027	mg/kg
SW-16-20201230	460-225730-4	BENZENE	1/2/2021		Y	N	U		U	0.00095	0.00025	mg/kg
SW-16-20201230	460-225730-4	ACETONE	1/2/2021		Y	N	U		U	0.0057	0.0054	mg/kg
SW-16-20201230	460-225730-4	2-HEXANONE	1/2/2021		Y	N	U		U	0.0048	0.0016	mg/kg
SW-16-20201230	460-225730-4	CHLOROFORM	1/2/2021		Y	N	U		U	0.00095	0.00092	mg/kg
SW-17-20201230	460-225730-5	1,2,4-TRICHLOROBENZENE	1/2/2021		Y	N	U		U	0.0011	0.00040	mg/kg
SW-17-20201230	460-225730-5	METHYLCYCLOHEXANE	1/2/2021		Y	N	U		U	0.0011	0.00056	mg/kg
SW-17-20201230	460-225730-5	1,1-DICHLOROETHANE	1/2/2021		Y	N	U		U	0.0011	0.00023	mg/kg
SW-17-20201230	460-225730-5	CHLOROBENZENE	1/2/2021		Y	N	U		U	0.0011	0.00020	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
SW-17-20201230	460-225730-5	1,1-DICHLOROETHENE	1/2/2021		Y	N	U		U	0.0011	0.00025	mg/kg
SW-17-20201230	460-225730-5	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	1/2/2021		Y	N	U		U	0.0056	0.0018	mg/kg
SW-17-20201230	460-225730-5	CHLOROETHANE	1/2/2021		Y	N	U		U	0.0011	0.00059	mg/kg
SW-17-20201230	460-225730-5	1,4-DIOXANE (P-DIOXANE)	1/2/2021		Y	N	U		U	0.023	0.010	mg/kg
SW-17-20201230	460-225730-5	2-HEXANONE	1/2/2021		Y	N	U		U	0.0056	0.0019	mg/kg
SW-17-20201230	460-225730-5	ACETONE	1/2/2021		Y	N	U		U	0.0068	0.0064	mg/kg
SW-17-20201230	460-225730-5	BENZENE	1/2/2021		Y	N	U		U	0.0011	0.00029	mg/kg
SW-17-20201230	460-225730-5	BROMOCHLOROMETHANE	1/2/2021		Y	N	U		U	0.0011	0.00032	mg/kg
SW-17-20201230	460-225730-5	BROMODICHLOROMETHANE	1/2/2021		Y	N	U		U	0.0011	0.00029	mg/kg
SW-17-20201230	460-225730-5	BROMOFORM	1/2/2021		Y	N	U		U	0.0011	0.00048	mg/kg
SW-17-20201230	460-225730-5	BROMOMETHANE	1/2/2021		Y	N	U		U	0.0023	0.0011	mg/kg
SW-17-20201230	460-225730-5	TRANS-1,3-DICHLOROPROPENE	1/2/2021		Y	N	U		U	0.0011	0.00030	mg/kg
SW-17-20201230	460-225730-5	METHYL ETHYL KETONE (2-BUTANONE)	1/2/2021		Y	N	U		U	0.0056	0.00041	mg/kg
SW-17-20201230	460-225730-5	1,2-DIBROMO-3-CHLOROPROPANE	1/2/2021		Y	N	U		U	0.0011	0.00052	mg/kg
SW-17-20201230	460-225730-5	TRICHLOROETHYLENE (TCE)	1/2/2021		Y	N	U		U	0.0011	0.00036	mg/kg
SW-17-20201230	460-225730-5	TRICHLOROFLUOROMETHANE	1/2/2021		Y	N	U		U	0.0011	0.00046	mg/kg
SW-17-20201230	460-225730-5	VINYL CHLORIDE	1/2/2021		Y	N	U		U	0.0011	0.00062	mg/kg
SW-17-20201230	460-225730-5	1,3-DICHLOROBENZENE	1/2/2021		Y	N	U		U	0.0011	0.00041	mg/kg
SW-17-20201230	460-225730-5	1,2-DICHLOROPROPANE	1/2/2021		Y	N	U		U	0.0011	0.00048	mg/kg
SW-17-20201230	460-225730-5	1,2-DICHLOROETHANE	1/2/2021		Y	N	U		U	0.0011	0.00033	mg/kg
SW-17-20201230	460-225730-5	1,2-DICHLOROBENZENE	1/2/2021		Y	N	U		U	0.0011	0.00041	mg/kg
SW-17-20201230	460-225730-5	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	1/2/2021		Y	N	U		U	0.0011	0.00020	mg/kg
SW-17-20201230	460-225730-5	CARBON DISULFIDE	1/2/2021		Y	N	U		U	0.0011	0.00030	mg/kg

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Analytical Method	SW8260											
Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
SW-17-20201230	460-225730-5	Cis-1,2-Dichloroethylene	1/2/2021		Y	N	U		U	0.0011	0.00040	mg/kg
SW-17-20201230	460-225730-5	TERT-BUTYL METHYL ETHER	1/2/2021		Y	N	U		U	0.0011	0.00058	mg/kg
SW-17-20201230	460-225730-5	M,P-XYLENES	1/2/2021		Y	N	U		U	0.0011	0.00020	mg/kg
SW-17-20201230	460-225730-5	Isopropylbenzene (Cumene)	1/2/2021		Y	N	U		U	0.0011	0.00032	mg/kg
SW-17-20201230	460-225730-5	ETHYLBENZENE	1/2/2021		Y	N	U		U	0.0011	0.00022	mg/kg
SW-17-20201230	460-225730-5	DICHLORODIFLUOROMETHANE	1/2/2021		Y	N	U		U	0.0011	0.00038	mg/kg
SW-17-20201230	460-225730-5	DIBROMOCHLOROMETHANE	1/2/2021		Y	N	U		U	0.0011	0.00022	mg/kg
SW-17-20201230	460-225730-5	1,2,3-TRICHLOROBENZENE	1/2/2021		Y	N	U		U	0.0011	0.00020	mg/kg
SW-17-20201230	460-225730-5	CIS-1,3-DICHLOROPROPENE	1/2/2021		Y	N	U		U	0.0011	0.00031	mg/kg
SW-17-20201230	460-225730-5	CARBON TETRACHLORIDE	1/2/2021		Y	N	U	UJ	UJ	0.0011	0.00044	mg/kg
SW-17-20201230	460-225730-5	CHLOROMETHANE	1/2/2021		Y	N	U		U	0.0011	0.00049	mg/kg
SW-17-20201230	460-225730-5	CHLOROFORM	1/2/2021		Y	N	U		U	0.0011	0.0011	mg/kg
SW-17-20201230	460-225730-5	1,1,2-TRICHLOROETHANE	1/2/2021		Y	N	U		U	0.0011	0.00020	mg/kg
SW-17-20201230	460-225730-5	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1/2/2021		Y	N	U		U	0.0011	0.00034	mg/kg
SW-17-20201230	460-225730-5	1,1,2,2-TETRACHLOROETHANE	1/2/2021		Y	N	U		U	0.0011	0.00024	mg/kg
SW-17-20201230	460-225730-5	1,1,1-TRICHLOROETHANE	1/2/2021		Y	N	U		U	0.0011	0.00026	mg/kg
SW-17-20201230	460-225730-5	CYCLOHEXANE	1/2/2021		Y	N	U		U	0.0011	0.00025	mg/kg
SW-17-20201230	460-225730-5	TRANS-1,2-DICHLOROETHENE	1/2/2021		Y	N	U		U	0.0011	0.00028	mg/kg
SW-17-20201230	460-225730-5	O-XYLENE (1,2-DIMETHYLBENZENE)	1/2/2021		Y	N	U		U	0.0011	0.00022	mg/kg
SW-17-20201230	460-225730-5	STYRENE	1/2/2021		Y	N	U		U	0.0011	0.00031	mg/kg
SW-17-20201230	460-225730-5	1,4-DICHLOROBENZENE	1/2/2021		Y	N	U		U	0.0011	0.00025	mg/kg
SW-17-20201230	460-225730-5	TETRACHLOROETHYLENE(PCE)	1/2/2021	0.0033	Y	Y				0.0011	0.00034	mg/kg
SW-17-20201230	460-225730-5	TOLUENE	1/2/2021		Y	N	U		U	0.0011	0.00026	mg/kg
SW-17-20201230	460-225730-5	METHYLENE CHLORIDE	1/2/2021		Y	N	U		U	0.0023	0.0013	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
SW-17-20201230	460-225730-5	METHYL ACETATE	1/2/2021		Y	N	U		U	0.0056	0.0048	mg/kg
Trip Blank-20201230	460-225730-9	1,2-DICHLOROBENZENE	1/2/2021		Y	N	U		U	1.0	0.21	ug/l
Trip Blank-20201230	460-225730-9	METHYLENE CHLORIDE	1/2/2021		Y	N	U		U	1.0	0.32	ug/l
Trip Blank-20201230	460-225730-9	O-XYLENE (1,2-DIMETHYLBENZENE)	1/2/2021		Y	N	U		U	1.0	0.36	ug/l
Trip Blank-20201230	460-225730-9	STYRENE	1/2/2021		Y	N	U		U	1.0	0.42	ug/l
Trip Blank-20201230	460-225730-9	TERT-BUTYL METHYL ETHER	1/2/2021		Y	N	U		U	1.0	0.22	ug/l
Trip Blank-20201230	460-225730-9	TETRACHLOROETHYLENE(PCE)	1/2/2021		Y	N	U		U	1.0	0.25	ug/l
Trip Blank-20201230	460-225730-9	TOLUENE	1/2/2021		Y	N	U		U	1.0	0.38	ug/l
Trip Blank-20201230	460-225730-9	TRANS-1,2-DICHLOROETHENE	1/2/2021		Y	N	U		U	1.0	0.24	ug/l
Trip Blank-20201230	460-225730-9	METHYLCYCLOHEXANE	1/2/2021		Y	N	U		U	1.0	0.71	ug/l
Trip Blank-20201230	460-225730-9	Isopropylbenzene (Cumene)	1/2/2021		Y	N	U		U	1.0	0.34	ug/l
Trip Blank-20201230	460-225730-9	CHLOROBENZENE	1/2/2021		Y	N	U		U	1.0	0.38	ug/l
Trip Blank-20201230	460-225730-9	CHLOROETHANE	1/2/2021		Y	N	U		U	1.0	0.32	ug/l
Trip Blank-20201230	460-225730-9	CHLOROFORM	1/2/2021		Y	N	U		U	1.0	0.33	ug/l
Trip Blank-20201230	460-225730-9	CHLOROMETHANE	1/2/2021		Y	N	U		U	1.0	0.40	ug/l
Trip Blank-20201230	460-225730-9	Cis-1,2-Dichloroethylene	1/2/2021		Y	N	U		U	1.0	0.22	ug/l
Trip Blank-20201230	460-225730-9	CIS-1,3-DICHLOROPROPENE	1/2/2021		Y	N	U		U	1.0	0.22	ug/l
Trip Blank-20201230	460-225730-9	CYCLOHEXANE	1/2/2021		Y	N	U		U	1.0	0.32	ug/l
Trip Blank-20201230	460-225730-9	DIBROMOCHLOROMETHANE	1/2/2021		Y	N	U		U	1.0	0.28	ug/l
Trip Blank-20201230	460-225730-9	1,2-DIBROMO-3-CHLOROPROPANE	1/2/2021		Y	N	U		U	1.0	0.38	ug/l
Trip Blank-20201230	460-225730-9	ETHYLBENZENE	1/2/2021		Y	N	U		U	1.0	0.30	ug/l
Trip Blank-20201230	460-225730-9	BROMOMETHANE	1/2/2021		Y	N	U		U	1.0	0.55	ug/l
Trip Blank-20201230	460-225730-9	M,P-XYLENES	1/2/2021		Y	N	U		U	1.0	0.30	ug/l
Trip Blank-20201230	460-225730-9	METHYL ACETATE	1/2/2021		Y	N	U		U	5.0	0.79	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
Trip Blank-20201230	460-225730-9	METHYL ETHYL KETONE (2-BUTANONE)	1/2/2021		Y	N	U		U	5.0	1.9	ug/l
Trip Blank-20201230	460-225730-9	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	1/2/2021		Y	N	U		U	5.0	1.3	ug/l
Trip Blank-20201230	460-225730-9	TRANS-1,3-DICHLOROPROPENE	1/2/2021		Y	N	U		U	1.0	0.22	ug/l
Trip Blank-20201230	460-225730-9	TRICHLOROETHYLENE (TCE)	1/2/2021		Y	N	U		U	1.0	0.31	ug/l
Trip Blank-20201230	460-225730-9	TRICHLOROFLUOROMETHANE	1/2/2021		Y	N	U		U	1.0	0.32	ug/l
Trip Blank-20201230	460-225730-9	VINYL CHLORIDE	1/2/2021		Y	N	U		U	1.0	0.17	ug/l
Trip Blank-20201230	460-225730-9	DICHLORODIFLUOROMETHANE	1/2/2021		Y	N	U		U	1.0	0.31	ug/l
Trip Blank-20201230	460-225730-9	1,3-DICHLOROBENZENE	1/2/2021		Y	N	U		U	1.0	0.34	ug/l
Trip Blank-20201230	460-225730-9	1,1,2,2-TETRACHLOROETHANE	1/2/2021		Y	N	U		U	1.0	0.37	ug/l
Trip Blank-20201230	460-225730-9	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1/2/2021		Y	N	U		U	1.0	0.31	ug/l
Trip Blank-20201230	460-225730-9	1,1,2-TRICHLOROETHANE	1/2/2021		Y	N	U		U	1.0	0.20	ug/l
Trip Blank-20201230	460-225730-9	1,1-DICHLOROETHANE	1/2/2021		Y	N	U		U	1.0	0.26	ug/l
Trip Blank-20201230	460-225730-9	1,1-DICHLOROETHENE	1/2/2021		Y	N	U		U	1.0	0.26	ug/l
Trip Blank-20201230	460-225730-9	1,2,3-TRICHLOROBENZENE	1/2/2021		Y	N	U	UJ	UJ	1.0	0.36	ug/l
Trip Blank-20201230	460-225730-9	1,2,4-TRICHLOROBENZENE	1/2/2021		Y	N	U		U	1.0	0.37	ug/l
Trip Blank-20201230	460-225730-9	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	1/2/2021		Y	N	U		U	1.0	0.50	ug/l
Trip Blank-20201230	460-225730-9	CARBON TETRACHLORIDE	1/2/2021		Y	N	U		U	1.0	0.21	ug/l
Trip Blank-20201230	460-225730-9	1,2-DICHLOROPROPANE	1/2/2021		Y	N	U		U	1.0	0.35	ug/l
Trip Blank-20201230	460-225730-9	CARBON DISULFIDE	1/2/2021		Y	N	U		U	1.0	0.82	ug/l
Trip Blank-20201230	460-225730-9	1,4-DICHLOROBENZENE	1/2/2021		Y	N	U		U	1.0	0.33	ug/l
Trip Blank-20201230	460-225730-9	1,4-DIOXANE (P-DIOXANE)	1/2/2021		Y	N	U		U	50	28	ug/l
Trip Blank-20201230	460-225730-9	2-HEXANONE	1/2/2021		Y	N	U		U	5.0	1.1	ug/l
Trip Blank-20201230	460-225730-9	ACETONE	1/2/2021		Y	N	U		U	5.0	4.4	ug/l

SDG: 4602257301

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
Trip Blank-20201230	460-225730-9	BENZENE	1/2/2021		Y	N	U		U	1.0	0.20	ug/l
Trip Blank-20201230	460-225730-9	BROMOCHLOROMETHANE	1/2/2021		Y	N	U		U	1.0	0.41	ug/l
Trip Blank-20201230	460-225730-9	BROMODICHLOROMETHANE	1/2/2021		Y	N	U		U	1.0	0.34	ug/l
Trip Blank-20201230	460-225730-9	BROMOFORM	1/2/2021		Y	N	U		U	1.0	0.54	ug/l
Trip Blank-20201230	460-225730-9	1,1,1-TRICHLOROETHANE	1/2/2021		Y	N	U		U	1.0	0.24	ug/l
Trip Blank-20201230	460-225730-9	1,2-DICHLOROETHANE	1/2/2021		Y	N	U		U	1.0	0.43	ug/l

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

GEI Consultants
110 Walt Whitman Road, Suite 204
Huntington Station, NY 11746
ATTN: Mr. Bill Fitchett
Wfitchett@geiconsultants.com

March 3, 2021

SUBJECT: Long Island City, 30th Street, Data Usability Summary Report.

Dear Mr. Fitchett,

Enclosed is the final validation report for the fraction listed below. This SDG was received on February 12, 2021. Attachment 1 is a summary of the samples that were reviewed for analysis.

LDC Project #50471:

SDG #	**Fraction**
460-227392-1	Volatiles

The data validation was performed under modified Category B guidelines using quality control summaries provided by the laboratory. The analyses were validated using the following documents, as applicable to each method:

- USEPA Region 2 Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-Method 8260B and 8260C, SOP HW-24, Revision 4; October 2014
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, EPA 540-R-2017-002; January 2017
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Christina Rink

Christina Rink
crink@lab-data.com
Project Manager/Senior Chemist

28 pages-ADV EQUIS EDD/ NYDUSR Attachment 1

Category B **LDC #50471 (GEI Consultants, Inc. - Huntington Station, NY / 30th Street, Long Island City, Site No. C241214)**

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260D)																															
Matrix: Water/Soil				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	460-227392-1	02/12/21	03/08/21	2	1																														

Site: Long Island City, 30th Street
Laboratory: Eurofins
Report No.: 460-227392-1
Reviewer: Josephine Go and Christina Rink/Laboratory Data Consultants for GEI Consultants, Inc. – Huntington Station, NY
Date: March 2, 2021

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
SW-8	460-227392-1	VOC
FB20210128	460-227392-2	VOC
TB20210128	460-227392-3	VOC

Associated QC Samples(s):
Field/TB20210128s: TB20210128, FB20210128
Field Duplicate pair: None Associated

The above-listed soil and water samples were collected on January 28, 2021 and were analyzed for volatile organic compounds (VOCs) by SW-846 method 8260D. The data validation was performed in accordance with the USEPA Region 2 *Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-Method 8260B and 8260C,* SOP HW-24, Revision 4 (October 2014) and the USEPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,* EPA 540-R-2017-002 (January 2017), modified as necessary to accommodate the non-CLP methodologies used.

The organic data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) Tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Control Sample (LCS) Results
- Internal Standards
- Field Duplicate Results
- Moisture Content
- Quantitation Limits and Data Assessment
- Sample Quantitation and Compound Identification

Overall Evaluation of Data and Potential Usability Issues

All results are usable as reported or usable with minor qualification due to laboratory quality control outliers.

The validation findings were based on the following information.

Data Completeness

The data package was complete as defined under the requirements for the NYSDEC ASP category B laboratory deliverables.

Holding Times and Sample Preservation

All criteria were met.

GC/MS Tunes

All criteria were met.

Initial and Continuing Calibrations

Initial Calibration:

Compounds that did not meet criteria are summarized in the following table.

Date	Instrument ID	Compound	IC %D	Associated Samples		Validation Action
01/20/21	D77108	Bromomethane	82.8	SW-8	SS	UJ nondetects

X = Initial calibration (IC) relative standard deviation (%RSD) > 20; estimate (J/UJ) positive and nondetect results.
XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ) positive and nondetect results.
SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.
+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The bromomethane result was estimated due to second source calibration exceedance. The bias cannot be determined. The result can be used for project objectives as nondetect with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Continuing calibration:

Compounds that did not meet criteria are summarized in the following table.

Date	Standard ID	Compound	CC %D	Associated Samples		Validation Action
02/02/21	D77461	Bromomethane	48.3	SW-8	XX	UJ nondetects
		Bromochloromethane	20.7		XX	UJ nondetects

X = Initial calibration (IC) relative standard deviation (%RSD) > 20; estimate (J/UJ) positive and nondetect results.
XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ) positive and nondetect results.
SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.
+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The bromomethane and bromochloromethane results were estimated due to continuing calibration exceedances. The bias cannot be determined. The results can be used for project objectives as nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Blanks

Contamination was detected in the associated VOC method blank samples. The presence of blank contamination indicates that false positives may exist for these compounds in the associated samples. Action Levels (ALs) were established at <2x RL (for common contaminants) and <RL (for other contaminants) of the concentrations detected. The following table summarizes the contamination detected.

Blank ID	Compound	Level Detected	Action Level	Associated Samples
LB 3460-756144/1-A	m,p-Xylene	0.000204 mg/Kg	RL	SW-8

Sample results were qualified as follows:

- If sample concentration was < the reporting limit (RL) and ≤ the Action Level, qualify the result as a nondetect (U) at the RL.
- If sample concentration was > the RL and ≤ the Action Level, qualify the result as not detected (U) at the reported concentration.
- If the sample concentration was > the RL and > the Action Level, qualification of the data was not required.

Qualified sample results are listed in the table below.

Sample ID	Compound	Level Detected	Validation Action
SW-8	m,p-Xylene	0.00028 mg/Kg	0.00095U mg/Kg

These results can be used for project objectives as nondetects (U) which may have a minor impact on the data usability.

Contamination was detected in the trip blank sample TB20210128 and field blank sample FB20210128 for VOC analysis. The presence of blank contamination indicates that false positives may exist for these compounds in the associated samples. Action Levels (ALs) were established at <2x reporting limits (RL) (for common contaminants) and <RL (for other contaminants) of the concentrations detected. The following table summarizes the contamination detected.

Field Blank ID	Compound	Level Detected	Action Level	Associated Samples
TB20210128	Acetone	8.9 ug/L	2xRL	SW-8 FB20210128
FB20210128	Methylene chloride	0.33 ug/L	2xRL	SW-8

Sample results were qualified as follows:

- If sample concentration was < the reporting limit (RL) and ≤ the Action Level, qualify the result as a nondetect (U) at the RL.
- If sample concentration was > the RL and ≤ the Action Level, qualify the result as not detected (U) at the reported concentration.

No samples were qualified since the associated sample results were greater than the action level.

Surrogate Recoveries

All criteria were met.

MS/MSD Results

MS/MSD analyses were not associated with this sample set. Validation action was not required on this basis.

LCS Results

The following table lists the LCS/LCSD percent recoveries (%R) outside of control limits in the VOC analysis and the resulting validation actions.

LCS ID	Compound	LCS %R (Limits)	LCS/D %R (Limits)	Affected Sample	Validation Action
LCS/LCSD 460-756491/3,4	Bromomethane	178 (46-150)	169 (46-150)	SW-8	None

- Within control limits

Validation action was not required for bromomethane due to high LCS/LCSD recoveries as positive results only are affected and this compound was not detected in the associated sample.

Internal Standards

All criteria were met.

Field Duplicate Results

A field duplicate pair was not associated with this sample set. Validation action was not required on this basis.

Moisture Content

All criteria were met.

Quantitation Limits and Data Assessment

No results were reported below the reporting limit (RL) and above the method detection limit (MDL) in the VOC analysis.

Dilutions were not required for VOC analysis.

Sample Quantitation and Compound Identification

Calculations were spot-checked; no discrepancies were noted.

DATA VALIDATION QUALIFIERS

U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.

J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.

JN - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.

R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

LDC #: 50471A1a
SDG #: 460-227392-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Category B

Date: 03/01/21
Page: 1 of 1
Reviewer: JM
2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A /A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / SW	ICAL ≤ 20% or ICV ≤ 30%
IV.	Continuing calibration	SW	CCV ≤ 20%
V.	Laboratory Blanks	SW	
VI.	Field blanks	SW	FB = 2 TB = 3
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	SW	LCS/D
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

		Client ID	Lab ID	Matrix	Date
1	1	SW-8	460-227392-1	Soil	01/28/21
2	2	FB20210128	460-227392-2	Water	01/28/21
3	2	TB20210128	460-227392-3	Water	01/28/21
4					
5					
6					
7					
8					
9					

Notes:

1	MB 460-756491/1					
1	LB 3 460-756144/1-A					
2	MB 460-756683/1					

LDC #: 58471 A1a

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG

Method: Volatiles (EPA SW 846 Method 8260C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20% and relative response factors (RRF) within method criteria?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 30%?		✓		
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 20% and relative response factors (RRF) within method criteria?		✓		
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?	✓			
VI. Field blanks				
Were field blanks were identified in this SDG?	✓			
Were target compounds detected in the field blanks?	✓			
VII. Surrogate spikes				
Were all surrogate percent recovery (%R) within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?		✓		
X. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds detected in the field duplicates?			✓	
XI. Internal standards				
Were internal standard area counts within -50% to +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XII. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	AA. Tetrachloroethene	AAA. 1,3,5-Trimethylbenzene	AAAA. Ethyl tert-butyl ether	A1. 1,3-Butadiene	A2.
B. Bromomethane	BB. 1,1,2,2-Tetrachloroethane	BBB. 4-Chlorotoluene	BBBB. tert-Amyl methyl ether	B1. Hexane	B2.
C. Vinyl choride	CC. Toluene	CCC. tert-Butylbenzene	CCCC. 1-Chlorohexane	C1. Heptane	C2.
D. Chloroethane	DD. Chlorobenzene	DDD. 1,2,4-Trimethylbenzene	DDDD. Isopropyl alcohol	D1. Propylene	D2.
E. Methylene chloride	EE. Ethylbenzene	EEE. sec-Butylbenzene	EEEE. Acetonitrile	E1. Freon 11	E2.
F. Acetone	FF. Styrene	FFF. 1,3-Dichlorobenzene	FFFF. Acrolein	F1. Freon 12	F2.
G. Carbon disulfide	GG. Xylenes, total	GGG. p-Isopropyltoluene	GGGG. Acrylonitrile	G1. Freon 113	G2.
H. 1,1-Dichloroethene	HH. Vinyl acetate	HHH. 1,4-Dichlorobenzene	HHHH. 1,4-Dioxane	H1. Freon 114	H2.
I. 1,1-Dichloroethane	II. 2-Chloroethylvinyl ether	III. n-Butylbenzene	IIII. Isobutyl alcohol	I1. 2-Nitropropane	I2.
J. 1,2-Dichloroethene, total	JJ. Dichlorodifluoromethane	JJJ. 1,2-Dichlorobenzene	JJJJ. Methacrylonitrile	J1. Dimethyl disulfide	J2.
K. Chloroform	KK. Trichlorofluoromethane	KKK. 1,2,4-Trichlorobenzene	KKKK. Propionitrile	K1. 2,3-Dimethyl pentane	K2.
L. 1,2-Dichloroethane	LL. Methyl-tert-butyl ether	LLL. Hexachlorobutadiene	LLLL. Ethyl ether	L1. 2,4-Dimethyl pentane	L2.
M. 2-Butanone	MM. 1,2-Dibromo-3-chloropropane	MMM. Naphthalene	MMMM. Benzyl chloride	M1. 3,3-Dimethyl pentane	M2.
N. 1,1,1-Trichloroethane	NN. Methyl ethyl ketone	NNN. 1,2,3-Trichlorobenzene	NNNN. Iodomethane	N1. 2-Methylpentane	N2.
O. Carbon tetrachloride	OO. 2,2-Dichloropropane	OOO. 1,3,5-Trichlorobenzene	OOOO.1,1-Difluoroethane	O1. 3-Methylpentane	O2.
P. Bromodichloromethane	PP. Bromochloromethane	PPP. trans-1,2-Dichloroethene	PPPP. Tetrahydrofuran	P1. 3-Ethylpentane	P2.
Q. 1,2-Dichloropropane	QQ. 1,1-Dichloropropene	QQQ. cis-1,2-Dichloroethene	QQQQ. Methyl acetate	Q1. 2,2-Dimethylpentane	Q2.
R. cis-1,3-Dichloropropene	RR. Dibromomethane	RRR. m,p-Xylenes	RRRR. Ethyl acetate	R1. 2,2,3- Trimethylbutane	R2.
S. Trichloroethene	SS. 1,3-Dichloropropane	SSS. o-Xylene	SSSS. Cyclohexane	S1. 2,2,4-Trimethylpentane	S2.
T. Dibromochloromethane	TT. 1,2-Dibromoethane	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	TTTT. Methylcyclohexane	T1. 2-Methylhexane	T2.
U. 1,1,2-Trichloroethane	UU. 1,1,1,2-Tetrachloroethane	UUU. 1,2-Dichlorotetrafluoroethane	UUUU. Allyl chloride	U1. Nonanal	U2.
V. Benzene	VV. Isopropylbenzene	VVV. 4-Ethyltoluene	VVVV. Methyl methacrylate	V1. 2-Methylnaphthalene	V2.
W. trans-1,3-Dichloropropene	WW. Bromobenzene	WWW. Ethanol	WWWW. Ethyl methacrylate	W1. Methanol	W2.
X. Bromoform	XX. 1,2,3-Trichloropropane	XXX. Di-isopropyl ether	XXXX. cis-1,4-Dichloro-2-butene	X1. 1,2,3-Trimethylbenzene	X2.
Y. 4-Methyl-2-pentanone	YY. n-Propylbenzene	YYY. tert-Butanol	YYYY. trans-1,4-Dichloro-2-butene	Y1. 2-Propanol	Y2.
Z. 2-Hexanone	ZZ. 2-Chlorotoluene	ZZZ. tert-Butyl alcohol	ZZZZ. Pentachloroethane	Z1.	Z2.

LDC #: 50471 A1a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260 C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was an initial calibration verification standard analyzed after each ICAL for each instrument?

Y N N/A Were all %D within the validation criteria of ~~≤20~~/30%D?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤ ~~20~~/30.0%)	Associated Samples	Qualifications
	01/20/21	D77108	B	82.8	1, MB1, LB3 (ND)	J/UJ/A

LDC #: 50471A1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y (N) N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Y (N) N/A Were percent differences (%D) ≤20 % and relative response factors (RRF) within the method criteria?

#	Date	Standard ID	Compound	Finding %D (Limit: <20.0%)	Finding RRF (Limit)	Associated Samples	Qualifications
	02/02/21	D77461	B	48.3		1, MB1, LB3 (ND)	J/UJ/A
			PP	20.7		↓ ↓	↓

Note: * = Ave RRF failed method criteria but within validation criteria

LDC #: 50471 A1A

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Was a method blank associated with every sample in this SDG?
Y N N/A Was a method blank analyzed at least once every 12 hours for each matrix and concentration?
Y N N/A Was there contamination in the method blanks? If yes, please see the qualifications below.

Blank analysis date: 01/29/22
Conc. units: mg/kg
Associated Samples: 1

Compound	Blank ID	Sample Identification								
LB	460-756144	1-A	1							
RRR	0.000204		0.00028	0.00095U						

Blank analysis date:
Conc. units:
Associated Samples:

Compound	Blank ID	Sample Identification								

Note: Common contaminants such as Methylene chloride, Acetone, 2-Butanone, Carbon disulfide and TICs that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

LDC #: 50471A1a

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

(Y) N N/A Were field blanks identified in this SDG?
(Y) N N/A Were target compounds detected in the field blanks?

TB = 1, 2
FB = 1
(> TB/EB)

Blank units: ug/L **Associated sample units:** ug/kg
Sampling date: 01/28/21
Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: _____ Associated Samples: _____

Compound	Blank ID	Sample Identification								
(2x)	3	2	(2x) (ug/L)							
>RL F	8.9		0.0178							
<RL E		0.33	0.00066							

Blank units: _____ **Associated sample units:** _____
Sampling date: _____
Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: _____ Associated Samples: _____

Compound	Blank ID	Sample Identification								

Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

LDC #: 50471A1a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y (N) N/A Was a LCS required?

Y (N) N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	LCS/D 460-756491/3,4	B	178 (46-150)	169 (46-150)	( )	1, MB1 (ND)	J dets / P
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		

LDC#: 50471A1a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound
S= Standard deviation of the RRFs

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 50 std)	Recalculated RRF (RRF 50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL CVOAMS17	2/2/2021 to 2/3/2021	Acetone (BUT)	0.6970	0.6970	0.7880	0.7880	9.3	9.3
			cis-1,2-DCE (FBZ)	0.3381	0.3381	0.3407	0.3407	4.5	4.5
			1,4-Dioxane (DXE)	1.2002	1.2002	1.1555	1.1555	11.7	11.7
			Tetrachloroethene (CBZ)	0.3471	0.3471	0.3535	0.3535	6.6	6.6
			1,2,4-TCB (DCB)	1.2408	1.2408	1.2905	1.2905	9.0	9.0
2	ICAL CVOAMS4	1/20/2021	Acetone (BUT)	1.2481	1.2481	1.3872	1.3872	17.8	17.8
			cis-1,2-DCE (FBZ)	0.5183	0.5183	0.4905	0.4905	8.3	8.3
			1,4-Dioxane (DXE)	1.7448	1.7448	1.6037	1.6037	15.2	15.2
			Tetrachloroethene (CBZ)	0.7021	0.7021	0.6225	0.6225	12.3	12.3
			1,2,4-TCB (DCB)	1.3866	1.3866	1.4019	1.4019	10.8	10.8

LDC#: 50471A1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound	(IS)	Average RRF (Initial)	Reported RRF (CCV)	Recalculated RRF (CCV)	Reported % D	Recalculated %D
1	T136977	2/3/2021	Acetone	(BUT)	0.7880	0.7936	0.7936	0.7	0.7
			cis-1,2-DCE	(FBZ)	0.3407	0.3729	0.3729	9.4	9.4
			1,4-Dioxane	(DXE)	1.1555	1.2977	1.2977	12.3	12.3
			Tetrachloroethene	(CBZ)	0.3535	0.3943	0.3943	11.5	11.5
			1,2,4-TCB	(DCB)	1.2905	1.3737	1.3737	6.4	6.4
2	D77461	2/2/2021	Acetone	(BUT)	1.3872	1.1441	1.1441	17.5	17.5
			cis-1,2-DCE	(FBZ)	0.4905	0.4251	0.4251	13.3	13.3
			1,4-Dioxane	(DXE)	1.6037	1.5920	1.5920	0.7	0.7
			Tetrachloroethene	(CBZ)	0.6225	0.5250	0.5250	15.7	15.7
			1,2,4-TCB	(DCB)	1.4019	1.2141	1.2141	13.4	13.4

LDC #: 50471A1a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	50.0	43.6	87	87	0
1,2-Dichloroethane-d4	"	57.9	116	116	"
Toluene-d8	"	57.0	114	114	"
Bromofluorobenzene	"	63.6	127	127	"

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 50491A1a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration; SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: LCS/D 460-756491/3,4

Compound	Spike Added (mg/kg)		Spiked Sample Concentration (mg/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
1,1-Dichloroethene	0.0200	0.0200	0.0204	0.0219	107	107	109	109	7	7
Trichloroethene			0.0194	0.0217	97	97	108		11	11
Benzene			0.0212	0.0230	106	106	115	115	8	8
Toluene			0.0208	0.0225	104	104	113	113	8	8
Chlorobenzene	↓	↓	0.0205	0.0223	107	102	111	111	8	8

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 50471A1a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The concentration of the sample was calculated for the compound identified below using the following calculation:

$$\text{Concentration} = \frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 1, PCE

$$\text{Conc.} = \frac{(1832)(50)(5\ mL)}{(277288)(0.6225)(1000)(5.64g)(0.935)}$$

$$= 0.00053\ mg/kg$$

#	Sample ID	Compound	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Qualification
	1	PCE	0.00050	0.00053	—

30th Street, Long Island CIty, Site No. 241214 - LDC# 50471

SDG: 4602273921

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
SW-8-20210128	460-227392-1	1,4-DICHLOROBENZENE	2/2/2021		Y	N	U		U	0.00095	0.00021	mg/kg
SW-8-20210128	460-227392-1	TRICHLOROETHYLENE (TCE)	2/2/2021		Y	N	U		U	0.00095	0.00030	mg/kg
SW-8-20210128	460-227392-1	CHLOROBENZENE	2/2/2021		Y	N	U		U	0.00095	0.00017	mg/kg
SW-8-20210128	460-227392-1	1,1,2,2-TETRACHLOROETHANE	2/2/2021		Y	N	U		U	0.00095	0.00020	mg/kg
SW-8-20210128	460-227392-1	CARBON TETRACHLORIDE	2/2/2021		Y	N	U		U	0.00095	0.00037	mg/kg
SW-8-20210128	460-227392-1	CARBON DISULFIDE	2/2/2021		Y	N	U		U	0.00095	0.00025	mg/kg
SW-8-20210128	460-227392-1	BROMOMETHANE	2/2/2021		Y	N	UT	UJ	UJ	0.0019	0.00095	mg/kg
SW-8-20210128	460-227392-1	BROMOFORM	2/2/2021		Y	N	U		U	0.00095	0.00040	mg/kg
SW-8-20210128	460-227392-1	BROMODICHLOROMETHANE	2/2/2021		Y	N	U		U	0.00095	0.00024	mg/kg
SW-8-20210128	460-227392-1	BROMOCHLOROMETHANE	2/2/2021		Y	N	U	UJ	UJ	0.00095	0.00027	mg/kg
SW-8-20210128	460-227392-1	BENZENE	2/2/2021		Y	N	U		U	0.00095	0.00024	mg/kg
SW-8-20210128	460-227392-1	ACETONE	2/2/2021	0.021	Y	Y				0.0057	0.0054	mg/kg
SW-8-20210128	460-227392-1	CHLOROETHANE	2/2/2021		Y	N	U		U	0.00095	0.00050	mg/kg
SW-8-20210128	460-227392-1	1,4-DIOXANE (P-DIOXANE)	2/2/2021		Y	N	U		U	0.019	0.0087	mg/kg
SW-8-20210128	460-227392-1	CHLOROFORM	2/2/2021		Y	N	U		U	0.00095	0.00092	mg/kg
SW-8-20210128	460-227392-1	1,3-DICHLOROBENZENE	2/2/2021		Y	N	U		U	0.00095	0.00035	mg/kg
SW-8-20210128	460-227392-1	1,2-DICHLOROPROPANE	2/2/2021		Y	N	U		U	0.00095	0.00040	mg/kg
SW-8-20210128	460-227392-1	1,2-DICHLOROETHANE	2/2/2021		Y	N	U		U	0.00095	0.00028	mg/kg
SW-8-20210128	460-227392-1	1,2-DICHLOROBENZENE	2/2/2021		Y	N	U		U	0.00095	0.00034	mg/kg
SW-8-20210128	460-227392-1	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	2/2/2021		Y	N	U		U	0.00095	0.00017	mg/kg
SW-8-20210128	460-227392-1	1,2-DIBROMO-3-CHLOROPROPANE	2/2/2021		Y	N	U		U	0.00095	0.00044	mg/kg
SW-8-20210128	460-227392-1	1,2,4-TRICHLOROBENZENE	2/2/2021		Y	N	U		U	0.00095	0.00034	mg/kg
SW-8-20210128	460-227392-1	1,2,3-TRICHLOROBENZENE	2/2/2021		Y	N	U		U	0.00095	0.00017	mg/kg

SDG: 4602273921

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
SW-8-20210128	460-227392-1	1,1-DICHLOROETHENE	2/2/2021		Y	N	U		U	0.00095	0.00021	mg/kg
SW-8-20210128	460-227392-1	1,1-DICHLOROETHANE	2/2/2021		Y	N	U		U	0.00095	0.00020	mg/kg
SW-8-20210128	460-227392-1	1,1,2-TRICHLOROETHANE	2/2/2021		Y	N	U		U	0.00095	0.00017	mg/kg
SW-8-20210128	460-227392-1	2-HEXANONE	2/2/2021		Y	N	U		U	0.0047	0.0016	mg/kg
SW-8-20210128	460-227392-1	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	2/2/2021		Y	N	U		U	0.0047	0.0015	mg/kg
SW-8-20210128	460-227392-1	1,1,1-TRICHLOROETHANE	2/2/2021		Y	N	U		U	0.00095	0.00022	mg/kg
SW-8-20210128	460-227392-1	UNKNOWN VOLATILE ORGANIC WITH HIGHEST CONC.	2/2/2021	0.0058	Y	Y	J		J	0	0	mg/kg
SW-8-20210128	460-227392-1	TRICHLOROFLUOROMETHANE	2/2/2021		Y	N	U		U	0.00095	0.00039	mg/kg
SW-8-20210128	460-227392-1	VINYL CHLORIDE	2/2/2021		Y	N	U		U	0.00095	0.00052	mg/kg
SW-8-20210128	460-227392-1	TRANS-1,3-DICHLOROPROPENE	2/2/2021		Y	N	U		U	0.00095	0.00025	mg/kg
SW-8-20210128	460-227392-1	TRANS-1,2-DICHLOROETHENE	2/2/2021		Y	N	U		U	0.00095	0.00023	mg/kg
SW-8-20210128	460-227392-1	TOLUENE	2/2/2021		Y	N	U		U	0.00095	0.00022	mg/kg
SW-8-20210128	460-227392-1	TETRACHLOROETHYLENE(PCE)	2/2/2021	0.00050	Y	Y	J		J	0.00095	0.00029	mg/kg
SW-8-20210128	460-227392-1	TERT-BUTYL METHYL ETHER	2/2/2021		Y	N	U		U	0.00095	0.00049	mg/kg
SW-8-20210128	460-227392-1	STYRENE	2/2/2021		Y	N	U		U	0.00095	0.00026	mg/kg
SW-8-20210128	460-227392-1	O-XYLENE (1,2-DIMETHYLBENZENE)	2/2/2021		Y	N	U		U	0.00095	0.00018	mg/kg
SW-8-20210128	460-227392-1	METHYLCYCLOHEXANE	2/2/2021		Y	N	U		U	0.00095	0.00047	mg/kg
SW-8-20210128	460-227392-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	2/2/2021		Y	N	U		U	0.00095	0.00029	mg/kg
SW-8-20210128	460-227392-1	METHYL ETHYL KETONE (2-BUTANONE)	2/2/2021		Y	N	U		U	0.0047	0.00035	mg/kg
SW-8-20210128	460-227392-1	METHYL ACETATE	2/2/2021		Y	N	U		U	0.0047	0.0041	mg/kg
SW-8-20210128	460-227392-1	M,P-XYLENES	2/2/2021		Y	N	BJ	U	U	0.00095	0.00017	mg/kg
SW-8-20210128	460-227392-1	Isopropylbenzene (Cumene)	2/2/2021		Y	N	U		U	0.00095	0.00027	mg/kg
SW-8-20210128	460-227392-1	ETHYLBENZENE	2/2/2021		Y	N	U		U	0.00095	0.00019	mg/kg
SW-8-20210128	460-227392-1	DICHLORODIFLUOROMETHANE	2/2/2021		Y	N	U		U	0.00095	0.00032	mg/kg

SDG: 4602273921

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
SW-8-20210128	460-227392-1	DIBROMOCHLOROMETHANE	2/2/2021		Y	N	U		U	0.00095	0.00018	mg/kg
SW-8-20210128	460-227392-1	CYCLOHEXANE	2/2/2021		Y	N	U		U	0.00095	0.00021	mg/kg
SW-8-20210128	460-227392-1	CIS-1,3-DICHLOROPROPENE	2/2/2021		Y	N	U		U	0.00095	0.00026	mg/kg
SW-8-20210128	460-227392-1	Cis-1,2-Dichloroethylene	2/2/2021		Y	N	U		U	0.00095	0.00034	mg/kg
SW-8-20210128	460-227392-1	CHLOROMETHANE	2/2/2021		Y	N	U		U	0.00095	0.00041	mg/kg
SW-8-20210128	460-227392-1	METHYLENE CHLORIDE	2/2/2021		Y	N	U		U	0.0019	0.0011	mg/kg
FB20210128-20210128	460-227392-2	1,1,1-TRICHLOROETHANE	2/3/2021		Y	N	U		U	1.0	0.24	ug/l
FB20210128-20210128	460-227392-2	METHYLCYCLOHEXANE	2/3/2021		Y	N	U		U	1.0	0.71	ug/l
FB20210128-20210128	460-227392-2	1,1,2-TRICHLOROETHANE	2/3/2021		Y	N	U		U	1.0	0.20	ug/l
FB20210128-20210128	460-227392-2	Cis-1,2-Dichloroethylene	2/3/2021		Y	N	U		U	1.0	0.22	ug/l
FB20210128-20210128	460-227392-2	CIS-1,3-DICHLOROPROPENE	2/3/2021		Y	N	U		U	1.0	0.22	ug/l
FB20210128-20210128	460-227392-2	CYCLOHEXANE	2/3/2021		Y	N	U		U	1.0	0.32	ug/l
FB20210128-20210128	460-227392-2	DIBROMOCHLOROMETHANE	2/3/2021		Y	N	U		U	1.0	0.28	ug/l
FB20210128-20210128	460-227392-2	DICHLORODIFLUOROMETHANE	2/3/2021		Y	N	U		U	1.0	0.31	ug/l
FB20210128-20210128	460-227392-2	ETHYLBENZENE	2/3/2021		Y	N	U		U	1.0	0.30	ug/l
FB20210128-20210128	460-227392-2	Isopropylbenzene (Cumene)	2/3/2021		Y	N	U		U	1.0	0.34	ug/l
FB20210128-20210128	460-227392-2	M,P-XYLENES	2/3/2021		Y	N	U		U	1.0	0.30	ug/l
FB20210128-20210128	460-227392-2	METHYL ACETATE	2/3/2021		Y	N	U		U	5.0	0.79	ug/l
FB20210128-20210128	460-227392-2	CHLOROFORM	2/3/2021		Y	N	U		U	1.0	0.33	ug/l
FB20210128-20210128	460-227392-2	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	2/3/2021		Y	N	U		U	5.0	1.3	ug/l
FB20210128-20210128	460-227392-2	CHLOROETHANE	2/3/2021		Y	N	U		U	1.0	0.32	ug/l
FB20210128-20210128	460-227392-2	METHYLENE CHLORIDE	2/3/2021	0.33	Y	Y	J		J	1.0	0.32	ug/l
FB20210128-20210128	460-227392-2	O-XYLENE (1,2-DIMETHYLBENZENE)	2/3/2021		Y	N	U		U	1.0	0.36	ug/l
FB20210128-20210128	460-227392-2	STYRENE	2/3/2021		Y	N	U		U	1.0	0.42	ug/l

SDG: 4602273921

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
FB20210128-20210128	460-227392-2	TERT-BUTYL METHYL ETHER	2/3/2021		Y	N	U		U	1.0	0.22	ug/l
FB20210128-20210128	460-227392-2	TETRACHLOROETHYLENE(PCE)	2/3/2021		Y	N	U		U	1.0	0.25	ug/l
FB20210128-20210128	460-227392-2	TOLUENE	2/3/2021		Y	N	U		U	1.0	0.38	ug/l
FB20210128-20210128	460-227392-2	TRANS-1,2-DICHLOROETHENE	2/3/2021		Y	N	U		U	1.0	0.24	ug/l
FB20210128-20210128	460-227392-2	TRANS-1,3-DICHLOROPROPENE	2/3/2021		Y	N	U		U	1.0	0.22	ug/l
FB20210128-20210128	460-227392-2	TRICHLOROETHYLENE (TCE)	2/3/2021		Y	N	U		U	1.0	0.31	ug/l
FB20210128-20210128	460-227392-2	TRICHLOROFLUOROMETHANE	2/3/2021		Y	N	U		U	1.0	0.32	ug/l
FB20210128-20210128	460-227392-2	VINYL CHLORIDE	2/3/2021		Y	N	U		U	1.0	0.17	ug/l
FB20210128-20210128	460-227392-2	METHYL ETHYL KETONE (2-BUTANONE)	2/3/2021		Y	N	U		U	5.0	1.9	ug/l
FB20210128-20210128	460-227392-2	1,4-DICHLOROBENZENE	2/3/2021		Y	N	U		U	1.0	0.33	ug/l
FB20210128-20210128	460-227392-2	1,1,2,2-TETRACHLOROETHANE	2/3/2021		Y	N	U		U	1.0	0.37	ug/l
FB20210128-20210128	460-227392-2	1,1-DICHLOROETHANE	2/3/2021		Y	N	U		U	1.0	0.26	ug/l
FB20210128-20210128	460-227392-2	1,1-DICHLOROETHENE	2/3/2021		Y	N	U		U	1.0	0.26	ug/l
FB20210128-20210128	460-227392-2	1,2,3-TRICHLOROBENZENE	2/3/2021		Y	N	U		U	1.0	0.36	ug/l
FB20210128-20210128	460-227392-2	1,2,4-TRICHLOROBENZENE	2/3/2021		Y	N	U		U	1.0	0.37	ug/l
FB20210128-20210128	460-227392-2	1,2-DIBROMO-3-CHLOROPROPANE	2/3/2021		Y	N	U		U	1.0	0.38	ug/l
FB20210128-20210128	460-227392-2	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	2/3/2021		Y	N	U		U	1.0	0.50	ug/l
FB20210128-20210128	460-227392-2	1,2-DICHLOROBENZENE	2/3/2021		Y	N	U		U	1.0	0.21	ug/l
FB20210128-20210128	460-227392-2	1,2-DICHLOROETHANE	2/3/2021		Y	N	U		U	1.0	0.43	ug/l
FB20210128-20210128	460-227392-2	CHLOROMETHANE	2/3/2021		Y	N	U		U	1.0	0.40	ug/l
FB20210128-20210128	460-227392-2	1,3-DICHLOROBENZENE	2/3/2021		Y	N	U		U	1.0	0.34	ug/l
FB20210128-20210128	460-227392-2	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	2/3/2021		Y	N	U		U	1.0	0.31	ug/l
FB20210128-20210128	460-227392-2	1,4-DIOXANE (P-DIOXANE)	2/3/2021		Y	N	U		U	50	28	ug/l
FB20210128-20210128	460-227392-2	2-HEXANONE	2/3/2021		Y	N	U		U	5.0	1.1	ug/l

SDG: 4602273921

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
FB20210128-20210128	460-227392-2	ACETONE	2/3/2021		Y	N	U		U	5.0	4.4	ug/l
FB20210128-20210128	460-227392-2	BENZENE	2/3/2021		Y	N	U		U	1.0	0.20	ug/l
FB20210128-20210128	460-227392-2	BROMOCHLOROMETHANE	2/3/2021		Y	N	U		U	1.0	0.41	ug/l
FB20210128-20210128	460-227392-2	BROMODICHLOROMETHANE	2/3/2021		Y	N	U		U	1.0	0.34	ug/l
FB20210128-20210128	460-227392-2	BROMOFORM	2/3/2021		Y	N	U		U	1.0	0.54	ug/l
FB20210128-20210128	460-227392-2	BROMOMETHANE	2/3/2021		Y	N	U		U	1.0	0.55	ug/l
FB20210128-20210128	460-227392-2	CARBON DISULFIDE	2/3/2021		Y	N	U		U	1.0	0.82	ug/l
FB20210128-20210128	460-227392-2	CARBON TETRACHLORIDE	2/3/2021		Y	N	U		U	1.0	0.21	ug/l
FB20210128-20210128	460-227392-2	CHLOROBENZENE	2/3/2021		Y	N	U		U	1.0	0.38	ug/l
FB20210128-20210128	460-227392-2	1,2-DICHLOROPROPANE	2/3/2021		Y	N	U		U	1.0	0.35	ug/l
TB20210128-20210128	460-227392-3	CHLOROBENZENE	2/3/2021		Y	N	U		U	1.0	0.38	ug/l
TB20210128-20210128	460-227392-3	METHYLENE CHLORIDE	2/3/2021		Y	N	U		U	1.0	0.32	ug/l
TB20210128-20210128	460-227392-3	Cis-1,2-Dichloroethylene	2/3/2021		Y	N	U		U	1.0	0.22	ug/l
TB20210128-20210128	460-227392-3	CIS-1,3-DICHLOROPROPENE	2/3/2021		Y	N	U		U	1.0	0.22	ug/l
TB20210128-20210128	460-227392-3	CYCLOHEXANE	2/3/2021		Y	N	U		U	1.0	0.32	ug/l
TB20210128-20210128	460-227392-3	DIBROMOCHLOROMETHANE	2/3/2021		Y	N	U		U	1.0	0.28	ug/l
TB20210128-20210128	460-227392-3	DICHLORODIFLUOROMETHANE	2/3/2021		Y	N	U		U	1.0	0.31	ug/l
TB20210128-20210128	460-227392-3	ETHYLBENZENE	2/3/2021		Y	N	U		U	1.0	0.30	ug/l
TB20210128-20210128	460-227392-3	Isopropylbenzene (Cumene)	2/3/2021		Y	N	U		U	1.0	0.34	ug/l
TB20210128-20210128	460-227392-3	M,P-XYLENES	2/3/2021		Y	N	U		U	1.0	0.30	ug/l
TB20210128-20210128	460-227392-3	METHYL ACETATE	2/3/2021		Y	N	U		U	5.0	0.79	ug/l
TB20210128-20210128	460-227392-3	METHYL ETHYL KETONE (2-BUTANONE)	2/3/2021		Y	N	U		U	5.0	1.9	ug/l
TB20210128-20210128	460-227392-3	CARBON DISULFIDE	2/3/2021		Y	N	U		U	1.0	0.82	ug/l
TB20210128-20210128	460-227392-3	METHYLCYCLOHEXANE	2/3/2021		Y	N	U		U	1.0	0.71	ug/l
TB20210128-20210128	460-227392-3	CHLOROETHANE	2/3/2021		Y	N	U		U	1.0	0.32	ug/l

SDG: 4602273921

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
TB20210128-20210128	460-227392-3	O-XYLENE (1,2-DIMETHYLBENZENE)	2/3/2021		Y	N	U		U	1.0	0.36	ug/l
TB20210128-20210128	460-227392-3	STYRENE	2/3/2021		Y	N	U		U	1.0	0.42	ug/l
TB20210128-20210128	460-227392-3	TERT-BUTYL METHYL ETHER	2/3/2021		Y	N	U		U	1.0	0.22	ug/l
TB20210128-20210128	460-227392-3	TETRACHLOROETHYLENE(PCE)	2/3/2021		Y	N	U		U	1.0	0.25	ug/l
TB20210128-20210128	460-227392-3	TOLUENE	2/3/2021		Y	N	U		U	1.0	0.38	ug/l
TB20210128-20210128	460-227392-3	TRANS-1,2-DICHLOROETHENE	2/3/2021		Y	N	U		U	1.0	0.24	ug/l
TB20210128-20210128	460-227392-3	TRANS-1,3-DICHLOROPROPENE	2/3/2021		Y	N	U		U	1.0	0.22	ug/l
TB20210128-20210128	460-227392-3	TRICHLOROETHYLENE (TCE)	2/3/2021		Y	N	U		U	1.0	0.31	ug/l
TB20210128-20210128	460-227392-3	TRICHLOROFLUOROMETHANE	2/3/2021		Y	N	U		U	1.0	0.32	ug/l
TB20210128-20210128	460-227392-3	VINYL CHLORIDE	2/3/2021		Y	N	U		U	1.0	0.17	ug/l
TB20210128-20210128	460-227392-3	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	2/3/2021		Y	N	U		U	5.0	1.3	ug/l
TB20210128-20210128	460-227392-3	1,3-DICHLOROBENZENE	2/3/2021		Y	N	U		U	1.0	0.34	ug/l
TB20210128-20210128	460-227392-3	1,1,2,2-TETRACHLOROETHANE	2/3/2021		Y	N	U		U	1.0	0.37	ug/l
TB20210128-20210128	460-227392-3	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	2/3/2021		Y	N	U		U	1.0	0.31	ug/l
TB20210128-20210128	460-227392-3	1,1,2-TRICHLOROETHANE	2/3/2021		Y	N	U		U	1.0	0.20	ug/l
TB20210128-20210128	460-227392-3	1,1-DICHLOROETHANE	2/3/2021		Y	N	U		U	1.0	0.26	ug/l
TB20210128-20210128	460-227392-3	1,1-DICHLOROETHENE	2/3/2021		Y	N	U		U	1.0	0.26	ug/l
TB20210128-20210128	460-227392-3	1,2,3-TRICHLOROBENZENE	2/3/2021		Y	N	U		U	1.0	0.36	ug/l
TB20210128-20210128	460-227392-3	1,2,4-TRICHLOROBENZENE	2/3/2021		Y	N	U		U	1.0	0.37	ug/l
TB20210128-20210128	460-227392-3	1,2-DIBROMO-3-CHLOROPROPANE	2/3/2021		Y	N	U		U	1.0	0.38	ug/l
TB20210128-20210128	460-227392-3	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	2/3/2021		Y	N	U		U	1.0	0.50	ug/l
TB20210128-20210128	460-227392-3	1,2-DICHLOROBENZENE	2/3/2021		Y	N	U		U	1.0	0.21	ug/l
TB20210128-20210128	460-227392-3	CHLOROMETHANE	2/3/2021		Y	N	U		U	1.0	0.40	ug/l
TB20210128-20210128	460-227392-3	1,2-DICHLOROPROPANE	2/3/2021		Y	N	U		U	1.0	0.35	ug/l

SDG: 4602273921

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
TB20210128-20210128	460-227392-3	CHLOROFORM	2/3/2021		Y	N	U		U	1.0	0.33	ug/l
TB20210128-20210128	460-227392-3	1,4-DICHLOROBENZENE	2/3/2021		Y	N	U		U	1.0	0.33	ug/l
TB20210128-20210128	460-227392-3	1,4-DIOXANE (P-DIOXANE)	2/3/2021		Y	N	U		U	50	28	ug/l
TB20210128-20210128	460-227392-3	2-HEXANONE	2/3/2021		Y	N	U		U	5.0	1.1	ug/l
TB20210128-20210128	460-227392-3	ACETONE	2/3/2021	8.9	Y	Y				5.0	4.4	ug/l
TB20210128-20210128	460-227392-3	BENZENE	2/3/2021		Y	N	U		U	1.0	0.20	ug/l
TB20210128-20210128	460-227392-3	BROMOCHLOROMETHANE	2/3/2021		Y	N	U		U	1.0	0.41	ug/l
TB20210128-20210128	460-227392-3	BROMODICHLOROMETHANE	2/3/2021		Y	N	U		U	1.0	0.34	ug/l
TB20210128-20210128	460-227392-3	BROMOFORM	2/3/2021		Y	N	U		U	1.0	0.54	ug/l
TB20210128-20210128	460-227392-3	BROMOMETHANE	2/3/2021		Y	N	U		U	1.0	0.55	ug/l
TB20210128-20210128	460-227392-3	CARBON TETRACHLORIDE	2/3/2021		Y	N	U		U	1.0	0.21	ug/l
TB20210128-20210128	460-227392-3	1,1,1-TRICHLOROETHANE	2/3/2021		Y	N	U		U	1.0	0.24	ug/l
TB20210128-20210128	460-227392-3	1,2-DICHLOROETHANE	2/3/2021		Y	N	U		U	1.0	0.43	ug/l

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

GEI Consultants
110 Walt Whitman Road, Suite 204
Huntington Station, NY 11746
ATTN: Mr. Bill Fitchett
Wfitchett@geiconsultants.com

March 9, 2021

SUBJECT: Long Island City, 30th Street, Data Usability Summary Report.

Dear Mr. Fitchett,

Enclosed is the final validation report for the fraction listed below. This SDG was received on February 24, 2021. Attachment 1 is a summary of the samples that were reviewed for analysis.

LDC Project #50530:

SDG #	**Fraction**
460-228071-1	Volatiles

The data validation was performed under modified Category B guidelines using quality control summaries provided by the laboratory. The analyses were validated using the following documents, as applicable to each method:

- USEPA Region 2 Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-Method 8260B and 8260C, SOP HW-24, Revision 4; October 2014
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, EPA 540-R-2017-002; January 2017
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Christina Rink

Christina Rink
crink@lab-data.com
Project Manager/Senior Chemist

53 pages-ADV EQUIS EDD/ NYDUSR Attachment 1

Category B **LDC #50530 (GEI Consultants, Inc. - Huntington Station, NY / 30th Street, Long Island City, Site No. C241214)**

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260D)																															
Matrix: Water/Soil				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	460-228071-1	02/24/21	03/17/21	2	9																														

Site: Long Island City, 30th Street
Laboratory: Eurofins
Report No.: 460-228071-1
Reviewer: Josephine Go and Christina Rink/Laboratory Data Consultants for GEI Consultants, Inc. – Huntington Station, NY
Date: March 8, 2021

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
EP-3	460-228071-1	VOC
EP-4	460-228071-2	VOC
EP-8	460-228071-3	VOC
EP-9	460-228071-4	VOC
EP-12	460-228071-5	VOC
EP-13	460-228071-6	VOC
EP-17	460-228071-7	VOC
EP-18	460-228071-8	VOC
SW-9	460-228071-9	VOC
FB20210211	460-228071-10	VOC
TB20210211	460-228071-11	VOC

Associated QC Samples(s):
Field/TB20210128s: TB20210211, FB20210211
Field Duplicate pair: None Associated

The above-listed soil and water samples were collected on February 11, 2021 and were analyzed for volatile organic compounds (VOCs) by SW-846 method 8260D. The data validation was performed in accordance with the USEPA Region 2 *Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-Method 8260B and 8260C,* SOP HW-24, Revision 4 (October 2014) and the USEPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,* EPA 540-R-2017-002 (January 2017), modified as necessary to accommodate the non-CLP methodologies used.

The organic data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) Tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Control Sample (LCS) Results
- Internal Standards
- Field Duplicate Results
- Moisture Content
- Quantitation Limits and Data Assessment
- Sample Quantitation and Compound Identification

Overall Evaluation of Data and Potential Usability Issues

All results are usable as reported or usable with minor qualification due to laboratory quality control outliers.

The validation findings were based on the following information.

Data Completeness

The data package was complete as defined under the requirements for the NYSDEC ASP category B laboratory deliverables.

Holding Times and Sample Preservation

All criteria were met.

GC/MS Tunes

All criteria were met.

Initial and Continuing Calibrations

Initial Calibration:

All criteria were met.

Continuing calibration:

Compounds that did not meet criteria are summarized in the following table.

Date	Standard ID	Compound	CC %D	Associated Samples		Validation Action
02/12/21	069152	Bromomethane 1,2,3-Trichlorobenzene	28.6 21.4	FB20210211 TB20210211	XX XX	UJ nondetects UJ nondetects
02/15/21	B69004	1,1,2-Trichloro-1,2,2-trifluoroethane	20.7	EP-3 EP-4 EP-8 EP-9 EP-12	XX	UJ nondetects
02/16/21	B069033	1,1,2-Trichloro-1,2,2-trifluoroethane	22.8	EP-13 EP-17 EP-18 SW-9	XX	UJ nondetects

X = Initial calibration (IC) relative standard deviation (%RSD) > 20; estimate (J/UJ) positive and nondetect results.
XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ) positive and nondetect results.
SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.
+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The bromomethane, 1,2,3-trichlorobenzene, and 1,1,2-trichloro-1,2,2-trifluoroethane results for the samples listed above were estimated due to continuing calibration exceedances. The bias cannot be determined. The results can be used for project objectives as nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Blanks

Contamination was not detected in the method blanks.

No positive results were found in the trip blank samples TB20210211 and field blank sample FB20210211 for VOC analysis.

Surrogate Recoveries

All criteria were met.

MS/MSD Results

MS/MSD analyses were not associated with this sample set. Validation action was not required on this basis.

LCS Results

All criteria were met.

Internal Standards

All criteria were met.

Field Duplicate Results

A field duplicate pair was not associated with this sample set. Validation action was not required on this basis.

Moisture Content

All criteria were met.

Quantitation Limits and Data Assessment

No results were reported below the reporting limit (RL) and above the method detection limit (MDL) in the VOC analysis.

Dilutions were not required for VOC analysis.

Sample Quantitation and Compound Identification

Calculations were spot-checked; no discrepancies were noted.

DATA VALIDATION QUALIFIERS

U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.

J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.

JN - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.

R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

LDC #: 50530A1a
SDG #: 460-228071-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Category B

Date: 03/04/21
Page: 1 of 1
Reviewer: SVG
2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / SW A	ICAL ≤ 20%, r ≥ ICV ≤ 30%
IV.	Continuing calibration	SW	CCV ≤ 20%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	FB = 10 TB = 11
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	A	LCS/D
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1 2	EP-3	460-228071-1	Soil	02/11/21
2 2	EP-4	460-228071-2	Soil	02/11/21
3 2	EP-8	460-228071-3	Soil	02/11/21
4 2	EP-9	460-228071-4	Soil	02/11/21
5 2	EP-12	460-228071-5	Soil	02/11/21
6 3	EP-13	460-228071-6	Soil	02/11/21
7 3	EP-17	460-228071-7	Soil	02/11/21
8 3	EP-18	460-228071-8	Soil	02/11/21
9 3	SW-9	460-228071-9	Soil	02/11/21
10 4	FB20210211	460-228071-10	Water	02/11/21
11 4	TB20210211	460-228071-11	Water	02/11/21
12				
13				
14 1	MB 460-758912/8	4- MB 460-758561/8		
2 -	- 758996/7	-1 LBB 460-758627/1-A		
3 -	- 759242/7			

LDC #: 50930 A16

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG

Method: Volatiles (EPA SW 846 Method 8260C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20% and relative response factors (RRF) within method criteria?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 30%?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 20% and relative response factors (RRF) within method criteria?		✓		
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks were identified in this SDG?	✓			
Were target compounds detected in the field blanks?		✓		
VII. Surrogate spikes				
Were all surrogate percent recovery (%R) within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
X. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds detected in the field duplicates?			✓	
XI. Internal standards				
Were internal standard area counts within -50% to +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XII. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	AA. Tetrachloroethene	AAA. 1,3,5-Trimethylbenzene	AAAA. Ethyl tert-butyl ether	A1. 1,3-Butadiene	A2.
B. Bromomethane	BB. 1,1,2,2-Tetrachloroethane	BBB. 4-Chlorotoluene	BBBB. tert-Amyl methyl ether	B1. Hexane	B2.
C. Vinyl choride	CC. Toluene	CCC. tert-Butylbenzene	CCCC. 1-Chlorohexane	C1. Heptane	C2.
D. Chloroethane	DD. Chlorobenzene	DDD. 1,2,4-Trimethylbenzene	DDDD. Isopropyl alcohol	D1. Propylene	D2.
E. Methylene chloride	EE. Ethylbenzene	EEE. sec-Butylbenzene	EEEE. Acetonitrile	E1. Freon 11	E2.
F. Acetone	FF. Styrene	FFF. 1,3-Dichlorobenzene	FFFF. Acrolein	F1. Freon 12	F2.
G. Carbon disulfide	GG. Xylenes, total	GGG. p-Isopropyltoluene	GGGG. Acrylonitrile	G1. Freon 113	G2.
H. 1,1-Dichloroethene	HH. Vinyl acetate	HHH. 1,4-Dichlorobenzene	HHHH. 1,4-Dioxane	H1. Freon 114	H2.
I. 1,1-Dichloroethane	II. 2-Chloroethylvinyl ether	III. n-Butylbenzene	IIII. Isobutyl alcohol	I1. 2-Nitropropane	I2.
J. 1,2-Dichloroethene, total	JJ. Dichlorodifluoromethane	JJJ. 1,2-Dichlorobenzene	JJJJ. Methacrylonitrile	J1. Dimethyl disulfide	J2.
K. Chloroform	KK. Trichlorofluoromethane	KKK. 1,2,4-Trichlorobenzene	KKKK. Propionitrile	K1. 2,3-Dimethyl pentane	K2.
L. 1,2-Dichloroethane	LL. Methyl-tert-butyl ether	LLL. Hexachlorobutadiene	LLLL. Ethyl ether	L1. 2,4-Dimethyl pentane	L2.
M. 2-Butanone	MM. 1,2-Dibromo-3-chloropropane	MMM. Naphthalene	MMMM. Benzyl chloride	M1. 3,3-Dimethyl pentane	M2.
N. 1,1,1-Trichloroethane	NN. Methyl ethyl ketone	NNN. 1,2,3-Trichlorobenzene	NNNN. Iodomethane	N1. 2-Methylpentane	N2.
O. Carbon tetrachloride	OO. 2,2-Dichloropropane	OOO. 1,3,5-Trichlorobenzene	OOOO.1,1-Difluoroethane	O1. 3-Methylpentane	O2.
P. Bromodichloromethane	PP. Bromochloromethane	PPP. trans-1,2-Dichloroethene	PPPP. Tetrahydrofuran	P1. 3-Ethylpentane	P2.
Q. 1,2-Dichloropropane	QQ. 1,1-Dichloropropene	QQQ. cis-1,2-Dichloroethene	QQQQ. Methyl acetate	Q1. 2,2-Dimethylpentane	Q2.
R. cis-1,3-Dichloropropene	RR. Dibromomethane	RRR. m,p-Xylenes	RRRR. Ethyl acetate	R1. 2,2,3- Trimethylbutane	R2.
S. Trichloroethene	SS. 1,3-Dichloropropane	SSS. o-Xylene	SSSS. Cyclohexane	S1. 2,2,4-Trimethylpentane	S2.
T. Dibromochloromethane	TT. 1,2-Dibromoethane	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	TTTT. Methylcyclohexane	T1. 2-Methylhexane	T2.
U. 1,1,2-Trichloroethane	UU. 1,1,1,2-Tetrachloroethane	UUU. 1,2-Dichlorotetrafluoroethane	UUUU. Allyl chloride	U1. Nonanal	U2.
V. Benzene	VV. Isopropylbenzene	VVV. 4-Ethyltoluene	VVVV. Methyl methacrylate	V1. 2-Methylnaphthalene	V2.
W. trans-1,3-Dichloropropene	WW. Bromobenzene	WWW. Ethanol	WWWW. Ethyl methacrylate	W1. Methanol	W2.
X. Bromoform	XX. 1,2,3-Trichloropropane	XXX. Di-isopropyl ether	XXXX. cis-1,4-Dichloro-2-butene	X1. 1,2,3-Trimethylbenzene	X2.
Y. 4-Methyl-2-pentanone	YY. n-Propylbenzene	YYY. tert-Butanol	YYYY. trans-1,4-Dichloro-2-butene	Y1. 2-Propanol	Y2.
Z. 2-Hexanone	ZZ. 2-Chlorotoluene	ZZZ. tert-Butyl alcohol	ZZZZ. Pentachloroethane	Z1.	Z2.

LDC #: 50530 A1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260~~B~~)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Y (N) N/A Were percent differences (%D) ≤20 % and relative response factors (RRF) within the method criteria?

#	Date	Standard ID	Compound	Finding %D (Limit: <20.0%)	Finding RRF (Limit)	Associated Samples	Qualifications
	02/12/21	069152	B	28.6		10, 11, MB4 (ND)	J (NJ) A
			NNN	21.4			
	02/15/21	B69004	TTT	20.7		1-5, MB2 (ND)	
	02/16/21	B69033	TTT	22.8		6-9, MB3 (ND)	

Note: * = Ave RRF failed method criteria but within validation criteria

LDC#: 50530A1a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound
S= Standard deviation of the RRFs

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 50 std)	Recalculated RRF (RRF 50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL CVOAMS12	1/28/2021	Acetone (BUT)	0.1733	0.1733	0.2023	0.2023	11.0	11.0
			Trichloroethene (FBZ)	0.2576	0.2576	0.2511	0.2511	6.3	6.2
			1,4-Dioxane (DXE)	1.0422	1.0422	1.0343	1.0343	9.0	9.0
			Tetrachloroethene (CBZ)	0.3296	0.3296	0.3246	0.3246	8.3	8.3
			1,2,4-TCB (DCB)	0.8065	0.8065	0.7337	0.7337	9.0	9.0
2	ICAL CVOAMS2	2/11/2021	Acetone (BUT)	0.7951	0.7951	0.9394	0.9394	16.7	16.7
			Trichloroethene (FBZ)	0.2963	0.2963	0.3067	0.3067	5.6	5.6
			1,4-Dioxane (DXE)	see r2 calc					
			Tetrachloroethene (CBZ)	0.4233	0.4233	0.4127	0.4127	11.7	11.7
			1,2,4-TCB (DCB)	1.3371	1.3371	1.4021	1.4021	6.5	6.5

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Method: (EPA SW 846 Method 8260D)

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Conc ratio	(X^2) Conc ratio
2/11/2021	VOAMS2	1,4-Dioxane	20	0.0152	0.02	0.00040
			100	0.1455	0.10	0.0100
		IS = 1,4-Dioxane-d8	400	0.5687	0.40	0.1600
			1000	1.4342	1.00	1.0000
			4000	4.5274	4.00	16.0000
			10000	10.5913	10.00	100.0000

Regression Output	Calculated		*Reported WQR*	
Constant	*c*	*0.00000*	*c*	*0.00000*
Std Err of Y Est				
R Squared	*r2*	*0.9995*	*r2*	*0.9990*
Degrees of Freedom				
	m1	*m2*	*m1*	*m2*
X Coefficient(s)	*1.22271E+00*	*-1.6493E-02*	*1.22271E+00*	*-1.6490E-05*
Std Err of Coef.				
Correlation Coefficient		*0.999743*		
Coefficient of Determination (r^2)		*0.999486*		

LDC#: 50530A1a_

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound	(IS)	Average RRF (Initial)	Reported RRF (CCV)	Recalculated RRF (CCV)	Reported % D	Recalculated %D
1	O69152	2/12/2021	Acetone	(BUT)	0.2023	0.1771	0.1771	12.4	12.4
			Trichloroethene	(FBZ)	0.2511	0.2671	0.2671	6.4	6.4
			1,4-Dioxane	(DXE)	1.0343	1.0432	1.0432	0.9	0.9
			Tetrachloroethene	(CBZ)	0.3246	0.3394	0.3394	4.6	4.6
			1,2,4-TCB	(DCB)	0.7337	0.8516	0.8516	16.1	16.1
2	B69004	2/15/2021	Acetone	(BUT)	0.9394	0.9244	0.9244	1.6	1.6
			Trichloroethene	(FBZ)	0.3067	0.3194	0.3194	4.1	4.1
			1,4-Dioxane	(DXE)	400.00	433.00	430.26	8.2	8.3
			Tetrachloroethene	(CBZ)	0.4127	0.4290	0.4290	3.9	3.9
			1,2,4-TCB	(DCB)	1.4021	1.3695	1.3695	2.3	2.3
3	B69033	2/16/2021	Acetone	(BUT)	0.9394	0.9184	0.9184	2.2	2.2
			Trichloroethene	(FBZ)	0.3067	0.3074	0.3074	0.2	0.2
			1,4-Dioxane	(DXE)	400.00	413.00	410.78	3.3	3.3
			Tetrachloroethene	(CBZ)	0.4127	0.4090	0.4090	0.9	0.9
			1,2,4-TCB	(DCB)	1.4021	1.2975	1.2975	7.5	7.5

LDC #: 50530 A1a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: II 1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	50.0	45.7	91	91	9
1,2-Dichloroethane-d4		57.8	116	116	
Toluene-d8		49.4	99	99	
Bromofluorobenzene		48.7	97	97	

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 50530 A19

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration; SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: LCS/D 468-758996/3,4

Compound	Spike Added (mg/kg)		Spiked Sample Concentration (mg/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
1,1-Dichloroethene	0.0200	0.0200	0.0229	0.0221	115	115	110	110.5	4	4
Trichloroethene			0.0210	0.0195	105	105	97	97.5	7	7
Benzene			0.0219	0.0211	110	110	106	106	4	4
Toluene			0.0215	0.0205	108	108	102	102.5	5	5
Chlorobenzene	↓	↓	0.0208	0.0199	104	104	99	99.5	4	4

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 50590 A1A

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The concentration of the sample was calculated for the compound identified below using the following calculation:

$$\text{Concentration} = \frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 1, PCE

$$\text{Conc.} = \frac{(3570)(50)(5\ mL)}{(516355)(0.4127)(5.90g)(0.88)(1000)}$$

$$= 0.000807\ mg/kg$$

#	Sample ID	Compound	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Qualification
	1	PCE	0.00081	0.00081	—

30th Street, Long Island, NY - LDC# 50530

SDG: 4602280711

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EP-12-20210211	460-228071-5	METHYL ETHYL KETONE (2-BUTANONE)	2/15/2021		Y	N	U		U	0.0049	0.00036	mg/kg
EP-12-20210211	460-228071-5	BROMODICHLOROMETHANE	2/15/2021		Y	N	U		U	0.00098	0.00025	mg/kg
EP-12-20210211	460-228071-5	BROMOFORM	2/15/2021		Y	N	U		U	0.00098	0.00041	mg/kg
EP-12-20210211	460-228071-5	CARBON DISULFIDE	2/15/2021		Y	N	U		U	0.00098	0.00026	mg/kg
EP-12-20210211	460-228071-5	CARBON TETRACHLORIDE	2/15/2021		Y	N	U		U	0.00098	0.00038	mg/kg
EP-12-20210211	460-228071-5	CHLOROBENZENE	2/15/2021		Y	N	U		U	0.00098	0.00017	mg/kg
EP-12-20210211	460-228071-5	CHLOROETHANE	2/15/2021		Y	N	U		U	0.00098	0.00051	mg/kg
EP-12-20210211	460-228071-5	CHLOROFORM	2/15/2021		Y	N	U		U	0.00098	0.00095	mg/kg
EP-12-20210211	460-228071-5	CHLOROMETHANE	2/15/2021		Y	N	U		U	0.00098	0.00042	mg/kg
EP-12-20210211	460-228071-5	CIS-1,3-DICHLOROPROPENE	2/15/2021		Y	N	U		U	0.00098	0.00027	mg/kg
EP-12-20210211	460-228071-5	DIBROMOCHLOROMETHANE	2/15/2021		Y	N	U		U	0.00098	0.00019	mg/kg
EP-12-20210211	460-228071-5	DICHLORODIFLUOROMETHANE	2/15/2021		Y	N	U		U	0.00098	0.00033	mg/kg
EP-12-20210211	460-228071-5	BROMOCHLOROMETHANE	2/15/2021		Y	N	U		U	0.00098	0.00027	mg/kg
EP-12-20210211	460-228071-5	METHYL ACETATE	2/15/2021		Y	N	U		U	0.0049	0.0042	mg/kg
EP-12-20210211	460-228071-5	Cis-1,2-Dichloroethylene	2/15/2021		Y	N	U		U	0.00098	0.00035	mg/kg
EP-12-20210211	460-228071-5	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	2/15/2021		Y	N	U		U	0.0049	0.0015	mg/kg
EP-12-20210211	460-228071-5	METHYLCYCLOHEXANE	2/15/2021		Y	N	U		U	0.00098	0.00049	mg/kg
EP-12-20210211	460-228071-5	METHYLENE CHLORIDE	2/15/2021		Y	N	U		U	0.0020	0.0011	mg/kg
EP-12-20210211	460-228071-5	STYRENE	2/15/2021		Y	N	U		U	0.00098	0.00027	mg/kg
EP-12-20210211	460-228071-5	TERT-BUTYL METHYL ETHER	2/15/2021		Y	N	U		U	0.00098	0.00050	mg/kg
EP-12-20210211	460-228071-5	TRANS-1,2-DICHLOROETHENE	2/15/2021		Y	N	U		U	0.00098	0.00024	mg/kg

SDG: 4602280711

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EP-12-20210211	460-228071-5	TRANS-1,3-DICHLOROPROPENE	2/15/2021		Y	N	U		U	0.00098	0.00026	mg/kg
EP-12-20210211	460-228071-5	TRICHLOROETHYLENE (TCE)	2/15/2021		Y	N	U		U	0.00098	0.00031	mg/kg
EP-12-20210211	460-228071-5	TRICHLOROFLUOROMETHANE	2/15/2021		Y	N	U		U	0.00098	0.00040	mg/kg
EP-12-20210211	460-228071-5	VINYL CHLORIDE	2/15/2021		Y	N	U		U	0.00098	0.00053	mg/kg
EP-12-20210211	460-228071-5	1,2,3-TRICHLOROBENZENE	2/15/2021		Y	N	U		U	0.00098	0.00018	mg/kg
EP-12-20210211	460-228071-5	BROMOMETHANE	2/15/2021		Y	N	U		U	0.0020	0.00098	mg/kg
EP-12-20210211	460-228071-5	Isopropylbenzene (Cumene)	2/15/2021		Y	N	U		U	0.00098	0.00028	mg/kg
EP-12-20210211	460-228071-5	M,P-XYLENES	2/15/2021	0.0006	Y	Y	J		J	0.00098	0.00017	mg/kg
EP-12-20210211	460-228071-5	ACETONE	2/15/2021	0.018	Y	Y				0.0059	0.0056	mg/kg
EP-12-20210211	460-228071-5	CYCLOHEXANE	2/15/2021		Y	N	U		U	0.00098	0.00022	mg/kg
EP-12-20210211	460-228071-5	ETHYLBENZENE	2/15/2021	0.0002	Y	Y	J		J	0.00098	0.00019	mg/kg
EP-12-20210211	460-228071-5	BENZENE	2/15/2021		Y	N	U		U	0.00098	0.00025	mg/kg
EP-12-20210211	460-228071-5	O-XYLENE (1,2-DIMETHYLBENZENE)	2/15/2021	0.0003	Y	Y	J		J	0.00098	0.00019	mg/kg
EP-12-20210211	460-228071-5	TETRACHLOROETHYLENE(PCE)	2/15/2021	0.0007	Y	Y	J		J	0.00098	0.00030	mg/kg
EP-12-20210211	460-228071-5	TOLUENE	2/15/2021	0.0007	Y	Y	J		J	0.00098	0.00023	mg/kg
EP-12-20210211	460-228071-5	1,1,1-TRICHLOROETHANE	2/15/2021		Y	N	U		U	0.00098	0.00023	mg/kg
EP-12-20210211	460-228071-5	1,1,2,2-TETRACHLOROETHANE	2/15/2021		Y	N	U		U	0.00098	0.00021	mg/kg
EP-12-20210211	460-228071-5	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	2/15/2021		Y	N	U	UJ	UJ	0.00098	0.00029	mg/kg
EP-12-20210211	460-228071-5	1,1,2-TRICHLOROETHANE	2/15/2021		Y	N	U		U	0.00098	0.00017	mg/kg
EP-12-20210211	460-228071-5	1,1-DICHLOROETHANE	2/15/2021		Y	N	U		U	0.00098	0.00020	mg/kg
EP-12-20210211	460-228071-5	1,1-DICHLOROETHENE	2/15/2021		Y	N	U		U	0.00098	0.00022	mg/kg
EP-12-20210211	460-228071-5	1,4-DICHLOROBENZENE	2/15/2021		Y	N	U		U	0.00098	0.00022	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EP-12-20210211	460-228071-5	2-HEXANONE	2/15/2021		Y	N	U		U	0.0049	0.0017	mg/kg
EP-12-20210211	460-228071-5	1,4-DIOXANE (P-DIOXANE)	2/15/2021		Y	N	U		U	0.020	0.0090	mg/kg
EP-12-20210211	460-228071-5	1,3-DICHLOROBENZENE	2/15/2021		Y	N	U		U	0.00098	0.00036	mg/kg
EP-12-20210211	460-228071-5	1,2-DICHLOROPROPANE	2/15/2021		Y	N	U		U	0.00098	0.00041	mg/kg
EP-12-20210211	460-228071-5	1,2-DICHLOROETHANE	2/15/2021		Y	N	U		U	0.00098	0.00029	mg/kg
EP-12-20210211	460-228071-5	1,2,4-TRICHLOROBENZENE	2/15/2021		Y	N	U		U	0.00098	0.00035	mg/kg
EP-12-20210211	460-228071-5	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	2/15/2021		Y	N	U		U	0.00098	0.00018	mg/kg
EP-12-20210211	460-228071-5	1,2-DIBROMO-3-CHLOROPROPANE	2/15/2021		Y	N	U		U	0.00098	0.00045	mg/kg
EP-12-20210211	460-228071-5	1,2-DICHLOROBENZENE	2/15/2021		Y	N	U		U	0.00098	0.00035	mg/kg
EP-13-20210211	460-228071-6	M,P-XYLENES	2/16/2021		Y	N	U		U	0.0010	0.00018	mg/kg
EP-13-20210211	460-228071-6	Isopropylbenzene (Cumene)	2/16/2021		Y	N	U		U	0.0010	0.00030	mg/kg
EP-13-20210211	460-228071-6	ETHYLBENZENE	2/16/2021		Y	N	U		U	0.0010	0.00021	mg/kg
EP-13-20210211	460-228071-6	DICHLORODIFLUOROMETHANE	2/16/2021		Y	N	U		U	0.0010	0.00035	mg/kg
EP-13-20210211	460-228071-6	DIBROMOCHLOROMETHANE	2/16/2021		Y	N	U		U	0.0010	0.00020	mg/kg
EP-13-20210211	460-228071-6	CYCLOHEXANE	2/16/2021		Y	N	U		U	0.0010	0.00023	mg/kg
EP-13-20210211	460-228071-6	CHLOROMETHANE	2/16/2021		Y	N	U		U	0.0010	0.00046	mg/kg
EP-13-20210211	460-228071-6	Cis-1,2-Dichloroethylene	2/16/2021		Y	N	U		U	0.0010	0.00038	mg/kg
EP-13-20210211	460-228071-6	METHYL ACETATE	2/16/2021		Y	N	U		U	0.0052	0.0045	mg/kg
EP-13-20210211	460-228071-6	VINYL CHLORIDE	2/16/2021		Y	N	U		U	0.0010	0.00057	mg/kg
EP-13-20210211	460-228071-6	O-XYLENE (1,2-DIMETHYLBENZENE)	2/16/2021		Y	N	U		U	0.0010	0.00020	mg/kg
EP-13-20210211	460-228071-6	CHLOROETHANE	2/16/2021		Y	N	U		U	0.0010	0.00055	mg/kg
EP-13-20210211	460-228071-6	CHLOROFORM	2/16/2021		Y	N	U		U	0.0010	0.0010	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EP-13-20210211	460-228071-6	CIS-1,3-DICHLOROPROPENE	2/16/2021		Y	N	U		U	0.0010	0.00029	mg/kg
EP-13-20210211	460-228071-6	METHYL ETHYL KETONE (2-BUTANONE)	2/16/2021		Y	N	U		U	0.0052	0.00039	mg/kg
EP-13-20210211	460-228071-6	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	2/16/2021		Y	N	U		U	0.0052	0.0016	mg/kg
EP-13-20210211	460-228071-6	TRICHLOROFLUOROMETHANE	2/16/2021		Y	N	U		U	0.0010	0.00043	mg/kg
EP-13-20210211	460-228071-6	TRANS-1,3-DICHLOROPROPENE	2/16/2021		Y	N	U		U	0.0010	0.00028	mg/kg
EP-13-20210211	460-228071-6	METHYLENE CHLORIDE	2/16/2021		Y	N	U		U	0.0021	0.0012	mg/kg
EP-13-20210211	460-228071-6	CHLOROBENZENE	2/16/2021		Y	N	U		U	0.0010	0.00019	mg/kg
EP-13-20210211	460-228071-6	STYRENE	2/16/2021		Y	N	U		U	0.0010	0.00029	mg/kg
EP-13-20210211	460-228071-6	TERT-BUTYL METHYL ETHER	2/16/2021		Y	N	U		U	0.0010	0.00054	mg/kg
EP-13-20210211	460-228071-6	TRICHLOROETHYLENE (TCE)	2/16/2021		Y	N	U		U	0.0010	0.00034	mg/kg
EP-13-20210211	460-228071-6	TOLUENE	2/16/2021		Y	N	U		U	0.0010	0.00025	mg/kg
EP-13-20210211	460-228071-6	TRANS-1,2-DICHLOROETHENE	2/16/2021		Y	N	U		U	0.0010	0.00026	mg/kg
EP-13-20210211	460-228071-6	TETRACHLOROETHYLENE(PCE)	2/16/2021		Y	N	U		U	0.0010	0.00032	mg/kg
EP-13-20210211	460-228071-6	BROMODICHLOROMETHANE	2/16/2021		Y	N	U		U	0.0010	0.00027	mg/kg
EP-13-20210211	460-228071-6	METHYLCYCLOHEXANE	2/16/2021		Y	N	U		U	0.0010	0.00052	mg/kg
EP-13-20210211	460-228071-6	1,1-DICHLOROETHENE	2/16/2021		Y	N	U		U	0.0010	0.00024	mg/kg
EP-13-20210211	460-228071-6	CARBON TETRACHLORIDE	2/16/2021		Y	N	U		U	0.0010	0.00041	mg/kg
EP-13-20210211	460-228071-6	CARBON DISULFIDE	2/16/2021		Y	N	U		U	0.0010	0.00028	mg/kg
EP-13-20210211	460-228071-6	ACETONE	2/16/2021	0.023	Y	Y				0.0063	0.0060	mg/kg
EP-13-20210211	460-228071-6	1,2,3-TRICHLOROBENZENE	2/16/2021		Y	N	U		U	0.0010	0.00019	mg/kg
EP-13-20210211	460-228071-6	1,1,1-TRICHLOROETHANE	2/16/2021		Y	N	U		U	0.0010	0.00024	mg/kg
EP-13-20210211	460-228071-6	1,1,2,2-TETRACHLOROETHANE	2/16/2021		Y	N	U		U	0.0010	0.00022	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EP-13-20210211	460-228071-6	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	2/16/2021		Y	N	U	UJ	UJ	0.0010	0.00032	mg/kg
EP-13-20210211	460-228071-6	1,1-DICHLOROETHANE	2/16/2021		Y	N	U		U	0.0010	0.00022	mg/kg
EP-13-20210211	460-228071-6	BROMOMETHANE	2/16/2021		Y	N	U		U	0.0021	0.0010	mg/kg
EP-13-20210211	460-228071-6	1,2,4-TRICHLOROBENZENE	2/16/2021		Y	N	U		U	0.0010	0.00038	mg/kg
EP-13-20210211	460-228071-6	1,2-DIBROMO-3-CHLOROPROPANE	2/16/2021		Y	N	U		U	0.0010	0.00048	mg/kg
EP-13-20210211	460-228071-6	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	2/16/2021		Y	N	U		U	0.0010	0.00019	mg/kg
EP-13-20210211	460-228071-6	2-HEXANONE	2/16/2021		Y	N	U		U	0.0052	0.0018	mg/kg
EP-13-20210211	460-228071-6	BROMOFORM	2/16/2021		Y	N	U		U	0.0010	0.00045	mg/kg
EP-13-20210211	460-228071-6	1,1,2-TRICHLOROETHANE	2/16/2021		Y	N	U		U	0.0010	0.00019	mg/kg
EP-13-20210211	460-228071-6	1,2-DICHLOROBENZENE	2/16/2021		Y	N	U		U	0.0010	0.00038	mg/kg
EP-13-20210211	460-228071-6	BENZENE	2/16/2021		Y	N	U		U	0.0010	0.00027	mg/kg
EP-13-20210211	460-228071-6	1,4-DIOXANE (P-DIOXANE)	2/16/2021		Y	N	U		U	0.021	0.0096	mg/kg
EP-13-20210211	460-228071-6	1,4-DICHLOROBENZENE	2/16/2021		Y	N	U		U	0.0010	0.00024	mg/kg
EP-13-20210211	460-228071-6	1,3-DICHLOROBENZENE	2/16/2021		Y	N	U		U	0.0010	0.00038	mg/kg
EP-13-20210211	460-228071-6	1,2-DICHLOROPROPANE	2/16/2021		Y	N	U		U	0.0010	0.00044	mg/kg
EP-13-20210211	460-228071-6	1,2-DICHLOROETHANE	2/16/2021		Y	N	U		U	0.0010	0.00031	mg/kg
EP-13-20210211	460-228071-6	BROMOCHLOROMETHANE	2/16/2021		Y	N	U		U	0.0010	0.00029	mg/kg
EP-17-20210211	460-228071-7	CHLOROFORM	2/16/2021		Y	N	U		U	0.0011	0.0011	mg/kg
EP-17-20210211	460-228071-7	Cis-1,2-Dichloroethylene	2/16/2021		Y	N	U		U	0.0011	0.00040	mg/kg
EP-17-20210211	460-228071-7	ETHYLBENZENE	2/16/2021		Y	N	U		U	0.0011	0.00022	mg/kg
EP-17-20210211	460-228071-7	M,P-XYLENES	2/16/2021		Y	N	U		U	0.0011	0.00020	mg/kg
EP-17-20210211	460-228071-7	Isopropylbenzene (Cumene)	2/16/2021		Y	N	U		U	0.0011	0.00032	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EP-17-20210211	460-228071-7	DICHLORODIFLUOROMETHANE	2/16/2021		Y	N	U		U	0.0011	0.00038	mg/kg
EP-17-20210211	460-228071-7	DIBROMOCHLOROMETHANE	2/16/2021		Y	N	U		U	0.0011	0.00022	mg/kg
EP-17-20210211	460-228071-7	CHLOROMETHANE	2/16/2021		Y	N	U		U	0.0011	0.00049	mg/kg
EP-17-20210211	460-228071-7	CIS-1,3-DICHLOROPROPENE	2/16/2021		Y	N	U		U	0.0011	0.00031	mg/kg
EP-17-20210211	460-228071-7	METHYL ACETATE	2/16/2021		Y	N	U		U	0.0056	0.0049	mg/kg
EP-17-20210211	460-228071-7	CYCLOHEXANE	2/16/2021		Y	N	U		U	0.0011	0.00025	mg/kg
EP-17-20210211	460-228071-7	METHYL ETHYL KETONE (2-BUTANONE)	2/16/2021		Y	N	U		U	0.0056	0.00042	mg/kg
EP-17-20210211	460-228071-7	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	2/16/2021		Y	N	U		U	0.0056	0.0018	mg/kg
EP-17-20210211	460-228071-7	METHYLCYCLOHEXANE	2/16/2021		Y	N	U		U	0.0011	0.00056	mg/kg
EP-17-20210211	460-228071-7	METHYLENE CHLORIDE	2/16/2021		Y	N	U		U	0.0023	0.0013	mg/kg
EP-17-20210211	460-228071-7	O-XYLENE (1,2-DIMETHYLBENZENE)	2/16/2021		Y	N	U		U	0.0011	0.00022	mg/kg
EP-17-20210211	460-228071-7	STYRENE	2/16/2021		Y	N	U		U	0.0011	0.00031	mg/kg
EP-17-20210211	460-228071-7	TERT-BUTYL METHYL ETHER	2/16/2021		Y	N	U		U	0.0011	0.00058	mg/kg
EP-17-20210211	460-228071-7	TOLUENE	2/16/2021		Y	N	U		U	0.0011	0.00026	mg/kg
EP-17-20210211	460-228071-7	CHLOROETHANE	2/16/2021		Y	N	U		U	0.0011	0.00059	mg/kg
EP-17-20210211	460-228071-7	TRANS-1,3-DICHLOROPROPENE	2/16/2021		Y	N	U		U	0.0011	0.00030	mg/kg
EP-17-20210211	460-228071-7	1,2-DIBROMO-3-CHLOROPROPANE	2/16/2021		Y	N	U		U	0.0011	0.00052	mg/kg
EP-17-20210211	460-228071-7	TRICHLOROETHYLENE (TCE)	2/16/2021		Y	N	U		U	0.0011	0.00036	mg/kg
EP-17-20210211	460-228071-7	TRICHLOROFLUOROMETHANE	2/16/2021		Y	N	U		U	0.0011	0.00046	mg/kg
EP-17-20210211	460-228071-7	TRANS-1,2-DICHLOROETHENE	2/16/2021		Y	N	U		U	0.0011	0.00028	mg/kg
EP-17-20210211	460-228071-7	1,2,4-TRICHLOROBENZENE	2/16/2021		Y	N	U		U	0.0011	0.00040	mg/kg
EP-17-20210211	460-228071-7	VINYL CHLORIDE	2/16/2021		Y	N	U		U	0.0011	0.00062	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EP-17-20210211	460-228071-7	2-HEXANONE	2/16/2021		Y	N	U		U	0.0056	0.0019	mg/kg
EP-17-20210211	460-228071-7	TETRACHLOROETHYLENE(PCE)	2/16/2021	0.0004	Y	Y	J		J	0.0011	0.00034	mg/kg
EP-17-20210211	460-228071-7	ACETONE	2/16/2021	0.024	Y	Y				0.0068	0.0065	mg/kg
EP-17-20210211	460-228071-7	BROMOMETHANE	2/16/2021		Y	N	U		U	0.0023	0.0011	mg/kg
EP-17-20210211	460-228071-7	1,2,3-TRICHLOROBENZENE	2/16/2021		Y	N	U		U	0.0011	0.00020	mg/kg
EP-17-20210211	460-228071-7	1,1,1-TRICHLOROETHANE	2/16/2021		Y	N	U		U	0.0011	0.00026	mg/kg
EP-17-20210211	460-228071-7	1,1,2,2-TETRACHLOROETHANE	2/16/2021		Y	N	U		U	0.0011	0.00024	mg/kg
EP-17-20210211	460-228071-7	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	2/16/2021		Y	N	U	UJ	UJ	0.0011	0.00034	mg/kg
EP-17-20210211	460-228071-7	1,1,2-TRICHLOROETHANE	2/16/2021		Y	N	U		U	0.0011	0.00020	mg/kg
EP-17-20210211	460-228071-7	1,2-DICHLOROBENZENE	2/16/2021		Y	N	U		U	0.0011	0.00041	mg/kg
EP-17-20210211	460-228071-7	1,1-DICHLOROETHENE	2/16/2021		Y	N	U		U	0.0011	0.00025	mg/kg
EP-17-20210211	460-228071-7	CHLOROBENZENE	2/16/2021		Y	N	U		U	0.0011	0.00020	mg/kg
EP-17-20210211	460-228071-7	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	2/16/2021		Y	N	U		U	0.0011	0.00020	mg/kg
EP-17-20210211	460-228071-7	1,2-DICHLOROETHANE	2/16/2021		Y	N	U		U	0.0011	0.00033	mg/kg
EP-17-20210211	460-228071-7	1,2-DICHLOROPROPANE	2/16/2021		Y	N	U		U	0.0011	0.00048	mg/kg
EP-17-20210211	460-228071-7	1,3-DICHLOROBENZENE	2/16/2021		Y	N	U		U	0.0011	0.00041	mg/kg
EP-17-20210211	460-228071-7	1,4-DIOXANE (P-DIOXANE)	2/16/2021		Y	N	U		U	0.023	0.010	mg/kg
EP-17-20210211	460-228071-7	BENZENE	2/16/2021		Y	N	U		U	0.0011	0.00029	mg/kg
EP-17-20210211	460-228071-7	BROMOCHLOROMETHANE	2/16/2021		Y	N	U		U	0.0011	0.00032	mg/kg
EP-17-20210211	460-228071-7	BROMODICHLOROMETHANE	2/16/2021		Y	N	U		U	0.0011	0.00029	mg/kg
EP-17-20210211	460-228071-7	BROMOFORM	2/16/2021		Y	N	U		U	0.0011	0.00048	mg/kg
EP-17-20210211	460-228071-7	CARBON DISULFIDE	2/16/2021		Y	N	U		U	0.0011	0.00030	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EP-17-20210211	460-228071-7	CARBON TETRACHLORIDE	2/16/2021		Y	N	U		U	0.0011	0.00044	mg/kg
EP-17-20210211	460-228071-7	1,1-DICHLOROETHANE	2/16/2021		Y	N	U		U	0.0011	0.00023	mg/kg
EP-17-20210211	460-228071-7	1,4-DICHLOROBENZENE	2/16/2021		Y	N	U		U	0.0011	0.00025	mg/kg
EP-18-20210211	460-228071-8	METHYL ACETATE	2/16/2021		Y	N	U		U	0.0051	0.0044	mg/kg
EP-18-20210211	460-228071-8	CARBON DISULFIDE	2/16/2021		Y	N	U		U	0.0010	0.00027	mg/kg
EP-18-20210211	460-228071-8	CARBON TETRACHLORIDE	2/16/2021		Y	N	U		U	0.0010	0.00039	mg/kg
EP-18-20210211	460-228071-8	CHLOROBENZENE	2/16/2021		Y	N	U		U	0.0010	0.00018	mg/kg
EP-18-20210211	460-228071-8	CHLOROETHANE	2/16/2021		Y	N	U		U	0.0010	0.00053	mg/kg
EP-18-20210211	460-228071-8	CHLOROFORM	2/16/2021		Y	N	U		U	0.0010	0.00099	mg/kg
EP-18-20210211	460-228071-8	CHLOROMETHANE	2/16/2021		Y	N	U		U	0.0010	0.00044	mg/kg
EP-18-20210211	460-228071-8	Cis-1,2-Dichloroethylene	2/16/2021		Y	N	U		U	0.0010	0.00037	mg/kg
EP-18-20210211	460-228071-8	CIS-1,3-DICHLOROPROPENE	2/16/2021		Y	N	U		U	0.0010	0.00028	mg/kg
EP-18-20210211	460-228071-8	CYCLOHEXANE	2/16/2021		Y	N	U		U	0.0010	0.00023	mg/kg
EP-18-20210211	460-228071-8	DICHLORODIFLUOROMETHANE	2/16/2021		Y	N	U		U	0.0010	0.00034	mg/kg
EP-18-20210211	460-228071-8	TRANS-1,3-DICHLOROPROPENE	2/16/2021		Y	N	U		U	0.0010	0.00027	mg/kg
EP-18-20210211	460-228071-8	M,P-XYLENES	2/16/2021		Y	N	U		U	0.0010	0.00018	mg/kg
EP-18-20210211	460-228071-8	BROMOCHLOROMETHANE	2/16/2021		Y	N	U		U	0.0010	0.00029	mg/kg
EP-18-20210211	460-228071-8	METHYL ETHYL KETONE (2-BUTANONE)	2/16/2021		Y	N	U		U	0.0051	0.00038	mg/kg
EP-18-20210211	460-228071-8	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	2/16/2021		Y	N	U		U	0.0051	0.0016	mg/kg
EP-18-20210211	460-228071-8	METHYLCYCLOHEXANE	2/16/2021		Y	N	U		U	0.0010	0.00051	mg/kg
EP-18-20210211	460-228071-8	METHYLENE CHLORIDE	2/16/2021		Y	N	U		U	0.0020	0.0012	mg/kg
EP-18-20210211	460-228071-8	O-XYLENE (1,2-DIMETHYLBENZENE)	2/16/2021		Y	N	U		U	0.0010	0.00020	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EP-18-20210211	460-228071-8	STYRENE	2/16/2021		Y	N	U		U	0.0010	0.00028	mg/kg
EP-18-20210211	460-228071-8	TERT-BUTYL METHYL ETHER	2/16/2021		Y	N	U		U	0.0010	0.00052	mg/kg
EP-18-20210211	460-228071-8	TOLUENE	2/16/2021		Y	N	U		U	0.0010	0.00024	mg/kg
EP-18-20210211	460-228071-8	TRANS-1,2-DICHLOROETHENE	2/16/2021		Y	N	U		U	0.0010	0.00025	mg/kg
EP-18-20210211	460-228071-8	Isopropylbenzene (Cumene)	2/16/2021		Y	N	U		U	0.0010	0.00029	mg/kg
EP-18-20210211	460-228071-8	1,2-DIBROMO-3-CHLOROPROPANE	2/16/2021		Y	N	U		U	0.0010	0.00047	mg/kg
EP-18-20210211	460-228071-8	BROMOMETHANE	2/16/2021		Y	N	U		U	0.0020	0.0010	mg/kg
EP-18-20210211	460-228071-8	ACETONE	2/16/2021	0.024	Y	Y				0.0061	0.0058	mg/kg
EP-18-20210211	460-228071-8	1,2,3-TRICHLOROBENZENE	2/16/2021		Y	N	U		U	0.0010	0.00018	mg/kg
EP-18-20210211	460-228071-8	TETRACHLOROETHYLENE(PCE)	2/16/2021	0.0005	Y	Y	J		J	0.0010	0.00031	mg/kg
EP-18-20210211	460-228071-8	1,1,1-TRICHLOROETHANE	2/16/2021		Y	N	U		U	0.0010	0.00024	mg/kg
EP-18-20210211	460-228071-8	1,1,2,2-TETRACHLOROETHANE	2/16/2021		Y	N	U		U	0.0010	0.00022	mg/kg
EP-18-20210211	460-228071-8	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	2/16/2021		Y	N	U	UJ	UJ	0.0010	0.00031	mg/kg
EP-18-20210211	460-228071-8	1,1,2-TRICHLOROETHANE	2/16/2021		Y	N	U		U	0.0010	0.00018	mg/kg
EP-18-20210211	460-228071-8	1,1-DICHLOROETHANE	2/16/2021		Y	N	U		U	0.0010	0.00021	mg/kg
EP-18-20210211	460-228071-8	BROMOFORM	2/16/2021		Y	N	U		U	0.0010	0.00043	mg/kg
EP-18-20210211	460-228071-8	1,2,4-TRICHLOROBENZENE	2/16/2021		Y	N	U		U	0.0010	0.00037	mg/kg
EP-18-20210211	460-228071-8	BROMODICHLOROMETHANE	2/16/2021		Y	N	U		U	0.0010	0.00026	mg/kg
EP-18-20210211	460-228071-8	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	2/16/2021		Y	N	U		U	0.0010	0.00018	mg/kg
EP-18-20210211	460-228071-8	1,2-DICHLOROBENZENE	2/16/2021		Y	N	U		U	0.0010	0.00037	mg/kg
EP-18-20210211	460-228071-8	1,2-DICHLOROETHANE	2/16/2021		Y	N	U		U	0.0010	0.00030	mg/kg
EP-18-20210211	460-228071-8	1,2-DICHLOROPROPANE	2/16/2021		Y	N	U		U	0.0010	0.00043	mg/kg

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EP-18-20210211	460-228071-8	1,3-DICHLOROBENZENE	2/16/2021		Y	N	U		U	0.0010	0.00037	mg/kg
EP-18-20210211	460-228071-8	1,4-DICHLOROBENZENE	2/16/2021		Y	N	U		U	0.0010	0.00023	mg/kg
EP-18-20210211	460-228071-8	1,4-DIOXANE (P-DIOXANE)	2/16/2021		Y	N	U		U	0.020	0.0094	mg/kg
EP-18-20210211	460-228071-8	2-HEXANONE	2/16/2021		Y	N	U		U	0.0051	0.0017	mg/kg
EP-18-20210211	460-228071-8	BENZENE	2/16/2021		Y	N	U		U	0.0010	0.00026	mg/kg
EP-18-20210211	460-228071-8	ETHYLBENZENE	2/16/2021		Y	N	U		U	0.0010	0.00020	mg/kg
EP-18-20210211	460-228071-8	1,1-DICHLOROETHENE	2/16/2021		Y	N	U		U	0.0010	0.00023	mg/kg
EP-18-20210211	460-228071-8	TRICHLOROFLUOROMETHANE	2/16/2021		Y	N	U		U	0.0010	0.00041	mg/kg
EP-18-20210211	460-228071-8	VINYL CHLORIDE	2/16/2021		Y	N	U		U	0.0010	0.00056	mg/kg
EP-18-20210211	460-228071-8	DIBROMOCHLOROMETHANE	2/16/2021		Y	N	U		U	0.0010	0.00020	mg/kg
EP-18-20210211	460-228071-8	TRICHLOROETHYLENE (TCE)	2/16/2021		Y	N	U		U	0.0010	0.00033	mg/kg
EP-3-20210211	460-228071-1	CYCLOHEXANE	2/15/2021		Y	N	U		U	0.00096	0.00021	mg/kg
EP-3-20210211	460-228071-1	METHYL ACETATE	2/15/2021		Y	N	U		U	0.0048	0.0041	mg/kg
EP-3-20210211	460-228071-1	M,P-XYLENES	2/15/2021		Y	N	U		U	0.00096	0.00017	mg/kg
EP-3-20210211	460-228071-1	Isopropylbenzene (Cumene)	2/15/2021		Y	N	U		U	0.00096	0.00027	mg/kg
EP-3-20210211	460-228071-1	CHLOROETHANE	2/15/2021		Y	N	U		U	0.00096	0.00050	mg/kg
EP-3-20210211	460-228071-1	DIBROMOCHLOROMETHANE	2/15/2021		Y	N	U		U	0.00096	0.00019	mg/kg
EP-3-20210211	460-228071-1	METHYLCYCLOHEXANE	2/15/2021		Y	N	U		U	0.00096	0.00048	mg/kg
EP-3-20210211	460-228071-1	CIS-1,3-DICHLOROPROPENE	2/15/2021		Y	N	U		U	0.00096	0.00026	mg/kg
EP-3-20210211	460-228071-1	Cis-1,2-Dichloroethylene	2/15/2021		Y	N	U		U	0.00096	0.00034	mg/kg
EP-3-20210211	460-228071-1	CHLOROMETHANE	2/15/2021		Y	N	U		U	0.00096	0.00042	mg/kg
EP-3-20210211	460-228071-1	CHLOROFORM	2/15/2021		Y	N	U		U	0.00096	0.00093	mg/kg
EP-3-20210211	460-228071-1	DICHLORODIFLUOROMETHANE	2/15/2021		Y	N	U		U	0.00096	0.00033	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EP-3-20210211	460-228071-1	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	2/15/2021		Y	N	U		U	0.0048	0.0015	mg/kg
EP-3-20210211	460-228071-1	ETHYLBENZENE	2/15/2021		Y	N	U		U	0.00096	0.00019	mg/kg
EP-3-20210211	460-228071-1	METHYLENE CHLORIDE	2/15/2021		Y	N	U		U	0.0019	0.0011	mg/kg
EP-3-20210211	460-228071-1	TRICHLOROETHYLENE (TCE)	2/15/2021		Y	N	U		U	0.00096	0.00031	mg/kg
EP-3-20210211	460-228071-1	TRICHLOROFLUOROMETHANE	2/15/2021		Y	N	U		U	0.00096	0.00039	mg/kg
EP-3-20210211	460-228071-1	VINYL CHLORIDE	2/15/2021		Y	N	U		U	0.00096	0.00053	mg/kg
EP-3-20210211	460-228071-1	O-XYLENE (1,2-DIMETHYLBENZENE)	2/15/2021		Y	N	U		U	0.00096	0.00019	mg/kg
EP-3-20210211	460-228071-1	STYRENE	2/15/2021		Y	N	U		U	0.00096	0.00027	mg/kg
EP-3-20210211	460-228071-1	TRANS-1,3-DICHLOROPROPENE	2/15/2021		Y	N	U		U	0.00096	0.00026	mg/kg
EP-3-20210211	460-228071-1	ACETONE	2/15/2021	0.016	Y	Y				0.0058	0.0055	mg/kg
EP-3-20210211	460-228071-1	TERT-BUTYL METHYL ETHER	2/15/2021		Y	N	U		U	0.00096	0.00049	mg/kg
EP-3-20210211	460-228071-1	TOLUENE	2/15/2021		Y	N	U		U	0.00096	0.00023	mg/kg
EP-3-20210211	460-228071-1	TRANS-1,2-DICHLOROETHENE	2/15/2021		Y	N	U		U	0.00096	0.00024	mg/kg
EP-3-20210211	460-228071-1	METHYL ETHYL KETONE (2-BUTANONE)	2/15/2021		Y	N	U		U	0.0048	0.00035	mg/kg
EP-3-20210211	460-228071-1	1,2-DICHLOROBENZENE	2/15/2021		Y	N	U		U	0.00096	0.00035	mg/kg
EP-3-20210211	460-228071-1	1,1,2,2-TETRACHLOROETHANE	2/15/2021		Y	N	U		U	0.00096	0.00021	mg/kg
EP-3-20210211	460-228071-1	1,1,1-TRICHLOROETHANE	2/15/2021		Y	N	U		U	0.00096	0.00022	mg/kg
EP-3-20210211	460-228071-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	2/15/2021		Y	N	U	UJ	UJ	0.00096	0.00029	mg/kg
EP-3-20210211	460-228071-1	TETRACHLOROETHYLENE(PCE)	2/15/2021	0.0008	Y	Y	J		J	0.00096	0.00029	mg/kg
EP-3-20210211	460-228071-1	CHLOROBENZENE	2/15/2021		Y	N	U		U	0.00096	0.00017	mg/kg
EP-3-20210211	460-228071-1	1,1-DICHLOROETHANE	2/15/2021		Y	N	U		U	0.00096	0.00020	mg/kg
EP-3-20210211	460-228071-1	1,1-DICHLOROETHENE	2/15/2021		Y	N	U		U	0.00096	0.00022	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EP-3-20210211	460-228071-1	BROMOMETHANE	2/15/2021		Y	N	U		U	0.0019	0.00096	mg/kg
EP-3-20210211	460-228071-1	1,2,4-TRICHLOROBENZENE	2/15/2021		Y	N	U		U	0.00096	0.00034	mg/kg
EP-3-20210211	460-228071-1	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	2/15/2021		Y	N	U		U	0.00096	0.00017	mg/kg
EP-3-20210211	460-228071-1	1,1,2-TRICHLOROETHANE	2/15/2021		Y	N	U		U	0.00096	0.00017	mg/kg
EP-3-20210211	460-228071-1	1,2-DICHLOROETHANE	2/15/2021		Y	N	U		U	0.00096	0.00028	mg/kg
EP-3-20210211	460-228071-1	BROMODICHLOROMETHANE	2/15/2021		Y	N	U		U	0.00096	0.00025	mg/kg
EP-3-20210211	460-228071-1	CARBON TETRACHLORIDE	2/15/2021		Y	N	U		U	0.00096	0.00037	mg/kg
EP-3-20210211	460-228071-1	CARBON DISULFIDE	2/15/2021		Y	N	U		U	0.00096	0.00026	mg/kg
EP-3-20210211	460-228071-1	1,2,3-TRICHLOROBENZENE	2/15/2021		Y	N	U		U	0.00096	0.00017	mg/kg
EP-3-20210211	460-228071-1	1,2-DIBROMO-3-CHLOROPROPANE	2/15/2021		Y	N	U		U	0.00096	0.00044	mg/kg
EP-3-20210211	460-228071-1	BROMOFORM	2/15/2021		Y	N	U		U	0.00096	0.00041	mg/kg
EP-3-20210211	460-228071-1	1,2-DICHLOROPROPANE	2/15/2021		Y	N	U		U	0.00096	0.00041	mg/kg
EP-3-20210211	460-228071-1	BROMOCHLOROMETHANE	2/15/2021		Y	N	U		U	0.00096	0.00027	mg/kg
EP-3-20210211	460-228071-1	BENZENE	2/15/2021		Y	N	U		U	0.00096	0.00025	mg/kg
EP-3-20210211	460-228071-1	2-HEXANONE	2/15/2021		Y	N	U		U	0.0048	0.0016	mg/kg
EP-3-20210211	460-228071-1	1,4-DIOXANE (P-DIOXANE)	2/15/2021		Y	N	U		U	0.019	0.0088	mg/kg
EP-3-20210211	460-228071-1	1,4-DICHLOROBENZENE	2/15/2021		Y	N	U		U	0.00096	0.00022	mg/kg
EP-3-20210211	460-228071-1	1,3-DICHLOROBENZENE	2/15/2021		Y	N	U		U	0.00096	0.00035	mg/kg
EP-4-20210211	460-228071-2	METHYLCYCLOHEXANE	2/15/2021		Y	N	U		U	0.00094	0.00047	mg/kg
EP-4-20210211	460-228071-2	CYCLOHEXANE	2/15/2021		Y	N	U		U	0.00094	0.00021	mg/kg
EP-4-20210211	460-228071-2	DICHLORODIFLUOROMETHANE	2/15/2021		Y	N	U		U	0.00094	0.00032	mg/kg
EP-4-20210211	460-228071-2	Isopropylbenzene (Cumene)	2/15/2021		Y	N	U		U	0.00094	0.00027	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EP-4-20210211	460-228071-2	M,P-XYLENES	2/15/2021		Y	N	U		U	0.00094	0.00016	mg/kg
EP-4-20210211	460-228071-2	METHYL ACETATE	2/15/2021		Y	N	U		U	0.0047	0.0041	mg/kg
EP-4-20210211	460-228071-2	DIBROMOCHLOROMETHANE	2/15/2021		Y	N	U		U	0.00094	0.00018	mg/kg
EP-4-20210211	460-228071-2	METHYL ETHYL KETONE (2-BUTANONE)	2/15/2021		Y	N	U		U	0.0047	0.00035	mg/kg
EP-4-20210211	460-228071-2	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	2/15/2021		Y	N	U		U	0.0047	0.0015	mg/kg
EP-4-20210211	460-228071-2	ETHYLBENZENE	2/15/2021		Y	N	U		U	0.00094	0.00019	mg/kg
EP-4-20210211	460-228071-2	METHYLENE CHLORIDE	2/15/2021		Y	N	U		U	0.0019	0.0011	mg/kg
EP-4-20210211	460-228071-2	O-XYLENE (1,2-DIMETHYLBENZENE)	2/15/2021		Y	N	U		U	0.00094	0.00018	mg/kg
EP-4-20210211	460-228071-2	STYRENE	2/15/2021		Y	N	U		U	0.00094	0.00026	mg/kg
EP-4-20210211	460-228071-2	TERT-BUTYL METHYL ETHER	2/15/2021		Y	N	U		U	0.00094	0.00048	mg/kg
EP-4-20210211	460-228071-2	TOLUENE	2/15/2021		Y	N	U		U	0.00094	0.00022	mg/kg
EP-4-20210211	460-228071-2	TRANS-1,2-DICHLOROETHENE	2/15/2021		Y	N	U		U	0.00094	0.00023	mg/kg
EP-4-20210211	460-228071-2	TRANS-1,3-DICHLOROPROPENE	2/15/2021		Y	N	U		U	0.00094	0.00025	mg/kg
EP-4-20210211	460-228071-2	TRICHLOROFLUOROMETHANE	2/15/2021		Y	N	U		U	0.00094	0.00038	mg/kg
EP-4-20210211	460-228071-2	VINYL CHLORIDE	2/15/2021		Y	N	U		U	0.00094	0.00051	mg/kg
EP-4-20210211	460-228071-2	TETRACHLOROETHYLENE(PCE)	2/15/2021	0.0046	Y	Y				0.00094	0.00029	mg/kg
EP-4-20210211	460-228071-2	1,4-DIOXANE (P-DIOXANE)	2/15/2021		Y	N	U		U	0.019	0.0087	mg/kg
EP-4-20210211	460-228071-2	CIS-1,3-DICHLOROPROPENE	2/15/2021		Y	N	U		U	0.00094	0.00026	mg/kg
EP-4-20210211	460-228071-2	TRICHLOROETHYLENE (TCE)	2/15/2021	0.0003	Y	Y	J		J	0.00094	0.00030	mg/kg
EP-4-20210211	460-228071-2	ACETONE	2/15/2021	0.016	Y	Y				0.0057	0.0054	mg/kg
EP-4-20210211	460-228071-2	1,1,1-TRICHLOROETHANE	2/15/2021		Y	N	U		U	0.00094	0.00022	mg/kg
EP-4-20210211	460-228071-2	1,3-DICHLOROBENZENE	2/15/2021		Y	N	U		U	0.00094	0.00034	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EP-4-20210211	460-228071-2	1,2-DICHLOROPROPANE	2/15/2021		Y	N	U		U	0.00094	0.00040	mg/kg
EP-4-20210211	460-228071-2	1,2-DICHLOROETHANE	2/15/2021		Y	N	U		U	0.00094	0.00028	mg/kg
EP-4-20210211	460-228071-2	1,2-DICHLOROBENZENE	2/15/2021		Y	N	U		U	0.00094	0.00034	mg/kg
EP-4-20210211	460-228071-2	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	2/15/2021		Y	N	U		U	0.00094	0.00017	mg/kg
EP-4-20210211	460-228071-2	1,4-DICHLOROBENZENE	2/15/2021		Y	N	U		U	0.00094	0.00021	mg/kg
EP-4-20210211	460-228071-2	1,2,4-TRICHLOROBENZENE	2/15/2021		Y	N	U		U	0.00094	0.00034	mg/kg
EP-4-20210211	460-228071-2	1,1,2,2-TETRACHLOROETHANE	2/15/2021		Y	N	U		U	0.00094	0.00020	mg/kg
EP-4-20210211	460-228071-2	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	2/15/2021		Y	N	U	UJ	UJ	0.00094	0.00028	mg/kg
EP-4-20210211	460-228071-2	BENZENE	2/15/2021		Y	N	U		U	0.00094	0.00024	mg/kg
EP-4-20210211	460-228071-2	1,1,2-TRICHLOROETHANE	2/15/2021		Y	N	U		U	0.00094	0.00017	mg/kg
EP-4-20210211	460-228071-2	1,1-DICHLOROETHANE	2/15/2021		Y	N	U		U	0.00094	0.00019	mg/kg
EP-4-20210211	460-228071-2	1,1-DICHLOROETHENE	2/15/2021		Y	N	U		U	0.00094	0.00021	mg/kg
EP-4-20210211	460-228071-2	Cis-1,2-Dichloroethylene	2/15/2021		Y	N	U		U	0.00094	0.00034	mg/kg
EP-4-20210211	460-228071-2	1,2-DIBROMO-3-CHLOROPROPANE	2/15/2021		Y	N	U		U	0.00094	0.00043	mg/kg
EP-4-20210211	460-228071-2	CHLOROETHANE	2/15/2021		Y	N	U		U	0.00094	0.00049	mg/kg
EP-4-20210211	460-228071-2	1,2,3-TRICHLOROBENZENE	2/15/2021		Y	N	U		U	0.00094	0.00017	mg/kg
EP-4-20210211	460-228071-2	CHLOROMETHANE	2/15/2021		Y	N	U		U	0.00094	0.00041	mg/kg
EP-4-20210211	460-228071-2	CHLOROFORM	2/15/2021		Y	N	U		U	0.00094	0.00092	mg/kg
EP-4-20210211	460-228071-2	CHLOROBENZENE	2/15/2021		Y	N	U		U	0.00094	0.00017	mg/kg
EP-4-20210211	460-228071-2	CARBON TETRACHLORIDE	2/15/2021		Y	N	U		U	0.00094	0.00036	mg/kg
EP-4-20210211	460-228071-2	BROMOMETHANE	2/15/2021		Y	N	U		U	0.0019	0.00094	mg/kg
EP-4-20210211	460-228071-2	BROMOFORM	2/15/2021		Y	N	U		U	0.00094	0.00040	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EP-4-20210211	460-228071-2	BROMODICHLOROMETHANE	2/15/2021		Y	N	U		U	0.00094	0.00024	mg/kg
EP-4-20210211	460-228071-2	BROMOCHLOROMETHANE	2/15/2021		Y	N	U		U	0.00094	0.00026	mg/kg
EP-4-20210211	460-228071-2	CARBON DISULFIDE	2/15/2021		Y	N	U		U	0.00094	0.00025	mg/kg
EP-4-20210211	460-228071-2	2-HEXANONE	2/15/2021		Y	N	U		U	0.0047	0.0016	mg/kg
EP-8-20210211	460-228071-3	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	2/15/2021		Y	N	U		U	0.0058	0.0018	mg/kg
EP-8-20210211	460-228071-3	METHYL ETHYL KETONE (2-BUTANONE)	2/15/2021		Y	N	U		U	0.0058	0.00043	mg/kg
EP-8-20210211	460-228071-3	METHYL ACETATE	2/15/2021		Y	N	U		U	0.0058	0.0050	mg/kg
EP-8-20210211	460-228071-3	M,P-XYLENES	2/15/2021		Y	N	U		U	0.0012	0.00020	mg/kg
EP-8-20210211	460-228071-3	Isopropylbenzene (Cumene)	2/15/2021		Y	N	U		U	0.0012	0.00033	mg/kg
EP-8-20210211	460-228071-3	DIBROMOCHLOROMETHANE	2/15/2021		Y	N	U		U	0.0012	0.00023	mg/kg
EP-8-20210211	460-228071-3	DICHLORODIFLUOROMETHANE	2/15/2021		Y	N	U		U	0.0012	0.00040	mg/kg
EP-8-20210211	460-228071-3	1,2,3-TRICHLOROBENZENE	2/15/2021		Y	N	U		U	0.0012	0.00021	mg/kg
EP-8-20210211	460-228071-3	TRANS-1,2-DICHLOROETHENE	2/15/2021		Y	N	U		U	0.0012	0.00029	mg/kg
EP-8-20210211	460-228071-3	BROMOMETHANE	2/15/2021		Y	N	U		U	0.0023	0.0012	mg/kg
EP-8-20210211	460-228071-3	CYCLOHEXANE	2/15/2021		Y	N	U		U	0.0012	0.00026	mg/kg
EP-8-20210211	460-228071-3	ETHYLBENZENE	2/15/2021		Y	N	U		U	0.0012	0.00023	mg/kg
EP-8-20210211	460-228071-3	METHYLCYCLOHEXANE	2/15/2021		Y	N	U		U	0.0012	0.00058	mg/kg
EP-8-20210211	460-228071-3	METHYLENE CHLORIDE	2/15/2021		Y	N	U		U	0.0023	0.0013	mg/kg
EP-8-20210211	460-228071-3	O-XYLENE (1,2-DIMETHYLBENZENE)	2/15/2021		Y	N	U		U	0.0012	0.00023	mg/kg
EP-8-20210211	460-228071-3	STYRENE	2/15/2021		Y	N	U		U	0.0012	0.00032	mg/kg
EP-8-20210211	460-228071-3	ACETONE	2/15/2021	0.011	Y	Y				0.0070	0.0067	mg/kg
EP-8-20210211	460-228071-3	TOLUENE	2/15/2021		Y	N	U		U	0.0012	0.00027	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EP-8-20210211	460-228071-3	TRANS-1,3-DICHLOROPROPENE	2/15/2021		Y	N	U		U	0.0012	0.00031	mg/kg
EP-8-20210211	460-228071-3	TRICHLOROETHYLENE (TCE)	2/15/2021		Y	N	U		U	0.0012	0.00038	mg/kg
EP-8-20210211	460-228071-3	TRICHLOROFLUOROMETHANE	2/15/2021		Y	N	U		U	0.0012	0.00047	mg/kg
EP-8-20210211	460-228071-3	VINYL CHLORIDE	2/15/2021		Y	N	U		U	0.0012	0.00064	mg/kg
EP-8-20210211	460-228071-3	TETRACHLOROETHYLENE(PCE)	2/15/2021	0.0005	Y	Y	J		J	0.0012	0.00036	mg/kg
EP-8-20210211	460-228071-3	CHLOROMETHANE	2/15/2021		Y	N	U		U	0.0012	0.00051	mg/kg
EP-8-20210211	460-228071-3	TERT-BUTYL METHYL ETHER	2/15/2021		Y	N	U		U	0.0012	0.00060	mg/kg
EP-8-20210211	460-228071-3	1,2-DIBROMO-3-CHLOROPROPANE	2/15/2021		Y	N	U		U	0.0012	0.00054	mg/kg
EP-8-20210211	460-228071-3	1,1,1-TRICHLOROETHANE	2/15/2021		Y	N	U		U	0.0012	0.00027	mg/kg
EP-8-20210211	460-228071-3	1,1,2,2-TETRACHLOROETHANE	2/15/2021		Y	N	U		U	0.0012	0.00025	mg/kg
EP-8-20210211	460-228071-3	CIS-1,3-DICHLOROPROPENE	2/15/2021		Y	N	U		U	0.0012	0.00032	mg/kg
EP-8-20210211	460-228071-3	Cis-1,2-Dichloroethylene	2/15/2021		Y	N	U		U	0.0012	0.00042	mg/kg
EP-8-20210211	460-228071-3	1,1,2-TRICHLOROETHANE	2/15/2021		Y	N	U		U	0.0012	0.00021	mg/kg
EP-8-20210211	460-228071-3	1,1-DICHLOROETHANE	2/15/2021		Y	N	U		U	0.0012	0.00024	mg/kg
EP-8-20210211	460-228071-3	1,2,4-TRICHLOROBENZENE	2/15/2021		Y	N	U		U	0.0012	0.00042	mg/kg
EP-8-20210211	460-228071-3	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	2/15/2021		Y	N	U	UJ	UJ	0.0012	0.00035	mg/kg
EP-8-20210211	460-228071-3	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	2/15/2021		Y	N	U		U	0.0012	0.00021	mg/kg
EP-8-20210211	460-228071-3	1,2-DICHLOROBENZENE	2/15/2021		Y	N	U		U	0.0012	0.00042	mg/kg
EP-8-20210211	460-228071-3	1,2-DICHLOROETHANE	2/15/2021		Y	N	U		U	0.0012	0.00035	mg/kg
EP-8-20210211	460-228071-3	1,2-DICHLOROPROPANE	2/15/2021		Y	N	U		U	0.0012	0.00049	mg/kg
EP-8-20210211	460-228071-3	CARBON TETRACHLORIDE	2/15/2021		Y	N	U		U	0.0012	0.00045	mg/kg
EP-8-20210211	460-228071-3	CHLOROFORM	2/15/2021		Y	N	U		U	0.0012	0.0011	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EP-8-20210211	460-228071-3	CHLOROETHANE	2/15/2021		Y	N	U		U	0.0012	0.00061	mg/kg
EP-8-20210211	460-228071-3	1,1-DICHLOROETHENE	2/15/2021		Y	N	U		U	0.0012	0.00026	mg/kg
EP-8-20210211	460-228071-3	CHLOROBENZENE	2/15/2021		Y	N	U		U	0.0012	0.00021	mg/kg
EP-8-20210211	460-228071-3	1,3-DICHLOROBENZENE	2/15/2021		Y	N	U		U	0.0012	0.00043	mg/kg
EP-8-20210211	460-228071-3	CARBON DISULFIDE	2/15/2021		Y	N	U		U	0.0012	0.00031	mg/kg
EP-8-20210211	460-228071-3	BROMOFORM	2/15/2021		Y	N	U		U	0.0012	0.00050	mg/kg
EP-8-20210211	460-228071-3	1,4-DIOXANE (P-DIOXANE)	2/15/2021		Y	N	U		U	0.023	0.011	mg/kg
EP-8-20210211	460-228071-3	BROMODICHLOROMETHANE	2/15/2021		Y	N	U		U	0.0012	0.00030	mg/kg
EP-8-20210211	460-228071-3	BROMOCHLOROMETHANE	2/15/2021		Y	N	U		U	0.0012	0.00033	mg/kg
EP-8-20210211	460-228071-3	BENZENE	2/15/2021		Y	N	U		U	0.0012	0.00030	mg/kg
EP-8-20210211	460-228071-3	2-HEXANONE	2/15/2021		Y	N	U		U	0.0058	0.0020	mg/kg
EP-8-20210211	460-228071-3	1,4-DICHLOROBENZENE	2/15/2021		Y	N	U		U	0.0012	0.00026	mg/kg
EP-9-20210211	460-228071-4	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	2/15/2021		Y	N	U		U	0.0055	0.0017	mg/kg
EP-9-20210211	460-228071-4	TRICHLOROETHYLENE (TCE)	2/15/2021		Y	N	U		U	0.0011	0.00036	mg/kg
EP-9-20210211	460-228071-4	METHYL ETHYL KETONE (2-BUTANONE)	2/15/2021		Y	N	U		U	0.0055	0.00041	mg/kg
EP-9-20210211	460-228071-4	METHYL ACETATE	2/15/2021		Y	N	U		U	0.0055	0.0048	mg/kg
EP-9-20210211	460-228071-4	M,P-XYLENES	2/15/2021		Y	N	U		U	0.0011	0.00019	mg/kg
EP-9-20210211	460-228071-4	DICHLORODIFLUOROMETHANE	2/15/2021		Y	N	U		U	0.0011	0.00037	mg/kg
EP-9-20210211	460-228071-4	Isopropylbenzene (Cumene)	2/15/2021		Y	N	U		U	0.0011	0.00032	mg/kg
EP-9-20210211	460-228071-4	METHYLCYCLOHEXANE	2/15/2021		Y	N	U		U	0.0011	0.00055	mg/kg
EP-9-20210211	460-228071-4	ETHYLBENZENE	2/15/2021		Y	N	U		U	0.0011	0.00022	mg/kg
EP-9-20210211	460-228071-4	DIBROMOCHLOROMETHANE	2/15/2021		Y	N	U		U	0.0011	0.00021	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EP-9-20210211	460-228071-4	TRICHLOROFLUOROMETHANE	2/15/2021		Y	N	U		U	0.0011	0.00045	mg/kg
EP-9-20210211	460-228071-4	METHYLENE CHLORIDE	2/15/2021		Y	N	U		U	0.0022	0.0013	mg/kg
EP-9-20210211	460-228071-4	TETRACHLOROETHYLENE(PCE)	2/15/2021	0.0003	Y	Y	J		J	0.0011	0.00034	mg/kg
EP-9-20210211	460-228071-4	VINYL CHLORIDE	2/15/2021		Y	N	U		U	0.0011	0.00060	mg/kg
EP-9-20210211	460-228071-4	CYCLOHEXANE	2/15/2021		Y	N	U		U	0.0011	0.00024	mg/kg
EP-9-20210211	460-228071-4	1,1-DICHLOROETHENE	2/15/2021		Y	N	U		U	0.0011	0.00025	mg/kg
EP-9-20210211	460-228071-4	O-XYLENE (1,2-DIMETHYLBENZENE)	2/15/2021		Y	N	U		U	0.0011	0.00021	mg/kg
EP-9-20210211	460-228071-4	STYRENE	2/15/2021		Y	N	U		U	0.0011	0.00031	mg/kg
EP-9-20210211	460-228071-4	TERT-BUTYL METHYL ETHER	2/15/2021		Y	N	U		U	0.0011	0.00057	mg/kg
EP-9-20210211	460-228071-4	TOLUENE	2/15/2021		Y	N	U		U	0.0011	0.00026	mg/kg
EP-9-20210211	460-228071-4	TRANS-1,3-DICHLOROPROPENE	2/15/2021		Y	N	U		U	0.0011	0.00029	mg/kg
EP-9-20210211	460-228071-4	ACETONE	2/15/2021	0.014	Y	Y				0.0066	0.0063	mg/kg
EP-9-20210211	460-228071-4	TRANS-1,2-DICHLOROETHENE	2/15/2021		Y	N	U		U	0.0011	0.00027	mg/kg
EP-9-20210211	460-228071-4	1,2-DICHLOROPROPANE	2/15/2021		Y	N	U		U	0.0011	0.00047	mg/kg
EP-9-20210211	460-228071-4	1,2-DIBROMO-3-CHLOROPROPANE	2/15/2021		Y	N	U		U	0.0011	0.00051	mg/kg
EP-9-20210211	460-228071-4	CIS-1,3-DICHLOROPROPENE	2/15/2021		Y	N	U		U	0.0011	0.00030	mg/kg
EP-9-20210211	460-228071-4	1,2,3-TRICHLOROBENZENE	2/15/2021		Y	N	U		U	0.0011	0.00020	mg/kg
EP-9-20210211	460-228071-4	BROMOMETHANE	2/15/2021		Y	N	U		U	0.0022	0.0011	mg/kg
EP-9-20210211	460-228071-4	1,1,1-TRICHLOROETHANE	2/15/2021		Y	N	U		U	0.0011	0.00026	mg/kg
EP-9-20210211	460-228071-4	1,1,2,2-TETRACHLOROETHANE	2/15/2021		Y	N	U		U	0.0011	0.00024	mg/kg
EP-9-20210211	460-228071-4	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	2/15/2021		Y	N	U	UJ	UJ	0.0011	0.00033	mg/kg
EP-9-20210211	460-228071-4	1,1-DICHLOROETHANE	2/15/2021		Y	N	U		U	0.0011	0.00023	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EP-9-20210211	460-228071-4	1,2,4-TRICHLOROBENZENE	2/15/2021		Y	N	U		U	0.0011	0.00040	mg/kg
EP-9-20210211	460-228071-4	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	2/15/2021		Y	N	U		U	0.0011	0.00020	mg/kg
EP-9-20210211	460-228071-4	1,2-DICHLOROETHANE	2/15/2021		Y	N	U		U	0.0011	0.00033	mg/kg
EP-9-20210211	460-228071-4	1,1,2-TRICHLOROETHANE	2/15/2021		Y	N	U		U	0.0011	0.00020	mg/kg
EP-9-20210211	460-228071-4	1,3-DICHLOROBENZENE	2/15/2021		Y	N	U		U	0.0011	0.00040	mg/kg
EP-9-20210211	460-228071-4	1,4-DICHLOROBENZENE	2/15/2021		Y	N	U		U	0.0011	0.00025	mg/kg
EP-9-20210211	460-228071-4	BROMODICHLOROMETHANE	2/15/2021		Y	N	U		U	0.0011	0.00028	mg/kg
EP-9-20210211	460-228071-4	CHLOROBENZENE	2/15/2021		Y	N	U		U	0.0011	0.00020	mg/kg
EP-9-20210211	460-228071-4	CARBON TETRACHLORIDE	2/15/2021		Y	N	U		U	0.0011	0.00043	mg/kg
EP-9-20210211	460-228071-4	1,2-DICHLOROBENZENE	2/15/2021		Y	N	U		U	0.0011	0.00040	mg/kg
EP-9-20210211	460-228071-4	CHLOROFORM	2/15/2021		Y	N	U		U	0.0011	0.0011	mg/kg
EP-9-20210211	460-228071-4	1,4-DIOXANE (P-DIOXANE)	2/15/2021		Y	N	U		U	0.022	0.010	mg/kg
EP-9-20210211	460-228071-4	CHLOROETHANE	2/15/2021		Y	N	U		U	0.0011	0.00058	mg/kg
EP-9-20210211	460-228071-4	BROMOFORM	2/15/2021		Y	N	U		U	0.0011	0.00047	mg/kg
EP-9-20210211	460-228071-4	CARBON DISULFIDE	2/15/2021		Y	N	U		U	0.0011	0.00029	mg/kg
EP-9-20210211	460-228071-4	BROMOCHLOROMETHANE	2/15/2021		Y	N	U		U	0.0011	0.00031	mg/kg
EP-9-20210211	460-228071-4	BENZENE	2/15/2021		Y	N	U		U	0.0011	0.00029	mg/kg
EP-9-20210211	460-228071-4	Cis-1,2-Dichloroethylene	2/15/2021		Y	N	U		U	0.0011	0.00040	mg/kg
EP-9-20210211	460-228071-4	2-HEXANONE	2/15/2021		Y	N	U		U	0.0055	0.0019	mg/kg
EP-9-20210211	460-228071-4	CHLOROMETHANE	2/15/2021		Y	N	U		U	0.0011	0.00048	mg/kg
FB20210211-20210211	460-228071-10	ETHYLBENZENE	2/12/2021		Y	N	U		U	1.0	0.30	ug/l
FB20210211-20210211	460-228071-10	Isopropylbenzene (Cumene)	2/12/2021		Y	N	U		U	1.0	0.34	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
FB20210211-20210211	460-228071-10	DICHLORODIFLUOROMETHANE	2/12/2021		Y	N	U		U	1.0	0.31	ug/l
FB20210211-20210211	460-228071-10	CYCLOHEXANE	2/12/2021		Y	N	U		U	1.0	0.32	ug/l
FB20210211-20210211	460-228071-10	CIS-1,3-DICHLOROPROPENE	2/12/2021		Y	N	U		U	1.0	0.22	ug/l
FB20210211-20210211	460-228071-10	M,P-XYLENES	2/12/2021		Y	N	U		U	1.0	0.30	ug/l
FB20210211-20210211	460-228071-10	CHLOROMETHANE	2/12/2021		Y	N	U		U	1.0	0.40	ug/l
FB20210211-20210211	460-228071-10	Cis-1,2-Dichloroethylene	2/12/2021		Y	N	U		U	1.0	0.22	ug/l
FB20210211-20210211	460-228071-10	DIBROMOCHLOROMETHANE	2/12/2021		Y	N	U		U	1.0	0.28	ug/l
FB20210211-20210211	460-228071-10	METHYL ACETATE	2/12/2021		Y	N	U		U	5.0	0.79	ug/l
FB20210211-20210211	460-228071-10	METHYL ETHYL KETONE (2-BUTANONE)	2/12/2021		Y	N	U		U	5.0	1.9	ug/l
FB20210211-20210211	460-228071-10	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	2/12/2021		Y	N	U		U	5.0	1.3	ug/l
FB20210211-20210211	460-228071-10	METHYLENE CHLORIDE	2/12/2021		Y	N	U		U	1.0	0.32	ug/l
FB20210211-20210211	460-228071-10	STYRENE	2/12/2021		Y	N	U		U	1.0	0.42	ug/l
FB20210211-20210211	460-228071-10	TERT-BUTYL METHYL ETHER	2/12/2021		Y	N	U		U	1.0	0.22	ug/l
FB20210211-20210211	460-228071-10	TETRACHLOROETHYLENE(PCE)	2/12/2021		Y	N	U		U	1.0	0.25	ug/l
FB20210211-20210211	460-228071-10	CHLOROFORM	2/12/2021		Y	N	U		U	1.0	0.33	ug/l
FB20210211-20210211	460-228071-10	TRANS-1,2-DICHLOROETHENE	2/12/2021		Y	N	U		U	1.0	0.24	ug/l
FB20210211-20210211	460-228071-10	1,4-DIOXANE (P-DIOXANE)	2/12/2021		Y	N	U		U	50	28	ug/l
FB20210211-20210211	460-228071-10	TRANS-1,3-DICHLOROPROPENE	2/12/2021		Y	N	U		U	1.0	0.22	ug/l
FB20210211-20210211	460-228071-10	TRICHLOROETHYLENE (TCE)	2/12/2021		Y	N	U		U	1.0	0.31	ug/l
FB20210211-20210211	460-228071-10	TOLUENE	2/12/2021		Y	N	U		U	1.0	0.38	ug/l
FB20210211-20210211	460-228071-10	2-HEXANONE	2/12/2021		Y	N	U		U	5.0	1.1	ug/l
FB20210211-20210211	460-228071-10	1,1-DICHLOROETHANE	2/12/2021		Y	N	U		U	1.0	0.26	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
FB20210211-20210211	460-228071-10	1,1-DICHLOROETHENE	2/12/2021		Y	N	U		U	1.0	0.26	ug/l
FB20210211-20210211	460-228071-10	1,1,2,2-TETRACHLOROETHANE	2/12/2021		Y	N	U		U	1.0	0.37	ug/l
FB20210211-20210211	460-228071-10	1,2,4-TRICHLOROBENZENE	2/12/2021		Y	N	U		U	1.0	0.37	ug/l
FB20210211-20210211	460-228071-10	1,2-DIBROMO-3-CHLOROPROPANE	2/12/2021		Y	N	U		U	1.0	0.38	ug/l
FB20210211-20210211	460-228071-10	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	2/12/2021		Y	N	U		U	1.0	0.50	ug/l
FB20210211-20210211	460-228071-10	1,2-DICHLOROBENZENE	2/12/2021		Y	N	U		U	1.0	0.21	ug/l
FB20210211-20210211	460-228071-10	1,2-DICHLOROETHANE	2/12/2021		Y	N	U		U	1.0	0.43	ug/l
FB20210211-20210211	460-228071-10	1,2-DICHLOROPROPANE	2/12/2021		Y	N	U		U	1.0	0.35	ug/l
FB20210211-20210211	460-228071-10	1,3-DICHLOROBENZENE	2/12/2021		Y	N	U		U	1.0	0.34	ug/l
FB20210211-20210211	460-228071-10	ACETONE	2/12/2021		Y	N	U		U	5.0	4.4	ug/l
FB20210211-20210211	460-228071-10	O-XYLENE (1,2-DIMETHYLBENZENE)	2/12/2021		Y	N	U		U	1.0	0.36	ug/l
FB20210211-20210211	460-228071-10	CHLOROETHANE	2/12/2021		Y	N	U		U	1.0	0.32	ug/l
FB20210211-20210211	460-228071-10	TRICHLOROFLUOROMETHANE	2/12/2021		Y	N	U		U	1.0	0.32	ug/l
FB20210211-20210211	460-228071-10	BENZENE	2/12/2021		Y	N	U		U	1.0	0.20	ug/l
FB20210211-20210211	460-228071-10	VINYL CHLORIDE	2/12/2021		Y	N	U		U	1.0	0.17	ug/l
FB20210211-20210211	460-228071-10	BROMOCHLOROMETHANE	2/12/2021		Y	N	U		U	1.0	0.41	ug/l
FB20210211-20210211	460-228071-10	BROMODICHLOROMETHANE	2/12/2021		Y	N	U		U	1.0	0.34	ug/l
FB20210211-20210211	460-228071-10	BROMOFORM	2/12/2021		Y	N	U		U	1.0	0.54	ug/l
FB20210211-20210211	460-228071-10	1,1,1-TRICHLOROETHANE	2/12/2021		Y	N	U		U	1.0	0.24	ug/l
FB20210211-20210211	460-228071-10	CARBON DISULFIDE	2/12/2021		Y	N	U		U	1.0	0.82	ug/l
FB20210211-20210211	460-228071-10	CARBON TETRACHLORIDE	2/12/2021		Y	N	U		U	1.0	0.21	ug/l
FB20210211-20210211	460-228071-10	CHLOROBENZENE	2/12/2021		Y	N	U		U	1.0	0.38	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
FB20210211-20210211	460-228071-10	1,4-DICHLOROBENZENE	2/12/2021		Y	N	U		U	1.0	0.33	ug/l
FB20210211-20210211	460-228071-10	1,2,3-TRICHLOROBENZENE	2/12/2021		Y	N	U	UJ	UJ	1.0	0.36	ug/l
FB20210211-20210211	460-228071-10	BROMOMETHANE	2/12/2021		Y	N	U	UJ	UJ	1.0	0.55	ug/l
FB20210211-20210211	460-228071-10	1,1,2-TRICHLOROETHANE	2/12/2021		Y	N	U		U	1.0	0.20	ug/l
FB20210211-20210211	460-228071-10	METHYLCYCLOHEXANE	2/12/2021		Y	N	U		U	1.0	0.71	ug/l
FB20210211-20210211	460-228071-10	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	2/12/2021		Y	N	U		U	1.0	0.31	ug/l
SW-9-20210211	460-228071-9	DICHLORODIFLUOROMETHANE	2/16/2021		Y	N	U		U	0.00095	0.00032	mg/kg
SW-9-20210211	460-228071-9	BROMODICHLOROMETHANE	2/16/2021		Y	N	U		U	0.00095	0.00024	mg/kg
SW-9-20210211	460-228071-9	BROMOFORM	2/16/2021		Y	N	U		U	0.00095	0.00041	mg/kg
SW-9-20210211	460-228071-9	CARBON DISULFIDE	2/16/2021		Y	N	U		U	0.00095	0.00025	mg/kg
SW-9-20210211	460-228071-9	CARBON TETRACHLORIDE	2/16/2021		Y	N	U		U	0.00095	0.00037	mg/kg
SW-9-20210211	460-228071-9	CHLOROBENZENE	2/16/2021		Y	N	U		U	0.00095	0.00017	mg/kg
SW-9-20210211	460-228071-9	CHLOROETHANE	2/16/2021		Y	N	U		U	0.00095	0.00050	mg/kg
SW-9-20210211	460-228071-9	CHLOROFORM	2/16/2021		Y	N	U		U	0.00095	0.00093	mg/kg
SW-9-20210211	460-228071-9	CHLOROMETHANE	2/16/2021		Y	N	U		U	0.00095	0.00041	mg/kg
SW-9-20210211	460-228071-9	Cis-1,2-Dichloroethylene	2/16/2021		Y	N	U		U	0.00095	0.00034	mg/kg
SW-9-20210211	460-228071-9	CIS-1,3-DICHLOROPROPENE	2/16/2021		Y	N	U		U	0.00095	0.00026	mg/kg
SW-9-20210211	460-228071-9	BROMOCHLOROMETHANE	2/16/2021		Y	N	U		U	0.00095	0.00027	mg/kg
SW-9-20210211	460-228071-9	DIBROMOCHLOROMETHANE	2/16/2021		Y	N	U		U	0.00095	0.00018	mg/kg
SW-9-20210211	460-228071-9	ETHYLBENZENE	2/16/2021		Y	N	U		U	0.00095	0.00019	mg/kg
SW-9-20210211	460-228071-9	Isopropylbenzene (Cumene)	2/16/2021		Y	N	U		U	0.00095	0.00027	mg/kg
SW-9-20210211	460-228071-9	M,P-XYLENES	2/16/2021		Y	N	U		U	0.00095	0.00017	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
SW-9-20210211	460-228071-9	METHYL ETHYL KETONE (2-BUTANONE)	2/16/2021		Y	N	U		U	0.0048	0.00035	mg/kg
SW-9-20210211	460-228071-9	METHYLCYCLOHEXANE	2/16/2021		Y	N	U		U	0.00095	0.00048	mg/kg
SW-9-20210211	460-228071-9	METHYLENE CHLORIDE	2/16/2021		Y	N	U		U	0.0019	0.0011	mg/kg
SW-9-20210211	460-228071-9	O-XYLENE (1,2-DIMETHYLBENZENE)	2/16/2021		Y	N	U		U	0.00095	0.00018	mg/kg
SW-9-20210211	460-228071-9	CYCLOHEXANE	2/16/2021		Y	N	U		U	0.00095	0.00021	mg/kg
SW-9-20210211	460-228071-9	1,2-DIBROMO-3-CHLOROPROPANE	2/16/2021		Y	N	U		U	0.00095	0.00044	mg/kg
SW-9-20210211	460-228071-9	2,6,6-TRIMETHYL-, (.+/-.)-BICYCLO[3.1.1]HEPT-2-ENE	2/16/2021	0.0058	Y	Y	JN		J	0	0	mg/kg
SW-9-20210211	460-228071-9	STYRENE	2/16/2021	0.0003	Y	Y	J		J	0.00095	0.00026	mg/kg
SW-9-20210211	460-228071-9	TETRACHLOROETHYLENE(PCE)	2/16/2021	0.0011	Y	Y				0.00095	0.00029	mg/kg
SW-9-20210211	460-228071-9	ACETONE	2/16/2021	0.025	Y	Y				0.0057	0.0055	mg/kg
SW-9-20210211	460-228071-9	1,1,1-TRICHLOROETHANE	2/16/2021		Y	N	U		U	0.00095	0.00022	mg/kg
SW-9-20210211	460-228071-9	1,1,2,2-TETRACHLOROETHANE	2/16/2021		Y	N	U		U	0.00095	0.00020	mg/kg
SW-9-20210211	460-228071-9	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	2/16/2021		Y	N	U	UJ	UJ	0.00095	0.00029	mg/kg
SW-9-20210211	460-228071-9	1,1,2-TRICHLOROETHANE	2/16/2021		Y	N	U		U	0.00095	0.00017	mg/kg
SW-9-20210211	460-228071-9	1,1-DICHLOROETHANE	2/16/2021		Y	N	U		U	0.00095	0.00020	mg/kg
SW-9-20210211	460-228071-9	BENZENE	2/16/2021		Y	N	U		U	0.00095	0.00025	mg/kg
SW-9-20210211	460-228071-9	1,2,4-TRICHLOROBENZENE	2/16/2021		Y	N	U		U	0.00095	0.00034	mg/kg
SW-9-20210211	460-228071-9	TERT-BUTYL METHYL ETHER	2/16/2021		Y	N	U		U	0.00095	0.00049	mg/kg
SW-9-20210211	460-228071-9	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	2/16/2021		Y	N	U		U	0.00095	0.00017	mg/kg
SW-9-20210211	460-228071-9	1,2-DICHLOROBENZENE	2/16/2021		Y	N	U		U	0.00095	0.00034	mg/kg
SW-9-20210211	460-228071-9	1,2-DICHLOROETHANE	2/16/2021		Y	N	U		U	0.00095	0.00028	mg/kg
SW-9-20210211	460-228071-9	1,2-DICHLOROPROPANE	2/16/2021		Y	N	U		U	0.00095	0.00040	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
SW-9-20210211	460-228071-9	1,3-DICHLOROBENZENE	2/16/2021		Y	N	U		U	0.00095	0.00035	mg/kg
SW-9-20210211	460-228071-9	1,4-DICHLOROBENZENE	2/16/2021		Y	N	U		U	0.00095	0.00021	mg/kg
SW-9-20210211	460-228071-9	1,4-DIOXANE (P-DIOXANE)	2/16/2021		Y	N	U		U	0.019	0.0088	mg/kg
SW-9-20210211	460-228071-9	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	2/16/2021		Y	N	U		U	0.0048	0.0015	mg/kg
SW-9-20210211	460-228071-9	2-HEXANONE	2/16/2021		Y	N	U		U	0.0048	0.0016	mg/kg
SW-9-20210211	460-228071-9	1,1-DICHLOROETHENE	2/16/2021		Y	N	U		U	0.00095	0.00021	mg/kg
SW-9-20210211	460-228071-9	TOLUENE	2/16/2021		Y	N	U		U	0.00095	0.00022	mg/kg
SW-9-20210211	460-228071-9	BROMOMETHANE	2/16/2021		Y	N	U		U	0.0019	0.00095	mg/kg
SW-9-20210211	460-228071-9	METHYL ACETATE	2/16/2021		Y	N	U		U	0.0048	0.0041	mg/kg
SW-9-20210211	460-228071-9	VINYL CHLORIDE	2/16/2021		Y	N	U		U	0.00095	0.00052	mg/kg
SW-9-20210211	460-228071-9	1,2,3-TRICHLOROBENZENE	2/16/2021		Y	N	U		U	0.00095	0.00017	mg/kg
SW-9-20210211	460-228071-9	TRICHLOROFLUOROMETHANE	2/16/2021		Y	N	U		U	0.00095	0.00039	mg/kg
SW-9-20210211	460-228071-9	TRICHLOROETHYLENE (TCE)	2/16/2021		Y	N	U		U	0.00095	0.00031	mg/kg
SW-9-20210211	460-228071-9	TRANS-1,3-DICHLOROPROPENE	2/16/2021		Y	N	U		U	0.00095	0.00025	mg/kg
SW-9-20210211	460-228071-9	TRANS-1,2-DICHLOROETHENE	2/16/2021		Y	N	U		U	0.00095	0.00023	mg/kg
TB20210211-20210211	460-228071-11	1,4-DICHLOROBENZENE	2/12/2021		Y	N	U		U	1.0	0.33	ug/l
TB20210211-20210211	460-228071-11	TETRACHLOROETHYLENE(PCE)	2/12/2021		Y	N	U		U	1.0	0.25	ug/l
TB20210211-20210211	460-228071-11	METHYLENE CHLORIDE	2/12/2021		Y	N	U		U	1.0	0.32	ug/l
TB20210211-20210211	460-228071-11	1,3-DICHLOROBENZENE	2/12/2021		Y	N	U		U	1.0	0.34	ug/l
TB20210211-20210211	460-228071-11	1,2-DICHLOROPROPANE	2/12/2021		Y	N	U		U	1.0	0.35	ug/l
TB20210211-20210211	460-228071-11	1,2-DICHLOROETHANE	2/12/2021		Y	N	U		U	1.0	0.43	ug/l
TB20210211-20210211	460-228071-11	1,2-DICHLOROBENZENE	2/12/2021		Y	N	U		U	1.0	0.21	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
TB20210211-20210211	460-228071-11	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	2/12/2021		Y	N	U		U	1.0	0.50	ug/l
TB20210211-20210211	460-228071-11	1,2-DIBROMO-3-CHLOROPROPANE	2/12/2021		Y	N	U		U	1.0	0.38	ug/l
TB20210211-20210211	460-228071-11	METHYLCYCLOHEXANE	2/12/2021		Y	N	U		U	1.0	0.71	ug/l
TB20210211-20210211	460-228071-11	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	2/12/2021		Y	N	U		U	5.0	1.3	ug/l
TB20210211-20210211	460-228071-11	O-XYLENE (1,2-DIMETHYLBENZENE)	2/12/2021		Y	N	U		U	1.0	0.36	ug/l
TB20210211-20210211	460-228071-11	1,4-DIOXANE (P-DIOXANE)	2/12/2021		Y	N	U		U	50	28	ug/l
TB20210211-20210211	460-228071-11	TERT-BUTYL METHYL ETHER	2/12/2021		Y	N	U		U	1.0	0.22	ug/l
TB20210211-20210211	460-228071-11	BROMOFORM	2/12/2021		Y	N	U		U	1.0	0.54	ug/l
TB20210211-20210211	460-228071-11	TOLUENE	2/12/2021		Y	N	U		U	1.0	0.38	ug/l
TB20210211-20210211	460-228071-11	TRANS-1,2-DICHLOROETHENE	2/12/2021		Y	N	U		U	1.0	0.24	ug/l
TB20210211-20210211	460-228071-11	1,1,1-TRICHLOROETHANE	2/12/2021		Y	N	U		U	1.0	0.24	ug/l
TB20210211-20210211	460-228071-11	1,2,3-TRICHLOROBENZENE	2/12/2021		Y	N	U	UJ	UJ	1.0	0.36	ug/l
TB20210211-20210211	460-228071-11	1,1,2,2-TETRACHLOROETHANE	2/12/2021		Y	N	U		U	1.0	0.37	ug/l
TB20210211-20210211	460-228071-11	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	2/12/2021		Y	N	U		U	1.0	0.31	ug/l
TB20210211-20210211	460-228071-11	1,1,2-TRICHLOROETHANE	2/12/2021		Y	N	U		U	1.0	0.20	ug/l
TB20210211-20210211	460-228071-11	1,1-DICHLOROETHANE	2/12/2021		Y	N	U		U	1.0	0.26	ug/l
TB20210211-20210211	460-228071-11	1,1-DICHLOROETHENE	2/12/2021		Y	N	U		U	1.0	0.26	ug/l
TB20210211-20210211	460-228071-11	STYRENE	2/12/2021		Y	N	U		U	1.0	0.42	ug/l
TB20210211-20210211	460-228071-11	Cis-1,2-Dichloroethylene	2/12/2021		Y	N	U		U	1.0	0.22	ug/l
TB20210211-20210211	460-228071-11	1,2,4-TRICHLOROBENZENE	2/12/2021		Y	N	U		U	1.0	0.37	ug/l
TB20210211-20210211	460-228071-11	TRANS-1,3-DICHLOROPROPENE	2/12/2021		Y	N	U		U	1.0	0.22	ug/l
TB20210211-20210211	460-228071-11	TRICHLOROETHYLENE (TCE)	2/12/2021		Y	N	U		U	1.0	0.31	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
TB20210211-20210211	460-228071-11	TRICHLOROFLUOROMETHANE	2/12/2021		Y	N	U		U	1.0	0.32	ug/l
TB20210211-20210211	460-228071-11	VINYL CHLORIDE	2/12/2021		Y	N	U		U	1.0	0.17	ug/l
TB20210211-20210211	460-228071-11	METHYL ACETATE	2/12/2021		Y	N	U		U	5.0	0.79	ug/l
TB20210211-20210211	460-228071-11	M,P-XYLENES	2/12/2021		Y	N	U		U	1.0	0.30	ug/l
TB20210211-20210211	460-228071-11	Isopropylbenzene (Cumene)	2/12/2021		Y	N	U		U	1.0	0.34	ug/l
TB20210211-20210211	460-228071-11	ETHYLBENZENE	2/12/2021		Y	N	U		U	1.0	0.30	ug/l
TB20210211-20210211	460-228071-11	DICHLORODIFLUOROMETHANE	2/12/2021		Y	N	U		U	1.0	0.31	ug/l
TB20210211-20210211	460-228071-11	DIBROMOCHLOROMETHANE	2/12/2021		Y	N	U		U	1.0	0.28	ug/l
TB20210211-20210211	460-228071-11	BROMOCHLOROMETHANE	2/12/2021		Y	N	U		U	1.0	0.41	ug/l
TB20210211-20210211	460-228071-11	CIS-1,3-DICHLOROPROPENE	2/12/2021		Y	N	U		U	1.0	0.22	ug/l
TB20210211-20210211	460-228071-11	2-HEXANONE	2/12/2021		Y	N	U		U	5.0	1.1	ug/l
TB20210211-20210211	460-228071-11	CHLOROMETHANE	2/12/2021		Y	N	U		U	1.0	0.40	ug/l
TB20210211-20210211	460-228071-11	CHLOROFORM	2/12/2021		Y	N	U		U	1.0	0.33	ug/l
TB20210211-20210211	460-228071-11	METHYL ETHYL KETONE (2-BUTANONE)	2/12/2021		Y	N	U		U	5.0	1.9	ug/l
TB20210211-20210211	460-228071-11	CHLOROETHANE	2/12/2021		Y	N	U		U	1.0	0.32	ug/l
TB20210211-20210211	460-228071-11	CHLOROBENZENE	2/12/2021		Y	N	U		U	1.0	0.38	ug/l
TB20210211-20210211	460-228071-11	CARBON TETRACHLORIDE	2/12/2021		Y	N	U		U	1.0	0.21	ug/l
TB20210211-20210211	460-228071-11	BROMOMETHANE	2/12/2021		Y	N	U	UJ	UJ	1.0	0.55	ug/l
TB20210211-20210211	460-228071-11	CARBON DISULFIDE	2/12/2021		Y	N	U		U	1.0	0.82	ug/l
TB20210211-20210211	460-228071-11	BROMODICHLOROMETHANE	2/12/2021		Y	N	U		U	1.0	0.34	ug/l
TB20210211-20210211	460-228071-11	BENZENE	2/12/2021		Y	N	U		U	1.0	0.20	ug/l
TB20210211-20210211	460-228071-11	ACETONE	2/12/2021		Y	N	U		U	5.0	4.4	ug/l
TB20210211-20210211	460-228071-11	CYCLOHEXANE	2/12/2021		Y	N	U		U	1.0	0.32	ug/l

SDG: 4602280711

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

GEI Consultants
110 Walt Whitman Road, Suite 204
Huntington Station, NY 11746
ATTN: Ms. Jordanna Kendrot
Jkendrot@geiconsultants.com

December 3, 2020

SUBJECT: Long Island City, 30th Street, Data Usability Summary Report.

Dear Ms. Kendrot,

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on November 16, 2020. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #49691:

SDG #	Fraction
460-218760-1, 460-219091-1, 460-219293-1 460-219825-1, 460-220223-1, 460-220571-1 460-221441-1, 460-221502-1	Volatiles

The data validation was performed under modified Category B guidelines using quality control summaries provided by the laboratory. The analyses were validated using the following documents, as applicable to each method:

- USEPA Region 2 Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-Method 8260B and 8260C, SOP HW-24, Revision 4; October 2014
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, EPA 540-R-2017-002; January 2017
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Christina Rink

Christina Rink
crink@lab-data.com
Project Manager/Senior Chemist

272 pages-ADV EQUIS EDD/ NYDUSR

Attachment 1

Category B **LDC #49691 (GEI Consultants, Inc. - Huntington Station, NY / 30th Street, Long Island City, Site No. C241214)**

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260C /8260D)																															
Matrix: Water/Soil				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	460-218760-1	11/16/20	12/09/20	0	1																														
B	460-219091-1	11/16/20	12/09/20	1	1																														
C	460-219293-1	11/16/20	12/09/20	1	1																														
D	460-219825-1	11/16/20	12/09/20	1	4																														
E	460-220223-1	11/16/20	12/09/20	0	3																														
F	460-220571-1	11/16/20	12/09/20	0	2																														
G	460-221441-1	11/16/20	12/09/20	0	4																														
H	460-221502-1	11/16/20	12/09/20	0	2																														
Total	T/CR			3	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21

Shaded cells indicate Category B validation (all other cells are Category A validation). These sample counts do not include MS/MSD, and DUPs

L:\GEI\30th Street Long Island\49691ST.wpd

Site: Long Island City, 30th Street
Laboratory: Eurofins
Report No.: 460-218760-1
Reviewer: Josephine Go and Christina Rink/Laboratory Data Consultants for GEI Consultants, Inc. – Huntington Station, NY
Date: December 1, 2020

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
B-1 (0-5)a	460-218760-1	VOC

Associated QC Samples(s):
Field/Trip Blanks: None Associated
Field Duplicate pair: None Associated

The above-listed soil sample was collected on September 21, 2020 and was analyzed for volatile organic compounds (VOCs) by SW-846 method 8260C. The data validation was performed in accordance with the USEPA Region 2 *Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-Method 8260B and 8260C,* SOP HW-24, Revision 4 (October 2014) and the USEPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,* EPA 540-R-2017-002 (January 2017), modified as necessary to accommodate the non-CLP methodologies used.

The organic data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) Tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Control Sample (LCS) Results
- Internal Standards
- Field Duplicate Results
- Moisture Content
- Quantitation Limits and Data Assessment
- Sample Quantitation and Compound Identification

Overall Evaluation of Data and Potential Usability Issues

All results are usable as reported or usable with minor qualification due to laboratory quality control outliers.

The validation findings were based on the following information.

Data Completeness

The data package was complete as defined under the requirements for the NYSDEC ASP category B laboratory deliverables.

Holding Times and Sample Preservation

All criteria were met.

GC/MS Tunes

All criteria were met.

Initial and Continuing Calibrations

Initial Calibration:

All criteria were met.

Continuing calibration:

Compounds that did not meet criteria are summarized in the following table.

Date	Standard ID	Compound	CC %D	Associated Samples		Validation Action
09/23/20	D72644	Vinyl chloride	21.3	B-1 (0-5)a	XX	UJ nondetects

X = Initial calibration (IC) relative standard deviation (%RSD) > 20; estimate (J/UJ) positive and nondetect results.
XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ) positive and nondetect results.
SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.
+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The vinyl chloride result was estimated due to continuing calibration exceedance. The bias cannot be determined. The result can be used for project objectives as a nondetect with an estimated quantitation limit (UJ) which may have a minor impact on the data usability.

Blanks

Contamination was detected in the associated VOC method blank sample. The presence of blank contamination indicates that false positives may exist for these compounds in the associated samples. Action Levels (ALs) were established at <2x RL (for common contaminants) and <RL (for other contaminants) of the concentrations detected. The following table summarizes the contamination detected.

Blank ID	Compound	Level Detected	Action Level	Associated Samples
LB3 460-725918/1-A	Methylene chloride	0.000470 mg/Kg	2xRL	B-1 (0-5)a

Sample results were qualified as follows:

- If sample concentration was < the reporting limit (RL) and ≤ the Action Level, qualify the result as a nondetect (U) at the RL.
- If sample concentration was > the RL and ≤ the Action Level, qualify the result as not detected (U) at the reported concentration.
- If the sample concentration was > the RL and > the Action Level, qualification of the data was not required.

No samples were qualified since the associated sample results were nondetect.

A field blank was not associated with this sample set. Validation action was not required on this basis.

Surrogate Recoveries

All criteria were met.

MS/MSD Results

MS/MSD analyses were not associated with this sample set. Validation action was not required on this basis.

LCS Results

The following table lists the LCS/LCSD percent recoveries (%R) outside of control limits in the VOC analysis and the resulting validation actions.

LCS ID	Compound	LCS %R (Limits)	LCS/D %R (Limits)	Affected Sample	Validation Action
LCS/LCSD 460-726096/3,4	Chloroethane	140 (65-134)	-	B-1 (0-5)a	None

- Within control limits

Validation action was not required for chloroethane due to high LCS/LCSD percent recovery as positive results only are affected and this compound was not detected in the associated sample.

The following table lists the LCS/LCSD relative percent differences (RPD) outside of control limits in the VOC analysis and the resulting validation actions.

LCS ID	Compound	RPD (Limits)	Affected Sample	Validation Action
LCS/LCSD 460-726096/3,4	1,1,2-Trichloro-1,2,2-trifluoroethane	31 (≤30)	B-1 (0-5)a	None

Validation action was not required for 1,1,2-trichloro-1,2,2-trifluoroethane due to LCS/LCSD relative percent difference exceedance as positive results only are affected and this compound was not detected in the associated sample.

Internal Standards

All criteria were met.

Field Duplicate Results

A field duplicate pair was not associated with this sample set. Validation action was not required on this basis.

Moisture Content

All criteria were met.

Quantitation Limits and Data Assessment

Results were reported which were below the reporting limit (RL) and above the method detection limit (MDL) in the VOC analysis. These results were qualified as estimated (J) by the laboratory.

Dilutions were not required for VOC analysis.

Sample Quantitation and Compound Identification

Calculations were spot-checked; no discrepancies were noted.

DATA VALIDATION QUALIFIERS

U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.

J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.

JN - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.

R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

LDC #: 49691A1a
SDG #: 460-218760-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Category B

Date: 11/30/20
Page: 1 of 1
Reviewer: SW
2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / A	ICAL ≤ 20%, r² ICV ≤ 30%
IV.	Continuing calibration	SW	CCV ≤ 20%,
V.	Laboratory Blanks	SW	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	SW	LCS/D
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	Results <RL > MDL = J data
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	B-1 (0-5)a	460-218760-1	Soil	09/21/20
2				
3				
4				
5				
6				
7				
8				
9				

Notes:

+	LB3 460-725918/1-A						
−	MB 460-726096/7						

LDC #: 49691A1a

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG

Method: Volatiles (EPA SW 846 Method 8260C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20% and relative response factors (RRF) within method criteria?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 30%?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 20% and relative response factors (RRF) within method criteria?		✓		
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?	✓	.		
VI. Field blanks				
Were field blanks were identified in this SDG?		✓		
Were target compounds detected in the field blanks?			✓	
VII. Surrogate spikes				
Were all surrogate percent recovery (%R) within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?		✓		
X. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds detected in the field duplicates?			✓	
XI. Internal standards				
Were internal standard area counts within -50% to +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XII. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	AA. Tetrachloroethene	AAA. 1,3,5-Trimethylbenzene	AAAA. Ethyl tert-butyl ether	A1. 1,3-Butadiene	A2.
B. Bromomethane	BB. 1,1,2,2-Tetrachloroethane	BBB. 4-Chlorotoluene	BBBB. tert-Amyl methyl ether	B1. Hexane	B2.
C. Vinyl choride	CC. Toluene	CCC. tert-Butylbenzene	CCCC. 1-Chlorohexane	C1. Heptane	C2.
D. Chloroethane	DD. Chlorobenzene	DDD. 1,2,4-Trimethylbenzene	DDDD. Isopropyl alcohol	D1. Propylene	D2.
E. Methylene chloride	EE. Ethylbenzene	EEE. sec-Butylbenzene	EEEE. Acetonitrile	E1. Freon 11	E2.
F. Acetone	FF. Styrene	FFF. 1,3-Dichlorobenzene	FFFF. Acrolein	F1. Freon 12	F2.
G. Carbon disulfide	GG. Xylenes, total	GGG. p-Isopropyltoluene	GGGG. Acrylonitrile	G1. Freon 113	G2.
H. 1,1-Dichloroethene	HH. Vinyl acetate	HHH. 1,4-Dichlorobenzene	HHHH. 1,4-Dioxane	H1. Freon 114	H2.
I. 1,1-Dichloroethane	II. 2-Chloroethylvinyl ether	III. n-Butylbenzene	IIII. Isobutyl alcohol	I1. 2-Nitropropane	I2.
J. 1,2-Dichloroethene, total	JJ. Dichlorodifluoromethane	JJJ. 1,2-Dichlorobenzene	JJJJ. Methacrylonitrile	J1. Dimethyl disulfide	J2.
K. Chloroform	KK. Trichlorofluoromethane	KKK. 1,2,4-Trichlorobenzene	KKKK. Propionitrile	K1. 2,3-Dimethyl pentane	K2.
L. 1,2-Dichloroethane	LL. Methyl-tert-butyl ether	LLL. Hexachlorobutadiene	LLLL. Ethyl ether	L1. 2,4-Dimethyl pentane	L2.
M. 2-Butanone	MM. 1,2-Dibromo-3-chloropropane	MMM. Naphthalene	MMMM. Benzyl chloride	M1. 3,3-Dimethyl pentane	M2.
N. 1,1,1-Trichloroethane	NN. Methyl ethyl ketone	NNN. 1,2,3-Trichlorobenzene	NNNN. Iodomethane	N1. 2-Methylpentane	N2.
O. Carbon tetrachloride	OO. 2,2-Dichloropropane	OOO. 1,3,5-Trichlorobenzene	OOOO.1,1-Difluoroethane	O1. 3-Methylpentane	O2.
P. Bromodichloromethane	PP. Bromochloromethane	PPP. trans-1,2-Dichloroethene	PPPP. Tetrahydrofuran	P1. 3-Ethylpentane	P2.
Q. 1,2-Dichloropropane	QQ. 1,1-Dichloropropene	QQQ. cis-1,2-Dichloroethene	QQQQ. Methyl acetate	Q1. 2,2-Dimethylpentane	Q2.
R. cis-1,3-Dichloropropene	RR. Dibromomethane	RRR. m,p-Xylenes	RRRR. Ethyl acetate	R1. 2,2,3- Trimethylbutane	R2.
S. Trichloroethene	SS. 1,3-Dichloropropane	SSS. o-Xylene	SSSS. Cyclohexane	S1. 2,2,4-Trimethylpentane	S2.
T. Dibromochloromethane	TT. 1,2-Dibromoethane	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	TTTT. Methylcyclohexane	T1. 2-Methylhexane	T2.
U. 1,1,2-Trichloroethane	UU. 1,1,1,2-Tetrachloroethane	UUU. 1,2-Dichlorotetrafluoroethane	UUUU. Allyl chloride	U1. Nonanal	U2.
V. Benzene	VV. Isopropylbenzene	VVV. 4-Ethyltoluene	VVVV. Methyl methacrylate	V1. 2-Methylnaphthalene	V2.
W. trans-1,3-Dichloropropene	WW. Bromobenzene	WWW. Ethanol	WWWW. Ethyl methacrylate	W1. Methanol	W2.
X. Bromoform	XX. 1,2,3-Trichloropropane	XXX. Di-isopropyl ether	XXXX. cis-1,4-Dichloro-2-butene	X1. 1,2,3-Trimethylbenzene	X2.
Y. 4-Methyl-2-pentanone	YY. n-Propylbenzene	YYY. tert-Butanol	YYYY. trans-1,4-Dichloro-2-butene	Y1. 2-Propanol	Y2.
Z. 2-Hexanone	ZZ. 2-Chlorotoluene	ZZZ. tert-Butyl alcohol	ZZZZ. Pentachloroethane	Z1.	Z2.

LDC #: 49691A1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Y (N) N/A Were percent differences (%D) ≤20 % and relative response factors (RRF) within the method criteria?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤20.0%)	Finding RRF (Limit)	Associated Samples	Qualifications
01	09/23/20	D72644	C	21.3		All (ND)	J/UJ/A

Note: * = Ave RRF failed method criteria but within validation criteria

LDC #: 49691A1a

VALIDATION FINDINGS WORKSHEET
Blanks

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a method blank associated with every sample in this SDG?
Y N N/A Was a method blank analyzed at least once every 12 hours for each matrix and concentration?
Y N N/A Was there contamination in the method blanks? If yes, please see the qualifications below.

Blank analysis date: _____
Conc. units: mg/kg Associated Samples: All (MD)

Compound	Blank ID	Sample Identification								
	LB 460-725918/1-A									
CRL E	0.000470									

Blank analysis date: _____
Conc. units: _____ Associated Samples: _____

Compound	Blank ID	Sample Identification								

Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated blank concentration were qualified as not detected, "U". Other contaminants within five times the blank concentration were also qualified as not detected, "U".

LDC #: 49691A1a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was a LCS required?

Y (N) N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	LCS/D 460-726096/3-A	D	140 (65-134)	( )	( )	All (ND)	J dets/P
		TTT	( )	( )	31 (30)	↓ ↓	↓
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
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			( )	( )	( )		

LDC #: 49691A1a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

average RRF = sum of the RRFs/number of standards

%RSD = 100 * (S/X)

A_x = Area of Compound

C_x = Concentration of compound

S= Standard deviation of the RRFs

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 50 std)	Recalculated RRF (RRF 50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL CVOAMS4	9/16/2020	2-Butanone (BUT)	0.4018	0.4018	0.4143	0.4143	4.2	4.2
			cis-1,2-DCE (FBZ)	0.3926	0.3926	0.3885	0.3885	6.4	6.4
			1,4-Dioxane (DXE)	1.5287	1.5287	1.4586	1.4586	15.9	15.9
			Tetrachloroethene (CBZ)	0.5443	0.5443	0.5127	0.5127	11.2	11.2
			1,4-DCB (DCB)	1.9912	1.9912	1.9598	1.9599	15.4	15.4

LDC # 49691A1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CCV)	Recalculated RRF (CCV)	Reported % D	Recalculated %D
1	D72644	9/23/2020	2-Butanone (BUT)	0.4143	0.3884	0.3884	6.3	6.3
			cis-1,2-DCE (FBZ)	0.3885	0.4035	0.4035	3.9	3.9
			1,4-Dioxane (DXE)	1.4586	1.6310	1.6310	11.8	11.8
			Tetrachloroethene (CBZ)	0.5127	0.4809	0.4809	6.2	6.2
			1,4-DCB (DCB)	1.9598	1.8556	1.8556	5.3	5.3

LDC #: 49691A1a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	50	55.7	111	111	0
1,2-Dichloroethane-d4		64.8	130	130	
Toluene-d8		53.6	107	107	
Bromofluorobenzene		55.4	111	111	

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 49691A1a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration; SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: LCS/D 460-726096/3,4

Compound	Spike Added (mg/kg)		Spiked Sample Concentration (mg/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
1,1-Dichloroethene	0.0200	0.0200	0.0250	0.0193	125	125	96	96.5	26	26
Trichloroethene			0.0223	0.0189	112	112	95	95	16	16
Benzene			0.0238	0.0207	119	119	104	104	14	14
Toluene			0.0225	0.0195	112	112	98	98	14	14
Chlorobenzene	↓	↓	0.0210	0.0190	105	105	95	95	10	10

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 49091A1a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The concentration of the sample was calculated for the compound identified below using the following calculation:

$$\text{Concentration} = \frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 1, cis-1,2-DCE

$$\text{Conc.} = \frac{(697)(50)(5\text{ mL})}{(465824)(0.3885)(5.36\text{g})(0.877)(1000)}$$

$$= 0.0002048 \text{ mg/kg}$$

#	Sample ID	Compound	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Qualification
	1	cis-1,2-DCE	0.00020	0.00020	—

30th Street, Long Island City, Site No. C241214 - LDC# 49691A

SDG: 4602187601

Analytical Method SW8260C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
B-1 (0-5) a-20200921	460-218760-1	NAPHTHALENE	9/23/2020	0.23	Y	Y	JN		J	0	0	mg/kg
B-1 (0-5) a-20200921	460-218760-1	ACETONE	9/23/2020	0.014	Y	Y				0.0064	0.0061	mg/kg
B-1 (0-5) a-20200921	460-218760-1	1,1-DICHLOROETHANE	9/23/2020		Y	N	U		U	0.0011	0.00022	mg/kg
B-1 (0-5) a-20200921	460-218760-1	1,1,2-TRICHLOROETHANE	9/23/2020		Y	N	U		U	0.0011	0.00019	mg/kg
B-1 (0-5) a-20200921	460-218760-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	9/23/2020		Y	N	UT		U	0.0011	0.00032	mg/kg
B-1 (0-5) a-20200921	460-218760-1	1,1,2,2-TETRACHLOROETHANE	9/23/2020		Y	N	U		U	0.0011	0.00023	mg/kg
B-1 (0-5) a-20200921	460-218760-1	1,1,1-TRICHLOROETHANE	9/23/2020		Y	N	U		U	0.0011	0.00025	mg/kg
B-1 (0-5) a-20200921	460-218760-1	METHYL ETHYL KETONE (2-BUTANONE)	9/23/2020	0.0030	Y	Y	J		J	0.0053	0.0029	mg/kg
B-1 (0-5) a-20200921	460-218760-1	Cis-1,2-Dichloroethylene	9/23/2020	0.00020	Y	Y	J		J	0.0011	0.00016	mg/kg
B-1 (0-5) a-20200921	460-218760-1	1,4-DICHLOROBENZENE	9/23/2020	0.00048	Y	Y	J		J	0.0011	0.00024	mg/kg
B-1 (0-5) a-20200921	460-218760-1	1,2-DICHLOROBENZENE	9/23/2020	0.00078	Y	Y	J		J	0.0011	0.00015	mg/kg
B-1 (0-5) a-20200921	460-218760-1	UNKNOWN VOLATILE ORGANIC WITH 5TH HIGHEST CONC.	9/23/2020	0.085	Y	Y	J		J	0	0	mg/kg
B-1 (0-5) a-20200921	460-218760-1	UNKNOWN VOLATILE ORGANIC WITH 4TH HIGHEST CONC.	9/23/2020	0.089	Y	Y	J		J	0	0	mg/kg
B-1 (0-5) a-20200921	460-218760-1	UNKNOWN VOLATILE ORGANIC WITH 3RD HIGHEST CONC.	9/23/2020	0.11	Y	Y	J		J	0	0	mg/kg
B-1 (0-5) a-20200921	460-218760-1	1,2,3-TRICHLOROBENZENE	9/23/2020		Y	N	U		U	0.0011	0.00019	mg/kg
B-1 (0-5) a-20200921	460-218760-1	O-XYLENE (1,2-DIMETHYLBENZENE)	9/23/2020	0.0047	Y	Y				0.0011	0.00021	mg/kg
B-1 (0-5) a-20200921	460-218760-1	BENZENE	9/23/2020	0.0021	Y	Y				0.0011	0.00027	mg/kg
B-1 (0-5) a-20200921	460-218760-1	CARBON DISULFIDE	9/23/2020	0.0020	Y	Y				0.0011	0.00028	mg/kg
B-1 (0-5) a-20200921	460-218760-1	CYCLOHEXANE	9/23/2020	0.0026	Y	Y				0.0011	0.00024	mg/kg
B-1 (0-5) a-20200921	460-218760-1	ETHYLBENZENE	9/23/2020	0.027	Y	Y				0.0011	0.00021	mg/kg

SDG: 4602187601

Analytical Method SW8260C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
B-1 (0-5) a-20200921	460-218760-1	Isopropylbenzene (Cumene)	9/23/2020	0.0052	Y	Y				0.0011	0.00013	mg/kg
B-1 (0-5) a-20200921	460-218760-1	UNKNOWN VOLATILE ORGANIC WITH 2ND HIGHEST CONC.	9/23/2020	0.19	Y	Y	J		J	0	0	mg/kg
B-1 (0-5) a-20200921	460-218760-1	METHYLCYCLOHEXANE	9/23/2020	0.0085	Y	Y				0.0011	0.00053	mg/kg
B-1 (0-5) a-20200921	460-218760-1	UNKNOWN VOLATILE ORGANIC WITH HIGHEST CONC.	9/23/2020	0.21	Y	Y	J		J	0	0	mg/kg
B-1 (0-5) a-20200921	460-218760-1	TOLUENE	9/23/2020	0.0016	Y	Y				0.0011	0.00025	mg/kg
B-1 (0-5) a-20200921	460-218760-1	2,3-DIHYDRO-1H-INDENE	9/23/2020	0.13	Y	Y	JN		J	0	0	mg/kg
B-1 (0-5) a-20200921	460-218760-1	2,6-Dimethylundecane	9/23/2020	0.21	Y	Y	JN		J	0	0	mg/kg
B-1 (0-5) a-20200921	460-218760-1	2-Methyl-Trans-Decalin	9/23/2020	0.13	Y	Y	JN		J	0	0	mg/kg
B-1 (0-5) a-20200921	460-218760-1	4-METHYLNAPHTHALENE	9/23/2020	0.14	Y	Y	JN		J	0	0	mg/kg
B-1 (0-5) a-20200921	460-218760-1	1,2,4-TRICHLOROBENZENE	9/23/2020		Y	N	U		U	0.0011	0.00038	mg/kg
B-1 (0-5) a-20200921	460-218760-1	M,P-XYLENES	9/23/2020	0.0077	Y	Y				0.0011	0.00019	mg/kg
B-1 (0-5) a-20200921	460-218760-1	CHLOROFORM	9/23/2020		Y	N	U		U	0.0011	0.00034	mg/kg
B-1 (0-5) a-20200921	460-218760-1	VINYL CHLORIDE	9/23/2020		Y	N	U	UJ	UJ	0.0011	0.00058	mg/kg
B-1 (0-5) a-20200921	460-218760-1	TRICHLOROFLUOROMETHANE	9/23/2020		Y	N	U		U	0.0011	0.00043	mg/kg
B-1 (0-5) a-20200921	460-218760-1	TRICHLOROETHYLENE (TCE)	9/23/2020		Y	N	U		U	0.0011	0.00015	mg/kg
B-1 (0-5) a-20200921	460-218760-1	TRANS-1,3-DICHLOROPROPENE	9/23/2020		Y	N	U		U	0.0011	0.00028	mg/kg
B-1 (0-5) a-20200921	460-218760-1	TRANS-1,2-DICHLOROETHENE	9/23/2020		Y	N	U		U	0.0011	0.00026	mg/kg
B-1 (0-5) a-20200921	460-218760-1	TETRACHLOROETHYLENE(PCE)	9/23/2020		Y	N	U		U	0.0011	0.00015	mg/kg
B-1 (0-5) a-20200921	460-218760-1	TERT-BUTYL METHYL ETHER	9/23/2020		Y	N	U		U	0.0011	0.00013	mg/kg
B-1 (0-5) a-20200921	460-218760-1	STYRENE	9/23/2020		Y	N	U		U	0.0011	0.00030	mg/kg
B-1 (0-5) a-20200921	460-218760-1	METHYLENE CHLORIDE	9/23/2020		Y	N	U		U	0.0011	0.00049	mg/kg
B-1 (0-5) a-20200921	460-218760-1	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	9/23/2020		Y	N	U		U	0.0053	0.0017	mg/kg

SDG: 4602187601

Analytical Method SW8260C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
B-1 (0-5) a-20200921	460-218760-1	METHYL ACETATE	9/23/2020		Y	N	U		U	0.0053	0.0046	mg/kg
B-1 (0-5) a-20200921	460-218760-1	DICHLORODIFLUOROMETHANE	9/23/2020		Y	N	U		U	0.0011	0.00036	mg/kg
B-1 (0-5) a-20200921	460-218760-1	DIBROMOCHLOROMETHANE	9/23/2020		Y	N	U		U	0.0011	0.00021	mg/kg
B-1 (0-5) a-20200921	460-218760-1	1,1-DICHLOROETHENE	9/23/2020		Y	N	U		U	0.0011	0.00024	mg/kg
B-1 (0-5) a-20200921	460-218760-1	BROMOCHLOROMETHANE	9/23/2020		Y	N	U		U	0.0011	0.00030	mg/kg
B-1 (0-5) a-20200921	460-218760-1	1,2-DIBROMO-3-CHLOROPROPANE	9/23/2020		Y	N	U		U	0.0011	0.00049	mg/kg
B-1 (0-5) a-20200921	460-218760-1	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	9/23/2020		Y	N	U		U	0.0011	0.00019	mg/kg
B-1 (0-5) a-20200921	460-218760-1	1,2-DICHLOROETHANE	9/23/2020		Y	N	U		U	0.0011	0.00031	mg/kg
B-1 (0-5) a-20200921	460-218760-1	1,2-DICHLOROPROPANE	9/23/2020		Y	N	U		U	0.0011	0.00045	mg/kg
B-1 (0-5) a-20200921	460-218760-1	1,3-DICHLOROBENZENE	9/23/2020		Y	N	U		U	0.0011	0.00017	mg/kg
B-1 (0-5) a-20200921	460-218760-1	CIS-1,3-DICHLOROPROPENE	9/23/2020		Y	N	U		U	0.0011	0.00029	mg/kg
B-1 (0-5) a-20200921	460-218760-1	2-HEXANONE	9/23/2020		Y	N	U		U	0.0053	0.0018	mg/kg
B-1 (0-5) a-20200921	460-218760-1	CHLOROMETHANE	9/23/2020		Y	N	U		U	0.0011	0.00046	mg/kg
B-1 (0-5) a-20200921	460-218760-1	BROMODICHLOROMETHANE	9/23/2020		Y	N	U		U	0.0011	0.00027	mg/kg
B-1 (0-5) a-20200921	460-218760-1	BROMOFORM	9/23/2020		Y	N	U		U	0.0011	0.00045	mg/kg
B-1 (0-5) a-20200921	460-218760-1	BROMOMETHANE	9/23/2020		Y	N	U		U	0.0011	0.00050	mg/kg
B-1 (0-5) a-20200921	460-218760-1	CARBON TETRACHLORIDE	9/23/2020		Y	N	U		U	0.0011	0.00041	mg/kg
B-1 (0-5) a-20200921	460-218760-1	CHLOROBENZENE	9/23/2020		Y	N	U		U	0.0011	0.00019	mg/kg
B-1 (0-5) a-20200921	460-218760-1	CHLOROETHANE	9/23/2020		Y	N	UT		U	0.0011	0.00056	mg/kg
B-1 (0-5) a-20200921	460-218760-1	1,4-DIOXANE (P-DIOXANE)	9/23/2020		Y	N	U		U	0.021	0.0098	mg/kg

Site:	Long Island City, 30th Street
Laboratory:	Eurofins
Report No.:	460-219091-1
Reviewer:	Josephine Go and Christina Rink/Laboratory Data Consultants for GEI Consultants, Inc. – Huntington Station, NY
Date:	December 1, 2020

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
A-1 (0-5)	460-219091-1	VOC
Trip Blank 092420	460-219091-2	VOC

Associated QC Samples(s):
Field/Trip Blanks: Trip Blank 092420
Field Duplicate pair: None Associated

The above-listed soil and water samples were collected on September 24, 2020 and were analyzed for volatile organic compounds (VOCs) by SW-846 method 8260C. The data validation was performed in accordance with the USEPA Region 2 *Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-Method 8260B and 8260C,* SOP HW-24, Revision 4 (October 2014) and the USEPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,* EPA 540-R-2017-002 (January 2017), modified as necessary to accommodate the non-CLP methodologies used.

The organic data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) Tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Control Sample (LCS) Results
- Internal Standards
- Field Duplicate Results
- Moisture Content
- Quantitation Limits and Data Assessment
- Sample Quantitation and Compound Identification

Overall Evaluation of Data and Potential Usability Issues

All results are usable as reported or usable with minor qualification due to laboratory quality control outliers.

The validation findings were based on the following information.

Data Completeness

The data package was complete as defined under the requirements for the NYSDEC ASP category B laboratory deliverables.

Holding Times and Sample Preservation

All criteria were met.

GC/MS Tunes

All criteria were met.

Initial and Continuing Calibrations

Initial Calibration:

All criteria were met.

Continuing calibration:

Compounds that did not meet criteria are summarized in the following table.

Date	Standard ID	Compound	CC %D	Associated Samples		Validation Action
09/27/20	D72847	Dichlorodifluoromethane	26.2	A-1 (0-5)	XX	UJ nondetects
		Chloromethane	20.6		XX	UJ nondetects
		Vinyl chloride	25.8		XX	UJ nondetects
		Trichlorofluoromethane	21.8		XX	UJ nondetects

X = Initial calibration (IC) relative standard deviation (%RSD) > 20; estimate (J/UJ) positive and nondetect results.
XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ) positive and nondetect results.
SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.
+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The dichlorodifluoromethane, chloromethane, vinyl chloride, and trichlorofluoromethane results were estimated due to continuing calibration exceedances. The bias cannot be determined. The results can be used for project objectives as nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Blanks

Contamination was not detected in the method blanks.

Contamination was detected in the trip blank sample Trip Blank 092420 for VOC analysis. The presence of blank contamination indicates that false positives may exist for these compounds in the associated samples. Action Levels (ALs) were established at <2x reporting limits (RL) (for common contaminants) and <RL (for other contaminants) of the concentrations detected. The following table summarizes the contamination detected.

Field Blank ID	Compound	Level Detected	Action Level	Associated Samples
Trip Blank 092420	Methylene chloride	0.32 ug/L	2xRL	A-1 (0-5)

Sample results were qualified as follows:

- If sample concentration was < the reporting limit (RL) and ≤ the Action Level, qualify the result as a nondetect (U) at the RL.
- If sample concentration was > the RL and ≤ the Action Level, qualify the result as not detected (U) at the reported concentration.

No samples were qualified since the associated sample results were nondetect.

Surrogate Recoveries

All criteria were met.

MS/MSD Results

MS/MSD analyses were not associated with this sample set. Validation action was not required on this basis.

LCS Results

All criteria were met.

Internal Standards

All criteria were met.

Field Duplicate Results

A field duplicate pair was not associated with this sample set. Validation action was not required on this basis.

Moisture Content

All criteria were met.

Quantitation Limits and Data Assessment

Results were reported which were below the reporting limit (RL) and above the method detection limit (MDL) in the VOC analysis. These results were qualified as estimated (J) by the laboratory.

Dilutions were not required for VOC analysis.

Sample Quantitation and Compound Identification

Calculations were spot-checked; no discrepancies were noted.

DATA VALIDATION QUALIFIERS

U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.

J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.

JN - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.

R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

LDC #: 49691B1a
SDG #: 460-219091-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Category B

Date: 11/30/20
Page: 1 of 1
Reviewer: JM
2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	ICAL ≤ 20% or ICV ≤ 30%
IV.	Continuing calibration	SW	CCV ≤ 20%
V.	Laboratory Blanks	A	
VI.	Field blanks	SW	TB = 2
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	A	LCS 1
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	Results <RL > MDL = J dets
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	A-1 (0-5)	460-219091-1	Soil	09/24/20
2	Trip Blank 092420	460-219091-2	Water	09/24/20
3				
4				
5				
6				
7				
8				
9				

Notes:

1	LB3 460-726907/1-A						
1	MB 460-727130/7						
1	1 - 727517/8						

LDC #: 49691B1a

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG

Method: Volatiles (EPA SW 846 Method 8260C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20% and relative response factors (RRF) within method criteria?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 30%?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 20% and relative response factors (RRF) within method criteria?		✓		
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks were identified in this SDG?	✓			
Were target compounds detected in the field blanks?	✓			
VII. Surrogate spikes				
Were all surrogate percent recovery (%R) within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
X. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds detected in the field duplicates?			✓	
XI. Internal standards				
Were internal standard area counts within -50% to +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XII. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	AA. Tetrachloroethene	AAA. 1,3,5-Trimethylbenzene	AAAA. Ethyl tert-butyl ether	A1. 1,3-Butadiene	A2.
B. Bromomethane	BB. 1,1,2,2-Tetrachloroethane	BBB. 4-Chlorotoluene	BBBB. tert-Amyl methyl ether	B1. Hexane	B2.
C. Vinyl choride	CC. Toluene	CCC. tert-Butylbenzene	CCCC. 1-Chlorohexane	C1. Heptane	C2.
D. Chloroethane	DD. Chlorobenzene	DDD. 1,2,4-Trimethylbenzene	DDDD. Isopropyl alcohol	D1. Propylene	D2.
E. Methylene chloride	EE. Ethylbenzene	EEE. sec-Butylbenzene	EEEE. Acetonitrile	E1. Freon 11	E2.
F. Acetone	FF. Styrene	FFF. 1,3-Dichlorobenzene	FFFF. Acrolein	F1. Freon 12	F2.
G. Carbon disulfide	GG. Xylenes, total	GGG. p-Isopropyltoluene	GGGG. Acrylonitrile	G1. Freon 113	G2.
H. 1,1-Dichloroethene	HH. Vinyl acetate	HHH. 1,4-Dichlorobenzene	HHHH. 1,4-Dioxane	H1. Freon 114	H2.
I. 1,1-Dichloroethane	II. 2-Chloroethylvinyl ether	III. n-Butylbenzene	IIII. Isobutyl alcohol	I1. 2-Nitropropane	I2.
J. 1,2-Dichloroethene, total	JJ. Dichlorodifluoromethane	JJJ. 1,2-Dichlorobenzene	JJJJ. Methacrylonitrile	J1. Dimethyl disulfide	J2.
K. Chloroform	KK. Trichlorofluoromethane	KKK. 1,2,4-Trichlorobenzene	KKKK. Propionitrile	K1. 2,3-Dimethyl pentane	K2.
L. 1,2-Dichloroethane	LL. Methyl-tert-butyl ether	LLL. Hexachlorobutadiene	LLLL. Ethyl ether	L1. 2,4-Dimethyl pentane	L2.
M. 2-Butanone	MM. 1,2-Dibromo-3-chloropropane	MMM. Naphthalene	MMMM. Benzyl chloride	M1. 3,3-Dimethyl pentane	M2.
N. 1,1,1-Trichloroethane	NN. Methyl ethyl ketone	NNN. 1,2,3-Trichlorobenzene	NNNN. Iodomethane	N1. 2-Methylpentane	N2.
O. Carbon tetrachloride	OO. 2,2-Dichloropropane	OOO. 1,3,5-Trichlorobenzene	OOOO.1,1-Difluoroethane	O1. 3-Methylpentane	O2.
P. Bromodichloromethane	PP. Bromochloromethane	PPP. trans-1,2-Dichloroethene	PPPP. Tetrahydrofuran	P1. 3-Ethylpentane	P2.
Q. 1,2-Dichloropropane	QQ. 1,1-Dichloropropene	QQQ. cis-1,2-Dichloroethene	QQQQ. Methyl acetate	Q1. 2,2-Dimethylpentane	Q2.
R. cis-1,3-Dichloropropene	RR. Dibromomethane	RRR. m,p-Xylenes	RRRR. Ethyl acetate	R1. 2,2,3- Trimethylbutane	R2.
S. Trichloroethene	SS. 1,3-Dichloropropane	SSS. o-Xylene	SSSS. Cyclohexane	S1. 2,2,4-Trimethylpentane	S2.
T. Dibromochloromethane	TT. 1,2-Dibromoethane	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	TTTT. Methylcyclohexane	T1. 2-Methylhexane	T2.
U. 1,1,2-Trichloroethane	UU. 1,1,1,2-Tetrachloroethane	UUU. 1,2-Dichlorotetrafluoroethane	UUUU. Allyl chloride	U1. Nonanal	U2.
V. Benzene	VV. Isopropylbenzene	VVV. 4-Ethyltoluene	VVVV. Methyl methacrylate	V1. 2-Methylnaphthalene	V2.
W. trans-1,3-Dichloropropene	WW. Bromobenzene	WWW. Ethanol	WWWW. Ethyl methacrylate	W1. Methanol	W2.
X. Bromoform	XX. 1,2,3-Trichloropropane	XXX. Di-isopropyl ether	XXXX. cis-1,4-Dichloro-2-butene	X1. 1,2,3-Trimethylbenzene	X2.
Y. 4-Methyl-2-pentanone	YY. n-Propylbenzene	YYY. tert-Butanol	YYYY. trans-1,4-Dichloro-2-butene	Y1. 2-Propanol	Y2.
Z. 2-Hexanone	ZZ. 2-Chlorotoluene	ZZZ. tert-Butyl alcohol	ZZZZ. Pentachloroethane	Z1.	Z2.

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VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Y N N/A Were percent differences (%D) ≤20 % and relative response factors (RRF) within the method criteria?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤20.0%)	Finding RRF (Limit)	Associated Samples	Qualifications
	09/27/20	D72847	JJ	26.2		1, LB3, MB1 (ND)	J/UJ/A
			A	20.6			
			C	25.8			
			KK	21.8			

Note: * = Ave RRF failed method criteria but within validation criteria

LDC #: 19691 B 1a

VALIDATION FINDINGS WORKSHEET
Field Blanks

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?
Blank units: ug/L **Associated sample units:** mg/kg
Sampling date: 09/24/20
Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: Associated Samples: 1 (ND2)

Compound	Blank ID	Sample Identification								
	2									
E	0.32									

Blank units: **Associated sample units:**
Sampling date:
Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: Associated Samples:

Compound	Blank ID	Sample Identification								

Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

LDC #: 49691B1a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound
S= Standard deviation of the RRFs

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 50 std)	Recalculated RRF (RRF 50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL CVOAMS4	9/16/2020	2-Butanone (BUT)	0.4018	0.4018	0.4143	0.4143	4.2	4.2
			cis-1,2-DCE (FBZ)	0.3926	0.3926	0.3885	0.3885	6.4	6.4
			1,4-Dioxane (DXE)	1.5287	1.5287	1.4586	1.4586	15.9	15.9
			Tetrachloroethene (CBZ)	0.5443	0.5443	0.5127	0.5127	11.2	11.2
			1,4-DCB (DCB)	1.9912	1.9912	1.9598	1.9599	15.4	15.4
2	ICAL CVOAMS15	9/25/2020	2-Butanone (BUT)	0.9109	0.9109	0.8712	0.8712	8.1	8.1
			cis-1,2-DCE (FBZ)	0.3060	0.3060	0.3123	0.3123	3.8	3.8
			1,4-Dioxane (DXE)	1.0598	1.0598	1.0128	1.0128	8.6	8.6
			Tetrachloroethene (CBZ)	0.3976	0.3976	0.3998	0.3998	3.6	3.6
			1,4-DCB (DCB)	1.4170	1.4170	1.4491	1.4491	3.5	3.5

LDC # 49691B1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound	(IS)	Average RRF (Initial)	Reported RRF (CCV)	Recalculated RRF (CCV)	Reported % D	Recalculated %D
1	D72847	9/27/2020	2-Butanone	(BUT)	0.4143	0.3422	0.3422	17.4	17.4
			cis-1,2-DCE	(FBZ)	0.3885	0.3739	0.3739	3.8	3.8
			1,4-Dioxane	(DXE)	1.4586	1.4497	1.4497	0.6	0.6
			Tetrachloroethene	(CBZ)	0.5127	0.5007	0.5007	2.3	2.3
			1,4-DCB	(DCB)	1.9598	1.7954	1.7954	8.4	8.4
2	T39746	9/29/2020	2-Butanone	(BUT)	0.8712	0.9153	0.9153	5.1	5.1
			cis-1,2-DCE	(FBZ)	0.3123	0.3105	0.3105	0.6	0.6
			1,4-Dioxane	(DXE)	1.0128	1.1320	1.1320	11.8	11.8
			Tetrachloroethene	(CBZ)	0.3998	0.3797	0.3797	5.0	5.0
			1,4-DCB	(DCB)	1.4491	1.4655	1.4655	1.1	1.1

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VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	50.0	56.6	113	113	9
1,2-Dichloroethane-d4	↓	62.5	125	125	↓
Toluene-d8		53.7	107	107	
Bromofluorobenzene		53.3	107	107	

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 49691 B1a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration; SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: LCS ID 460-727130/3,4

Compound	Spike Added (mg/kg)		Spiked Sample Concentration (mg/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
1,1-Dichloroethene	0.0200	0.0200	0.0223	0.0222	112	112	111	111	1	1
Trichloroethene			0.0211	0.0213	105	105	106	106	1	1
Benzene			0.0217	0.0218	108	108	109	109	1	1
Toluene			0.0210	0.0210	105	105	105	105	0	0
Chlorobenzene			0.0202	0.0204	101	101	102	102	1	1

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 49691B1a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The concentration of the sample was calculated for the compound identified below using the following calculation:

$$\text{Concentration} = \frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 1, PCE

$$\text{Conc.} = \frac{(4159)(50)(5\text{ mL})}{(349\,411)(0.5127)(4.60\text{ g})(0.909)(1000)}$$

$$= 0.00139 \text{ mg/kg}$$

#	Sample ID	Compound	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Qualification
	1	PCE	0.0014	0.0014	-

30th Street, Long Island City, Site No. C241214 - LDC# 49691B

SDG: 4602190911

Analytical Method SW8260C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
A-1 (0-5)-20200924	460-219091-1	1,2-DICHLOROBENZENE	9/27/2020		Y	N	U		U	0.0012	0.00017	mg/kg
A-1 (0-5)-20200924	460-219091-1	CARBON TETRACHLORIDE	9/27/2020		Y	N	U		U	0.0012	0.00046	mg/kg
A-1 (0-5)-20200924	460-219091-1	CARBON DISULFIDE	9/27/2020		Y	N	U		U	0.0012	0.00032	mg/kg
A-1 (0-5)-20200924	460-219091-1	BROMOMETHANE	9/27/2020		Y	N	U		U	0.0012	0.00057	mg/kg
A-1 (0-5)-20200924	460-219091-1	BROMOFORM	9/27/2020		Y	N	U		U	0.0012	0.00051	mg/kg
A-1 (0-5)-20200924	460-219091-1	BROMODICHLOROMETHANE	9/27/2020		Y	N	U		U	0.0012	0.00031	mg/kg
A-1 (0-5)-20200924	460-219091-1	BROMOCHLOROMETHANE	9/27/2020		Y	N	U		U	0.0012	0.00034	mg/kg
A-1 (0-5)-20200924	460-219091-1	BENZENE	9/27/2020		Y	N	U		U	0.0012	0.00031	mg/kg
A-1 (0-5)-20200924	460-219091-1	ACETONE	9/27/2020		Y	N	U		U	0.0072	0.0068	mg/kg
A-1 (0-5)-20200924	460-219091-1	2-HEXANONE	9/27/2020		Y	N	U		U	0.0060	0.0020	mg/kg
A-1 (0-5)-20200924	460-219091-1	1,4-DIOXANE (P-DIOXANE)	9/27/2020		Y	N	U		U	0.024	0.011	mg/kg
A-1 (0-5)-20200924	460-219091-1	CHLOROBENZENE	9/27/2020		Y	N	U		U	0.0012	0.00021	mg/kg
A-1 (0-5)-20200924	460-219091-1	1,2-DICHLOROETHANE	9/27/2020		Y	N	U		U	0.0012	0.00035	mg/kg
A-1 (0-5)-20200924	460-219091-1	1,4-DICHLOROBENZENE	9/27/2020		Y	N	U		U	0.0012	0.00027	mg/kg
A-1 (0-5)-20200924	460-219091-1	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	9/27/2020		Y	N	U		U	0.0012	0.00022	mg/kg
A-1 (0-5)-20200924	460-219091-1	1,2-DIBROMO-3-CHLOROPROPANE	9/27/2020		Y	N	U		U	0.0012	0.00055	mg/kg
A-1 (0-5)-20200924	460-219091-1	1,2,4-TRICHLOROBENZENE	9/27/2020		Y	N	U		U	0.0012	0.00043	mg/kg
A-1 (0-5)-20200924	460-219091-1	1,2,3-TRICHLOROBENZENE	9/27/2020		Y	N	U		U	0.0012	0.00022	mg/kg
A-1 (0-5)-20200924	460-219091-1	1,1-DICHLOROETHENE	9/27/2020		Y	N	U		U	0.0012	0.00027	mg/kg
A-1 (0-5)-20200924	460-219091-1	1,1-DICHLOROETHANE	9/27/2020		Y	N	U		U	0.0012	0.00025	mg/kg
A-1 (0-5)-20200924	460-219091-1	1,1,2-TRICHLOROETHANE	9/27/2020		Y	N	U		U	0.0012	0.00021	mg/kg
A-1 (0-5)-20200924	460-219091-1	1,1,2,2-TETRACHLOROETHANE	9/27/2020		Y	N	U		U	0.0012	0.00026	mg/kg

SDG: 4602190911

Analytical Method SW8260C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
A-1 (0-5)-20200924	460-219091-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	9/27/2020		Y	N	U		U	0.0012	0.00036	mg/kg
A-1 (0-5)-20200924	460-219091-1	VINYL CHLORIDE	9/27/2020		Y	N	U	UJ	UJ	0.0012	0.00065	mg/kg
A-1 (0-5)-20200924	460-219091-1	1,1,1-TRICHLOROETHANE	9/27/2020		Y	N	U		U	0.0012	0.00028	mg/kg
A-1 (0-5)-20200924	460-219091-1	1,3-DICHLOROBENZENE	9/27/2020		Y	N	U		U	0.0012	0.00019	mg/kg
A-1 (0-5)-20200924	460-219091-1	TRANS-1,3-DICHLOROPROPENE	9/27/2020		Y	N	U		U	0.0012	0.00032	mg/kg
A-1 (0-5)-20200924	460-219091-1	TRICHLOROFLUOROMETHANE	9/27/2020		Y	N	U	UJ	UJ	0.0012	0.00049	mg/kg
A-1 (0-5)-20200924	460-219091-1	1,2-DICHLOROPROPANE	9/27/2020		Y	N	U		U	0.0012	0.00051	mg/kg
A-1 (0-5)-20200924	460-219091-1	TRICHLOROETHYLENE (TCE)	9/27/2020		Y	N	U		U	0.0012	0.00017	mg/kg
A-1 (0-5)-20200924	460-219091-1	CHLOROETHANE	9/27/2020		Y	N	U		U	0.0012	0.00062	mg/kg
A-1 (0-5)-20200924	460-219091-1	TRANS-1,2-DICHLOROETHENE	9/27/2020		Y	N	U		U	0.0012	0.00029	mg/kg
A-1 (0-5)-20200924	460-219091-1	TOLUENE	9/27/2020		Y	N	U		U	0.0012	0.00028	mg/kg
A-1 (0-5)-20200924	460-219091-1	TETRACHLOROETHYLENE(PCE)	9/27/2020	0.0014	Y	Y				0.0012	0.00017	mg/kg
A-1 (0-5)-20200924	460-219091-1	TERT-BUTYL METHYL ETHER	9/27/2020		Y	N	U		U	0.0012	0.00015	mg/kg
A-1 (0-5)-20200924	460-219091-1	STYRENE	9/27/2020		Y	N	U		U	0.0012	0.00033	mg/kg
A-1 (0-5)-20200924	460-219091-1	O-XYLENE (1,2-DIMETHYLBENZENE)	9/27/2020		Y	N	U		U	0.0012	0.00023	mg/kg
A-1 (0-5)-20200924	460-219091-1	METHYLENE CHLORIDE	9/27/2020		Y	N	U		U	0.0012	0.00055	mg/kg
A-1 (0-5)-20200924	460-219091-1	METHYLCYCLOHEXANE	9/27/2020		Y	N	U		U	0.0012	0.00060	mg/kg
A-1 (0-5)-20200924	460-219091-1	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	9/27/2020		Y	N	U		U	0.0060	0.0019	mg/kg
A-1 (0-5)-20200924	460-219091-1	Cis-1,2-Dichloroethylene	9/27/2020		Y	N	U		U	0.0012	0.00018	mg/kg
A-1 (0-5)-20200924	460-219091-1	METHYL ETHYL KETONE (2-BUTANONE)	9/27/2020		Y	N	U		U	0.0060	0.0032	mg/kg
A-1 (0-5)-20200924	460-219091-1	CHLOROMETHANE	9/27/2020		Y	N	U	UJ	UJ	0.0012	0.00052	mg/kg
A-1 (0-5)-20200924	460-219091-1	CIS-1,3-DICHLOROPROPENE	9/27/2020		Y	N	U		U	0.0012	0.00033	mg/kg

SDG: 4602190911

Analytical Method SW8260C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
A-1 (0-5)-20200924	460-219091-1	CYCLOHEXANE	9/27/2020		Y	N	U		U	0.0012	0.00026	mg/kg
A-1 (0-5)-20200924	460-219091-1	DIBROMOCHLOROMETHANE	9/27/2020		Y	N	U		U	0.0012	0.00023	mg/kg
A-1 (0-5)-20200924	460-219091-1	DICHLORODIFLUOROMETHANE	9/27/2020		Y	N	U	UJ	UJ	0.0012	0.00040	mg/kg
A-1 (0-5)-20200924	460-219091-1	Isopropylbenzene (Cumene)	9/27/2020		Y	N	U		U	0.0012	0.00015	mg/kg
A-1 (0-5)-20200924	460-219091-1	M,P-XYLENES	9/27/2020		Y	N	U		U	0.0012	0.00021	mg/kg
A-1 (0-5)-20200924	460-219091-1	METHYL ACETATE	9/27/2020		Y	N	U		U	0.0060	0.0051	mg/kg
A-1 (0-5)-20200924	460-219091-1	ETHYLBENZENE	9/27/2020		Y	N	U		U	0.0012	0.00024	mg/kg
A-1 (0-5)-20200924	460-219091-1	CHLOROFORM	9/27/2020		Y	N	U		U	0.0012	0.00038	mg/kg
Trip Blank 092420-20200924	460-219091-2	1,2-DICHLOROPROPANE	9/29/2020		Y	N	U		U	1.0	0.35	ug/l
Trip Blank 092420-20200924	460-219091-2	1,1-DICHLOROETHENE	9/29/2020		Y	N	U		U	1.0	0.26	ug/l
Trip Blank 092420-20200924	460-219091-2	1,2,3-TRICHLOROBENZENE	9/29/2020		Y	N	U		U	1.0	0.36	ug/l
Trip Blank 092420-20200924	460-219091-2	1,2,4-TRICHLOROBENZENE	9/29/2020		Y	N	U		U	1.0	0.37	ug/l
Trip Blank 092420-20200924	460-219091-2	1,2-DIBROMO-3-CHLOROPROPANE	9/29/2020		Y	N	U		U	1.0	0.38	ug/l
Trip Blank 092420-20200924	460-219091-2	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	9/29/2020		Y	N	U		U	1.0	0.50	ug/l
Trip Blank 092420-20200924	460-219091-2	1,4-DICHLOROBENZENE	9/29/2020		Y	N	U		U	1.0	0.33	ug/l
Trip Blank 092420-20200924	460-219091-2	1,2-DICHLOROETHANE	9/29/2020		Y	N	U		U	1.0	0.43	ug/l
Trip Blank 092420-20200924	460-219091-2	1,1-DICHLOROETHANE	9/29/2020		Y	N	U		U	1.0	0.26	ug/l
Trip Blank 092420-20200924	460-219091-2	TRANS-1,3-DICHLOROPROPENE	9/29/2020		Y	N	U		U	1.0	0.22	ug/l
Trip Blank 092420-20200924	460-219091-2	1,3-DICHLOROBENZENE	9/29/2020		Y	N	U		U	1.0	0.34	ug/l
Trip Blank 092420-20200924	460-219091-2	1,2-DICHLOROBENZENE	9/29/2020		Y	N	U		U	1.0	0.21	ug/l
Trip Blank 092420-20200924	460-219091-2	1,1,2-TRICHLOROETHANE	9/29/2020		Y	N	U		U	1.0	0.20	ug/l
Trip Blank 092420-20200924	460-219091-2	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	9/29/2020		Y	N	U		U	1.0	0.31	ug/l
Trip Blank 092420-20200924	460-219091-2	1,1,2,2-TETRACHLOROETHANE	9/29/2020		Y	N	U		U	1.0	0.37	ug/l

SDG: 4602190911

Analytical Method SW8260C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
Trip Blank 092420-20200924	460-219091-2	1,1,1-TRICHLOROETHANE	9/29/2020		Y	N	U		U	1.0	0.24	ug/l
Trip Blank 092420-20200924	460-219091-2	VINYL CHLORIDE	9/29/2020		Y	N	U		U	1.0	0.17	ug/l
Trip Blank 092420-20200924	460-219091-2	TERT-BUTYL METHYL ETHER	9/29/2020		Y	N	U		U	1.0	0.22	ug/l
Trip Blank 092420-20200924	460-219091-2	TRICHLOROETHYLENE (TCE)	9/29/2020		Y	N	U		U	1.0	0.31	ug/l
Trip Blank 092420-20200924	460-219091-2	TRANS-1,2-DICHLOROETHENE	9/29/2020		Y	N	U		U	1.0	0.24	ug/l
Trip Blank 092420-20200924	460-219091-2	TOLUENE	9/29/2020		Y	N	U		U	1.0	0.38	ug/l
Trip Blank 092420-20200924	460-219091-2	TETRACHLOROETHYLENE(PCE)	9/29/2020		Y	N	U		U	1.0	0.25	ug/l
Trip Blank 092420-20200924	460-219091-2	METHYLENE CHLORIDE	9/29/2020	0.32	Y	Y	J		J	1.0	0.32	ug/l
Trip Blank 092420-20200924	460-219091-2	1,4-DIOXANE (P-DIOXANE)	9/29/2020		Y	N	U		U	50	28	ug/l
Trip Blank 092420-20200924	460-219091-2	TRICHLOROFLUOROMETHANE	9/29/2020		Y	N	U		U	1.0	0.32	ug/l
Trip Blank 092420-20200924	460-219091-2	CHLOROMETHANE	9/29/2020		Y	N	U		U	1.0	0.40	ug/l
Trip Blank 092420-20200924	460-219091-2	STYRENE	9/29/2020		Y	N	U		U	1.0	0.42	ug/l
Trip Blank 092420-20200924	460-219091-2	O-XYLENE (1,2-DIMETHYLBENZENE)	9/29/2020		Y	N	U		U	1.0	0.36	ug/l
Trip Blank 092420-20200924	460-219091-2	METHYLCYCLOHEXANE	9/29/2020		Y	N	U		U	1.0	0.71	ug/l
Trip Blank 092420-20200924	460-219091-2	METHYL ETHYL KETONE (2-BUTANONE)	9/29/2020		Y	N	U		U	5.0	1.9	ug/l
Trip Blank 092420-20200924	460-219091-2	METHYL ACETATE	9/29/2020		Y	N	U		U	5.0	0.79	ug/l
Trip Blank 092420-20200924	460-219091-2	M,P-XYLENES	9/29/2020		Y	N	U		U	1.0	0.30	ug/l
Trip Blank 092420-20200924	460-219091-2	Isopropylbenzene (Cumene)	9/29/2020		Y	N	U		U	1.0	0.34	ug/l
Trip Blank 092420-20200924	460-219091-2	ETHYLBENZENE	9/29/2020		Y	N	U		U	1.0	0.30	ug/l
Trip Blank 092420-20200924	460-219091-2	DICHLORODIFLUOROMETHANE	9/29/2020		Y	N	U		U	1.0	0.31	ug/l
Trip Blank 092420-20200924	460-219091-2	DIBROMOCHLOROMETHANE	9/29/2020		Y	N	U		U	1.0	0.28	ug/l
Trip Blank 092420-20200924	460-219091-2	CYCLOHEXANE	9/29/2020		Y	N	U		U	1.0	0.32	ug/l
Trip Blank 092420-20200924	460-219091-2	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	9/29/2020		Y	N	U		U	5.0	1.3	ug/l

SDG: 4602190911

Analytical Method SW8260C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
Trip Blank 092420-20200924	460-219091-2	Cis-1,2-Dichloroethylene	9/29/2020		Y	N	U		U	1.0	0.22	ug/l
Trip Blank 092420-20200924	460-219091-2	2-HEXANONE	9/29/2020		Y	N	U		U	5.0	1.1	ug/l
Trip Blank 092420-20200924	460-219091-2	CHLOROFORM	9/29/2020		Y	N	U		U	1.0	0.33	ug/l
Trip Blank 092420-20200924	460-219091-2	CHLOROETHANE	9/29/2020		Y	N	U		U	1.0	0.32	ug/l
Trip Blank 092420-20200924	460-219091-2	CHLOROBENZENE	9/29/2020		Y	N	U		U	1.0	0.38	ug/l
Trip Blank 092420-20200924	460-219091-2	CARBON TETRACHLORIDE	9/29/2020		Y	N	U		U	1.0	0.21	ug/l
Trip Blank 092420-20200924	460-219091-2	CARBON DISULFIDE	9/29/2020		Y	N	U		U	1.0	0.82	ug/l
Trip Blank 092420-20200924	460-219091-2	BROMOMETHANE	9/29/2020		Y	N	U		U	1.0	0.55	ug/l
Trip Blank 092420-20200924	460-219091-2	BROMOFORM	9/29/2020		Y	N	U		U	1.0	0.54	ug/l
Trip Blank 092420-20200924	460-219091-2	BROMODICHLOROMETHANE	9/29/2020		Y	N	U		U	1.0	0.34	ug/l
Trip Blank 092420-20200924	460-219091-2	BROMOCHLOROMETHANE	9/29/2020		Y	N	U		U	1.0	0.41	ug/l
Trip Blank 092420-20200924	460-219091-2	BENZENE	9/29/2020		Y	N	U		U	1.0	0.20	ug/l
Trip Blank 092420-20200924	460-219091-2	ACETONE	9/29/2020		Y	N	U		U	5.0	4.4	ug/l
Trip Blank 092420-20200924	460-219091-2	CIS-1,3-DICHLOROPROPENE	9/29/2020		Y	N	U		U	1.0	0.22	ug/l

Site:	Long Island City, 30th Street
Laboratory:	Eurofins
Report No.:	460-219293-1
Reviewer:	Josephine Go and Christina Rink/Laboratory Data Consultants for GEI Consultants, Inc. – Huntington Station, NY
Date:	December 1, 2020

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
A-2 (0-5)	460-219293-1	VOC
Trip Blank 092820	460-219293-2	VOC

Associated QC Samples(s):
Field/Trip Blanks: Trip Blank 092820
Field Duplicate pair: None Associated

The above-listed soil and water samples were collected on September 28, 2020 and were analyzed for volatile organic compounds (VOCs) by SW-846 method 8260C. The data validation was performed in accordance with the USEPA Region 2 *Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-Method 8260B and 8260C,* SOP HW-24, Revision 4 (October 2014) and the USEPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,* EPA 540-R-2017-002 (January 2017), modified as necessary to accommodate the non-CLP methodologies used.

The organic data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) Tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Control Sample (LCS) Results
- Internal Standards
- Field Duplicate Results
- Moisture Content
- Quantitation Limits and Data Assessment
- Sample Quantitation and Compound Identification

Overall Evaluation of Data and Potential Usability Issues

All results are usable as reported or usable with minor qualification due to laboratory quality control outliers.

The validation findings were based on the following information.

Data Completeness

The data package was complete as defined under the requirements for the NYSDEC ASP category B laboratory deliverables.

Holding Times and Sample Preservation

All criteria were met.

GC/MS Tunes

All criteria were met.

Initial and Continuing Calibrations

All criteria were met.

Blanks

Contamination was not detected in the method blanks.

Contamination was detected in the trip blank sample Trip Blank 092820 for VOC analysis. The presence of blank contamination indicates that false positives may exist for these compounds in the associated samples. Action Levels (ALs) were established at <2x reporting limits (RL) (for common contaminants) and <RL (for other contaminants) of the concentrations detected. The following table summarizes the contamination detected.

Field Blank ID	Compound	Level Detected	Action Level	Associated Samples
Trip Blank 092820	Methylene chloride	0.40 ug/L	2xRL	A-2 (0-5)

Sample results were qualified as follows:

- If sample concentration was < the reporting limit (RL) and ≤ the Action Level, qualify the result as a nondetect (U) at the RL.
- If sample concentration was > the RL and ≤ the Action Level, qualify the result as not detected (U) at the reported concentration.

No samples were qualified since the associated sample results were nondetect.

Surrogate Recoveries

All criteria were met.

MS/MSD Results

MS/MSD analyses were not associated with this sample set. Validation action was not required on this basis.

LCS Results

All criteria were met.

Internal Standards

All criteria were met.

Field Duplicate Results

A field duplicate pair was not associated with this sample set. Validation action was not required on this basis.

Moisture Content

All criteria were met.

Quantitation Limits and Data Assessment

Results were reported which were below the reporting limit (RL) and above the method detection limit (MDL) in the VOC analysis. These results were qualified as estimated (J) by the laboratory.

Dilutions were not required for VOC analysis.

Sample Quantitation and Compound Identification

Calculations were spot-checked; no discrepancies were noted.

DATA VALIDATION QUALIFIERS

U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.

J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.

JN - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.

R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

LDC #: 49691C1a
SDG #: 460-219293-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Category B

Date: 11/10/20
Page: 1 of 1
Reviewer: SMG
2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / A	ICAL ≤ 20% ICV ≤ 20%.
IV.	Continuing calibration	A	CCV ≤ 20%
V.	Laboratory Blanks	A	
VI.	Field blanks	SW	TB = 2
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	A	LCS/D
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	Result < RL > MDL = J dets
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	A-2 (0-5)	460-219293-1	Soil	09/28/20
2	Trip Blank 092820	460-219293-2	Water	09/28/20
3				
4				
5				
6				
7				
8				
9				

Notes:

	LB 460-727653/1-A					
	MB 460-727655/4					
	↓ -727793/6					

LDC #: 49691C1a

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG

Method: Volatiles (EPA SW 846 Method 8260C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20% and relative response factors (RRF) within method criteria?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 30%?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 20% and relative response factors (RRF) within method criteria?	✓			
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks were identified in this SDG?	✓			
Were target compounds detected in the field blanks?	✓			
VII. Surrogate spikes				
Were all surrogate percent recovery (%R) within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
X. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds detected in the field duplicates?			✓	
XI. Internal standards				
Were internal standard area counts within -50% to +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XII. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	AA. Tetrachloroethene	AAA. 1,3,5-Trimethylbenzene	AAAA. Ethyl tert-butyl ether	A1. 1,3-Butadiene	A2.
B. Bromomethane	BB. 1,1,2,2-Tetrachloroethane	BBB. 4-Chlorotoluene	BBBB. tert-Amyl methyl ether	B1. Hexane	B2.
C. Vinyl choride	CC. Toluene	CCC. tert-Butylbenzene	CCCC. 1-Chlorohexane	C1. Heptane	C2.
D. Chloroethane	DD. Chlorobenzene	DDD. 1,2,4-Trimethylbenzene	DDDD. Isopropyl alcohol	D1. Propylene	D2.
E. Methylene chloride	EE. Ethylbenzene	EEE. sec-Butylbenzene	EEEE. Acetonitrile	E1. Freon 11	E2.
F. Acetone	FF. Styrene	FFF. 1,3-Dichlorobenzene	FFFF. Acrolein	F1. Freon 12	F2.
G. Carbon disulfide	GG. Xylenes, total	GGG. p-Isopropyltoluene	GGGG. Acrylonitrile	G1. Freon 113	G2.
H. 1,1-Dichloroethene	HH. Vinyl acetate	HHH. 1,4-Dichlorobenzene	HHHH. 1,4-Dioxane	H1. Freon 114	H2.
I. 1,1-Dichloroethane	II. 2-Chloroethylvinyl ether	III. n-Butylbenzene	IIII. Isobutyl alcohol	I1. 2-Nitropropane	I2.
J. 1,2-Dichloroethene, total	JJ. Dichlorodifluoromethane	JJJ. 1,2-Dichlorobenzene	JJJJ. Methacrylonitrile	J1. Dimethyl disulfide	J2.
K. Chloroform	KK. Trichlorofluoromethane	KKK. 1,2,4-Trichlorobenzene	KKKK. Propionitrile	K1. 2,3-Dimethyl pentane	K2.
L. 1,2-Dichloroethane	LL. Methyl-tert-butyl ether	LLL. Hexachlorobutadiene	LLLL. Ethyl ether	L1. 2,4-Dimethyl pentane	L2.
M. 2-Butanone	MM. 1,2-Dibromo-3-chloropropane	MMM. Naphthalene	MMMM. Benzyl chloride	M1. 3,3-Dimethyl pentane	M2.
N. 1,1,1-Trichloroethane	NN. Methyl ethyl ketone	NNN. 1,2,3-Trichlorobenzene	NNNN. Iodomethane	N1. 2-Methylpentane	N2.
O. Carbon tetrachloride	OO. 2,2-Dichloropropane	OOO. 1,3,5-Trichlorobenzene	OOOO.1,1-Difluoroethane	O1. 3-Methylpentane	O2.
P. Bromodichloromethane	PP. Bromochloromethane	PPP. trans-1,2-Dichloroethene	PPPP. Tetrahydrofuran	P1. 3-Ethylpentane	P2.
Q. 1,2-Dichloropropane	QQ. 1,1-Dichloropropene	QQQ. cis-1,2-Dichloroethene	QQQQ. Methyl acetate	Q1. 2,2-Dimethylpentane	Q2.
R. cis-1,3-Dichloropropene	RR. Dibromomethane	RRR. m,p-Xylenes	RRRR. Ethyl acetate	R1. 2,2,3- Trimethylbutane	R2.
S. Trichloroethene	SS. 1,3-Dichloropropane	SSS. o-Xylene	SSSS. Cyclohexane	S1. 2,2,4-Trimethylpentane	S2.
T. Dibromochloromethane	TT. 1,2-Dibromoethane	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	TTTT. Methylcyclohexane	T1. 2-Methylhexane	T2.
U. 1,1,2-Trichloroethane	UU. 1,1,1,2-Tetrachloroethane	UUU. 1,2-Dichlorotetrafluoroethane	UUUU. Allyl chloride	U1. Nonanal	U2.
V. Benzene	VV. Isopropylbenzene	VVV. 4-Ethyltoluene	VVVV. Methyl methacrylate	V1. 2-Methylnaphthalene	V2.
W. trans-1,3-Dichloropropene	WW. Bromobenzene	WWW. Ethanol	WWWW. Ethyl methacrylate	W1. Methanol	W2.
X. Bromoform	XX. 1,2,3-Trichloropropane	XXX. Di-isopropyl ether	XXXX. cis-1,4-Dichloro-2-butene	X1. 1,2,3-Trimethylbenzene	X2.
Y. 4-Methyl-2-pentanone	YY. n-Propylbenzene	YYY. tert-Butanol	YYYY. trans-1,4-Dichloro-2-butene	Y1. 2-Propanol	Y2.
Z. 2-Hexanone	ZZ. 2-Chlorotoluene	ZZZ. tert-Butyl alcohol	ZZZZ. Pentachloroethane	Z1.	Z2.

LDC #: 49691C1a

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

Y N N/A Were field blanks identified in this SDG?

Y N N/A Were target compounds detected in the field blanks?

Blank units: ug/L **Associated sample units:** mg/kg

Sampling date: 09/28/20

Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: Associated Samples: 1 (ND)

Compound	Blank ID	Sample Identification								
	2									
E	0.40									

Blank units: **Associated sample units:**

Sampling date:

Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: Associated Samples:

Compound	Blank ID	Sample Identification								

Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

LDC #: 49691C1a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$ — A_x = Area of Compound — A_{is} = Area of associated internal standard

average RRF = sum of the RRFs/number of standards — C_x = Concentration of compound — C_{is} = Concentration of internal standard

%RSD = 100 * (S/X) — S= Standard deviation of the RRFs — X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 50 std)	Recalculated RRF (RRF 50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL CVOAMS4	9/16/2020	2-Butanone (BUT)	0.4018	0.4018	0.4143	0.4143	4.2	4.2
			cis-1,2-DCE (FBZ)	0.3926	0.3926	0.3885	0.3885	6.4	6.4
			1,4-Dioxane (DXE)	1.5287	1.5287	1.4586	1.4586	15.9	15.9
			Tetrachloroethene (CBZ)	0.5443	0.5443	0.5127	0.5127	11.2	11.2
			1,4-DCB (DCB)	1.9912	1.9912	1.9598	1.9599	15.4	15.4
2	ICAL CVOAMS12	9/21/2020	2-Butanone (BUT)	0.2577	0.2577	0.2593	0.2593	5.1	5.1
			cis-1,2-DCE (FBZ)	0.2575	0.2575	0.2565	0.2565	10.7	10.7
			1,4-Dioxane (DXE)	1.0334	1.0334	1.0875	1.0875	11.1	11.1
			Tetrachloroethene (CBZ)	0.2996	0.2996	0.3008	0.3008	8.2	8.2
			1,4-DCB (DCB)	1.2958	1.2958	1.3089	1.3089	8.2	8.2

LDC # 49691C1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CCV)	Recalculated RRF (CCV)	Reported % D	Recalculated %D
1	D72955	9/29/2020	2-Butanone (BUT)	0.4143	0.3631	0.3631	12.4	12.4
			cis-1,2-DCE (FBZ)	0.3885	0.3956	0.3956	1.8	1.8
			1,4-Dioxane (DXE)	1.4586	1.4705	1.4705	0.8	0.8
			Tetrachloroethene (CBZ)	0.5127	0.5183	0.5183	1.1	1.1
			1,4-DCB (DCB)	1.9598	1.8938	1.8938	3.4	3.4
2	O63909	9/30/2020	2-Butanone (BUT)	0.2593	0.2858	0.2858	10.2	10.2
			cis-1,2-DCE (FBZ)	0.2565	0.2739	0.2739	6.8	6.8
			1,4-Dioxane (DXE)	1.0875	1.1477	1.1477	5.5	5.5
			Tetrachloroethene (CBZ)	0.3008	0.3277	0.3277	9.0	9.0
			1,4-DCB (DCB)	1.3089	1.3712	1.3712	4.8	4.8

LDC #: 49619c1a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	50.0	47.1	94	94	0
1,2-Dichloroethane-d4		50.5	101	101	
Toluene-d8		46.9	94	94	
Bromofluorobenzene		51.6	103	103	

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 49691C1a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration; SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: LCS/D 460-727655/9,4

Compound	Spike Added (mg/kg)		Spiked Sample Concentration (mg/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
1,1-Dichloroethene	0.0200	0.0200	0.0209	0.0198	105	105	99	99	6	6
Trichloroethene			0.0205	0.0196	102	102	98	98	4	4
Benzene			0.0199	0.0194	99	99	97	97	2	2
Toluene			0.0196	0.0188	98	98	94	94	4	4
Chlorobenzene	✓	✓	0.0196	0.0186	98	98	93	93	5	5

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 49691C1a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260~~C~~)

The concentration of the sample was calculated for the compound identified below using the following calculation:

$$\text{Concentration} = \frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 1, PCE

$$\text{Conc.} = \frac{(2729)(50)(5\ mL)}{(402881)(0.5127)(4.01g)(0.8910)(1000)}$$

$$= 0.000924\ mg/kg$$

#	Sample ID	Compound	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Qualification
	1	PCE	0.0009z	0.0009z	—

30th Street, Long Island City, Site No. C241214 - LDC# 49691C

SDG: 4602192931

Analytical Method SW8260C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
A-2 (0-5)-20200928	460-219293-1	ETHYLBENZENE	9/29/2020		Y	N	U		U	0.0014	0.00028	mg/kg
A-2 (0-5)-20200928	460-219293-1	TOLUENE	9/29/2020		Y	N	U		U	0.0014	0.00033	mg/kg
A-2 (0-5)-20200928	460-219293-1	CARBON TETRACHLORIDE	9/29/2020		Y	N	U		U	0.0014	0.00054	mg/kg
A-2 (0-5)-20200928	460-219293-1	CHLOROBENZENE	9/29/2020		Y	N	U		U	0.0014	0.00025	mg/kg
A-2 (0-5)-20200928	460-219293-1	CHLOROETHANE	9/29/2020		Y	N	U		U	0.0014	0.00073	mg/kg
A-2 (0-5)-20200928	460-219293-1	CHLOROFORM	9/29/2020		Y	N	U		U	0.0014	0.00045	mg/kg
A-2 (0-5)-20200928	460-219293-1	CHLOROMETHANE	9/29/2020		Y	N	U		U	0.0014	0.00061	mg/kg
A-2 (0-5)-20200928	460-219293-1	Cis-1,2-Dichloroethylene	9/29/2020		Y	N	U		U	0.0014	0.00021	mg/kg
A-2 (0-5)-20200928	460-219293-1	CIS-1,3-DICHLOROPROPENE	9/29/2020		Y	N	U		U	0.0014	0.00038	mg/kg
A-2 (0-5)-20200928	460-219293-1	CYCLOHEXANE	9/29/2020		Y	N	U		U	0.0014	0.00031	mg/kg
A-2 (0-5)-20200928	460-219293-1	BROMOMETHANE	9/29/2020		Y	N	U		U	0.0014	0.00066	mg/kg
A-2 (0-5)-20200928	460-219293-1	DICHLORODIFLUOROMETHANE	9/29/2020		Y	N	U		U	0.0014	0.00047	mg/kg
A-2 (0-5)-20200928	460-219293-1	BROMOFORM	9/29/2020		Y	N	U		U	0.0014	0.00060	mg/kg
A-2 (0-5)-20200928	460-219293-1	Isopropylbenzene (Cumene)	9/29/2020		Y	N	U		U	0.0014	0.00018	mg/kg
A-2 (0-5)-20200928	460-219293-1	M,P-XYLENES	9/29/2020		Y	N	U		U	0.0014	0.00024	mg/kg
A-2 (0-5)-20200928	460-219293-1	METHYL ACETATE	9/29/2020		Y	N	U		U	0.0070	0.0060	mg/kg
A-2 (0-5)-20200928	460-219293-1	METHYL ETHYL KETONE (2-BUTANONE)	9/29/2020		Y	N	U		U	0.0070	0.0038	mg/kg
A-2 (0-5)-20200928	460-219293-1	METHYLCYCLOHEXANE	9/29/2020		Y	N	U		U	0.0014	0.00070	mg/kg
A-2 (0-5)-20200928	460-219293-1	O-XYLENE (1,2-DIMETHYLBENZENE)	9/29/2020		Y	N	U		U	0.0014	0.00027	mg/kg
A-2 (0-5)-20200928	460-219293-1	STYRENE	9/29/2020		Y	N	U		U	0.0014	0.00039	mg/kg
A-2 (0-5)-20200928	460-219293-1	TERT-BUTYL METHYL ETHER	9/29/2020		Y	N	U		U	0.0014	0.00018	mg/kg

SDG: 4602192931

Analytical Method SW8260C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
A-2 (0-5)-20200928	460-219293-1	TETRACHLOROETHYLENE(PCE)	9/29/2020	0.00092	Y	Y	J		J	0.0014	0.00020	mg/kg
A-2 (0-5)-20200928	460-219293-1	DIBROMOCHLOROMETHANE	9/29/2020		Y	N	U		U	0.0014	0.00027	mg/kg
A-2 (0-5)-20200928	460-219293-1	1,2-DICHLOROETHANE	9/29/2020		Y	N	U		U	0.0014	0.00041	mg/kg
A-2 (0-5)-20200928	460-219293-1	1,1,1-TRICHLOROETHANE	9/29/2020		Y	N	U		U	0.0014	0.00033	mg/kg
A-2 (0-5)-20200928	460-219293-1	1,1,2,2-TETRACHLOROETHANE	9/29/2020		Y	N	U		U	0.0014	0.00030	mg/kg
A-2 (0-5)-20200928	460-219293-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	9/29/2020		Y	N	U		U	0.0014	0.00042	mg/kg
A-2 (0-5)-20200928	460-219293-1	1,1,2-TRICHLOROETHANE	9/29/2020		Y	N	U		U	0.0014	0.00025	mg/kg
A-2 (0-5)-20200928	460-219293-1	1,1-DICHLOROETHANE	9/29/2020		Y	N	U		U	0.0014	0.00029	mg/kg
A-2 (0-5)-20200928	460-219293-1	1,1-DICHLOROETHENE	9/29/2020		Y	N	U		U	0.0014	0.00032	mg/kg
A-2 (0-5)-20200928	460-219293-1	1,2,3-TRICHLOROBENZENE	9/29/2020		Y	N	U		U	0.0014	0.00025	mg/kg
A-2 (0-5)-20200928	460-219293-1	1,2,4-TRICHLOROBENZENE	9/29/2020		Y	N	U		U	0.0014	0.00050	mg/kg
A-2 (0-5)-20200928	460-219293-1	1,2-DIBROMO-3-CHLOROPROPANE	9/29/2020		Y	N	U		U	0.0014	0.00064	mg/kg
A-2 (0-5)-20200928	460-219293-1	CARBON DISULFIDE	9/29/2020		Y	N	U		U	0.0014	0.00037	mg/kg
A-2 (0-5)-20200928	460-219293-1	1,2-DICHLOROBENZENE	9/29/2020		Y	N	U		U	0.0014	0.00020	mg/kg
A-2 (0-5)-20200928	460-219293-1	METHYLENE CHLORIDE	9/29/2020		Y	N	U		U	0.0014	0.00065	mg/kg
A-2 (0-5)-20200928	460-219293-1	1,2-DICHLOROPROPANE	9/29/2020		Y	N	U		U	0.0014	0.00059	mg/kg
A-2 (0-5)-20200928	460-219293-1	1,3-DICHLOROBENZENE	9/29/2020		Y	N	U		U	0.0014	0.00022	mg/kg
A-2 (0-5)-20200928	460-219293-1	1,4-DICHLOROBENZENE	9/29/2020		Y	N	U		U	0.0014	0.00032	mg/kg
A-2 (0-5)-20200928	460-219293-1	1,4-DIOXANE (P-DIOXANE)	9/29/2020		Y	N	U		U	0.028	0.013	mg/kg
A-2 (0-5)-20200928	460-219293-1	2-HEXANONE	9/29/2020		Y	N	U		U	0.0070	0.0024	mg/kg
A-2 (0-5)-20200928	460-219293-1	ACETONE	9/29/2020		Y	N	U		U	0.0084	0.0080	mg/kg
A-2 (0-5)-20200928	460-219293-1	BENZENE	9/29/2020		Y	N	U		U	0.0014	0.00036	mg/kg

SDG: 4602192931

Analytical Method SW8260C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
A-2 (0-5)-20200928	460-219293-1	BROMOCHLOROMETHANE	9/29/2020		Y	N	U		U	0.0014	0.00039	mg/kg
A-2 (0-5)-20200928	460-219293-1	BROMODICHLOROMETHANE	9/29/2020		Y	N	U		U	0.0014	0.00036	mg/kg
A-2 (0-5)-20200928	460-219293-1	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	9/29/2020		Y	N	U		U	0.0014	0.00025	mg/kg
A-2 (0-5)-20200928	460-219293-1	TRANS-1,3-DICHLOROPROPENE	9/29/2020		Y	N	U		U	0.0014	0.00037	mg/kg
A-2 (0-5)-20200928	460-219293-1	TRICHLOROETHYLENE (TCE)	9/29/2020		Y	N	U		U	0.0014	0.00020	mg/kg
A-2 (0-5)-20200928	460-219293-1	TRICHLOROFLUOROMETHANE	9/29/2020		Y	N	U		U	0.0014	0.00057	mg/kg
A-2 (0-5)-20200928	460-219293-1	VINYL CHLORIDE	9/29/2020		Y	N	U		U	0.0014	0.00076	mg/kg
A-2 (0-5)-20200928	460-219293-1	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	9/29/2020		Y	N	U		U	0.0070	0.0022	mg/kg
A-2 (0-5)-20200928	460-219293-1	TRANS-1,2-DICHLOROETHENE	9/29/2020		Y	N	U		U	0.0014	0.00034	mg/kg
Trip Blank 92820-20200928	460-219293-2	CHLOROFORM	9/30/2020		Y	N	U		U	1.0	0.33	ug/l
Trip Blank 92820-20200928	460-219293-2	Isopropylbenzene (Cumene)	9/30/2020		Y	N	U		U	1.0	0.34	ug/l
Trip Blank 92820-20200928	460-219293-2	ETHYLBENZENE	9/30/2020		Y	N	U		U	1.0	0.30	ug/l
Trip Blank 92820-20200928	460-219293-2	DICHLORODIFLUOROMETHANE	9/30/2020		Y	N	U		U	1.0	0.31	ug/l
Trip Blank 92820-20200928	460-219293-2	DIBROMOCHLOROMETHANE	9/30/2020		Y	N	U		U	1.0	0.28	ug/l
Trip Blank 92820-20200928	460-219293-2	CYCLOHEXANE	9/30/2020		Y	N	U		U	1.0	0.32	ug/l
Trip Blank 92820-20200928	460-219293-2	CIS-1,3-DICHLOROPROPENE	9/30/2020		Y	N	U		U	1.0	0.22	ug/l
Trip Blank 92820-20200928	460-219293-2	M,P-XYLENES	9/30/2020		Y	N	U		U	1.0	0.30	ug/l
Trip Blank 92820-20200928	460-219293-2	CHLOROMETHANE	9/30/2020		Y	N	U		U	1.0	0.40	ug/l
Trip Blank 92820-20200928	460-219293-2	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	9/30/2020		Y	N	U		U	5.0	1.3	ug/l
Trip Blank 92820-20200928	460-219293-2	CHLOROETHANE	9/30/2020		Y	N	U		U	1.0	0.32	ug/l
Trip Blank 92820-20200928	460-219293-2	Cis-1,2-Dichloroethylene	9/30/2020		Y	N	U		U	1.0	0.22	ug/l
Trip Blank 92820-20200928	460-219293-2	CHLOROBENZENE	9/30/2020		Y	N	U		U	1.0	0.38	ug/l

SDG: 4602192931

Analytical Method SW8260C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
Trip Blank 92820-20200928	460-219293-2	METHYL ETHYL KETONE (2-BUTANONE)	9/30/2020		Y	N	U		U	5.0	1.9	ug/l
Trip Blank 92820-20200928	460-219293-2	BROMOFORM	9/30/2020		Y	N	U		U	1.0	0.54	ug/l
Trip Blank 92820-20200928	460-219293-2	VINYL CHLORIDE	9/30/2020		Y	N	U		U	1.0	0.17	ug/l
Trip Blank 92820-20200928	460-219293-2	TRICHLOROFLUOROMETHANE	9/30/2020		Y	N	U		U	1.0	0.32	ug/l
Trip Blank 92820-20200928	460-219293-2	TRICHLOROETHYLENE (TCE)	9/30/2020		Y	N	U		U	1.0	0.31	ug/l
Trip Blank 92820-20200928	460-219293-2	TRANS-1,3-DICHLOROPROPENE	9/30/2020		Y	N	U		U	1.0	0.22	ug/l
Trip Blank 92820-20200928	460-219293-2	TRANS-1,2-DICHLOROETHENE	9/30/2020		Y	N	U		U	1.0	0.24	ug/l
Trip Blank 92820-20200928	460-219293-2	TOLUENE	9/30/2020		Y	N	U		U	1.0	0.38	ug/l
Trip Blank 92820-20200928	460-219293-2	TETRACHLOROETHYLENE(PCE)	9/30/2020		Y	N	U		U	1.0	0.25	ug/l
Trip Blank 92820-20200928	460-219293-2	TERT-BUTYL METHYL ETHER	9/30/2020		Y	N	U		U	1.0	0.22	ug/l
Trip Blank 92820-20200928	460-219293-2	STYRENE	9/30/2020		Y	N	U		U	1.0	0.42	ug/l
Trip Blank 92820-20200928	460-219293-2	O-XYLENE (1,2-DIMETHYLBENZENE)	9/30/2020		Y	N	U		U	1.0	0.36	ug/l
Trip Blank 92820-20200928	460-219293-2	METHYL ACETATE	9/30/2020		Y	N	U		U	5.0	0.79	ug/l
Trip Blank 92820-20200928	460-219293-2	1,2-DICHLOROBENZENE	9/30/2020		Y	N	U		U	1.0	0.21	ug/l
Trip Blank 92820-20200928	460-219293-2	METHYLCYCLOHEXANE	9/30/2020		Y	N	U		U	1.0	0.71	ug/l
Trip Blank 92820-20200928	460-219293-2	1,1,1-TRICHLOROETHANE	9/30/2020		Y	N	U		U	1.0	0.24	ug/l
Trip Blank 92820-20200928	460-219293-2	METHYLENE CHLORIDE	9/30/2020	0.40	Y	Y	J		J	1.0	0.32	ug/l
Trip Blank 92820-20200928	460-219293-2	1,1,2,2-TETRACHLOROETHANE	9/30/2020		Y	N	U		U	1.0	0.37	ug/l
Trip Blank 92820-20200928	460-219293-2	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	9/30/2020		Y	N	U		U	1.0	0.31	ug/l
Trip Blank 92820-20200928	460-219293-2	1,1,2-TRICHLOROETHANE	9/30/2020		Y	N	U		U	1.0	0.20	ug/l
Trip Blank 92820-20200928	460-219293-2	1,1-DICHLOROETHANE	9/30/2020		Y	N	U		U	1.0	0.26	ug/l
Trip Blank 92820-20200928	460-219293-2	1,1-DICHLOROETHENE	9/30/2020		Y	N	U		U	1.0	0.26	ug/l

SDG: 4602192931

Analytical Method SW8260C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
Trip Blank 92820-20200928	460-219293-2	1,2,3-TRICHLOROBENZENE	9/30/2020		Y	N	U		U	1.0	0.36	ug/l
Trip Blank 92820-20200928	460-219293-2	1,2,4-TRICHLOROBENZENE	9/30/2020		Y	N	U		U	1.0	0.37	ug/l
Trip Blank 92820-20200928	460-219293-2	CARBON DISULFIDE	9/30/2020		Y	N	U		U	1.0	0.82	ug/l
Trip Blank 92820-20200928	460-219293-2	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	9/30/2020		Y	N	U		U	1.0	0.50	ug/l
Trip Blank 92820-20200928	460-219293-2	CARBON TETRACHLORIDE	9/30/2020		Y	N	U		U	1.0	0.21	ug/l
Trip Blank 92820-20200928	460-219293-2	1,2-DICHLOROETHANE	9/30/2020		Y	N	U		U	1.0	0.43	ug/l
Trip Blank 92820-20200928	460-219293-2	1,2-DICHLOROPROPANE	9/30/2020		Y	N	U		U	1.0	0.35	ug/l
Trip Blank 92820-20200928	460-219293-2	1,3-DICHLOROBENZENE	9/30/2020		Y	N	U		U	1.0	0.34	ug/l
Trip Blank 92820-20200928	460-219293-2	1,4-DICHLOROBENZENE	9/30/2020		Y	N	U		U	1.0	0.33	ug/l
Trip Blank 92820-20200928	460-219293-2	1,4-DIOXANE (P-DIOXANE)	9/30/2020		Y	N	U		U	50	28	ug/l
Trip Blank 92820-20200928	460-219293-2	2-HEXANONE	9/30/2020		Y	N	U		U	5.0	1.1	ug/l
Trip Blank 92820-20200928	460-219293-2	ACETONE	9/30/2020		Y	N	U		U	5.0	4.4	ug/l
Trip Blank 92820-20200928	460-219293-2	BENZENE	9/30/2020		Y	N	U		U	1.0	0.20	ug/l
Trip Blank 92820-20200928	460-219293-2	BROMOCHLOROMETHANE	9/30/2020		Y	N	U		U	1.0	0.41	ug/l
Trip Blank 92820-20200928	460-219293-2	BROMODICHLOROMETHANE	9/30/2020		Y	N	U		U	1.0	0.34	ug/l
Trip Blank 92820-20200928	460-219293-2	BROMOMETHANE	9/30/2020		Y	N	U		U	1.0	0.55	ug/l
Trip Blank 92820-20200928	460-219293-2	1,2-DIBROMO-3-CHLOROPROPANE	9/30/2020		Y	N	U		U	1.0	0.38	ug/l

Site: Long Island City, 30th Street
Laboratory: Eurofins
Report No.: 460-219825-1
Reviewer: Josephine Go and Christina Rink/Laboratory Data Consultants for GEI Consultants, Inc. – Huntington Station, NY
Date: December 1, 2020

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
A-3 (0-5)	460-219825-1	VOC
A-3 (5-10)	460-219825-2	VOC
A-2 (5-10)	460-219825-3	VOC
A-1 (5-10)	460-219825-4	VOC
Trip Blank 100520	460-219825-5	VOC

Associated QC Samples(s):
Field/Trip Blanks: Trip Blank 100520
Field Duplicate pair: None Associated

The above-listed soil and water samples were collected on October 5, 2020 and were analyzed for volatile organic compounds (VOCs) by SW-846 method 8260C. The data validation was performed in accordance with the USEPA Region 2 *Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-Method 8260B and 8260C,* SOP HW-24, Revision 4 (October 2014) and the USEPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,* EPA 540-R-2017-002 (January 2017), modified as necessary to accommodate the non-CLP methodologies used.

The organic data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) Tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Control Sample (LCS) Results
- Internal Standards
- Field Duplicate Results
- Moisture Content
- Quantitation Limits and Data Assessment
- Sample Quantitation and Compound Identification

Overall Evaluation of Data and Potential Usability Issues

All results are usable as reported or usable with minor qualification due to laboratory quality control outliers.

The validation findings were based on the following information.

Data Completeness

The data package was complete as defined under the requirements for the NYSDEC ASP category B laboratory deliverables.

Holding Times and Sample Preservation

All criteria were met.

GC/MS Tunes

All criteria were met.

Initial and Continuing Calibrations

Initial Calibration:

All criteria were met.

Continuing calibration:

Compounds that did not meet criteria are summarized in the following table.

Date	Standard ID	Compound	CC %D	Associated Samples		Validation Action
10/07/20	B64289	Chloromethane	29.8	A-3 (0-5) A-3 (5-10) A-2 (5-10) A-1 (5-10)	XX	UJ nondetects

X = Initial calibration (IC) relative standard deviation (%RSD) > 20; estimate (J/UJ) positive and nondetect results.
XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ) positive and nondetect results.
SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.
+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The chloromethane results were estimated due to continuing calibration exceedance. The bias cannot be determined. The results can be used for project objectives as nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Blanks

Contamination was not detected in the method blanks.

Contamination was detected in the trip blank sample Trip Blank 100520 for VOC analysis. The presence of blank contamination indicates that false positives may exist for these compounds in the associated samples. Action Levels (ALs) were established at <2x reporting limits (RL) (for common contaminants) and <RL (for other contaminants) of the concentrations detected. The following table summarizes the contamination detected.

Field Blank ID	Compound	Level Detected	Action Level	Associated Samples
Trip Blank 100520	Methylene chloride	0.47 ug/L	2xRL	A-3 (0-5) A-3 (5-10) A-2 (5-10) A-1 (5-10)

Sample results were qualified as follows:

- If sample concentration was < the reporting limit (RL) and ≤ the Action Level, qualify the result as a nondetect (U) at the RL.
- If sample concentration was > the RL and ≤ the Action Level, qualify the result as not detected (U) at the reported concentration.

Qualified sample results are listed in the table below.

Sample ID	Compound	Level Detected	Validation Action
A-3 (0-5)	Methylene chloride	0.00093 mg/Kg	0.0013U mg/Kg
A-3 (5-10)	Methylene chloride	0.00086 mg/Kg	0.0013U mg/Kg

These results can be used for project objectives as nondetects (U) which may have a minor impact on the data usability.

Surrogate Recoveries

All criteria were met.

MS/MSD Results

MS/MSD analyses were not associated with this sample set. Validation action was not required on this basis.

LCS Results

The following table lists the LCS/LCSD relative percent differences (RPD) outside of control limits in the VOC analysis and the resulting validation actions.

LCS ID	Compound	RPD (Limits)	Affected Sample	Validation Action
LCS/LCSD 460-729692/4,17	Dichlorodifluoromethane	32 (≤30)	Trip Blank 100520	None

LCS ID	Compound	RPD (Limits)	Affected Sample	Validation Action
LCS/LCSD 460-729862/3,6	1,2-Dibromo-3-chloropropane	32 (≤30)	A-3 (0-5) A-3 (5-10) A-2 (5-10) A-1 (5-10)	None

Validation action was not required for dichlorodifluoromethane and 1,2-dibromo-3-chloropropane due to LCS/LCSD relative percent difference exceedances as positive results only are affected and these compounds were not detected in the associated samples.

Internal Standards

All criteria were met.

Field Duplicate Results

A field duplicate pair was not associated with this sample set. Validation action was not required on this basis.

Moisture Content

All criteria were met.

Quantitation Limits and Data Assessment

Results were reported which were below the reporting limit (RL) and above the method detection limit (MDL) in the VOC analysis. These results were qualified as estimated (J) by the laboratory.

Dilutions were not required for VOC analysis.

Sample Quantitation and Compound Identification

Calculations were spot-checked; no discrepancies were noted.

DATA VALIDATION QUALIFIERS

U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.

J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.

JN - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.

R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

LDC #: 49691D1a
SDG #: 460-219825-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Category B

Date: 11/30/20
Page: 1 of 1
Reviewer: SVG
2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / A	1 CAL ≤ 20% r ICV ≤ 30%
IV.	Continuing calibration	SW	CCV ≤ 20%
V.	Laboratory Blanks	A	
VI.	Field blanks	SW	TB = 5
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	SW	LCS/D
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	Results < RL > MDL = J dets
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	A-3 (0-5)	460-219825-1	Soil	10/05/20
2	A-3 (5-10)	460-219825-2	Soil	10/05/20
3	A-2 (5-10)	460-219825-3	Soil	10/05/20
4	A-1 (5-10)	460-219825-4	Soil	10/05/20
5	Trip Blank 100520	460-219825-5	Water	10/05/20
6				
7				
8				
9				

Notes:

1	LBS460-729530/1-A						
1	MB460-729862/8						
7	L - 729692/8						

LDC #: 49691 D1a

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG

Method: Volatiles (EPA SW 846 Method 8260C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20% and relative response factors (RRF) within method criteria?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 30%?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 20% and relative response factors (RRF) within method criteria?		✓		
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks were identified in this SDG?	✓			
Were target compounds detected in the field blanks?	✓			
VII. Surrogate spikes				
Were all surrogate percent recovery (%R) within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?		✓	✓	
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
X. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓	✓	
Were target compounds detected in the field duplicates?				
XI. Internal standards				
Were internal standard area counts within -50% to +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XII. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	AA. Tetrachloroethene	AAA. 1,3,5-Trimethylbenzene	AAAA. Ethyl tert-butyl ether	A1. 1,3-Butadiene	A2.
B. Bromomethane	BB. 1,1,2,2-Tetrachloroethane	BBB. 4-Chlorotoluene	BBBB. tert-Amyl methyl ether	B1. Hexane	B2.
C. Vinyl choride	CC. Toluene	CCC. tert-Butylbenzene	CCCC. 1-Chlorohexane	C1. Heptane	C2.
D. Chloroethane	DD. Chlorobenzene	DDD. 1,2,4-Trimethylbenzene	DDDD. Isopropyl alcohol	D1. Propylene	D2.
E. Methylene chloride	EE. Ethylbenzene	EEE. sec-Butylbenzene	EEEE. Acetonitrile	E1. Freon 11	E2.
F. Acetone	FF. Styrene	FFF. 1,3-Dichlorobenzene	FFFF. Acrolein	F1. Freon 12	F2.
G. Carbon disulfide	GG. Xylenes, total	GGG. p-Isopropyltoluene	GGGG. Acrylonitrile	G1. Freon 113	G2.
H. 1,1-Dichloroethene	HH. Vinyl acetate	HHH. 1,4-Dichlorobenzene	HHHH. 1,4-Dioxane	H1. Freon 114	H2.
I. 1,1-Dichloroethane	II. 2-Chloroethylvinyl ether	III. n-Butylbenzene	IIII. Isobutyl alcohol	I1. 2-Nitropropane	I2.
J. 1,2-Dichloroethene, total	JJ. Dichlorodifluoromethane	JJJ. 1,2-Dichlorobenzene	JJJJ. Methacrylonitrile	J1. Dimethyl disulfide	J2.
K. Chloroform	KK. Trichlorofluoromethane	KKK. 1,2,4-Trichlorobenzene	KKKK. Propionitrile	K1. 2,3-Dimethyl pentane	K2.
L. 1,2-Dichloroethane	LL. Methyl-tert-butyl ether	LLL. Hexachlorobutadiene	LLLL. Ethyl ether	L1. 2,4-Dimethyl pentane	L2.
M. 2-Butanone	MM. 1,2-Dibromo-3-chloropropane	MMM. Naphthalene	MMMM. Benzyl chloride	M1. 3,3-Dimethyl pentane	M2.
N. 1,1,1-Trichloroethane	NN. Methyl ethyl ketone	NNN. 1,2,3-Trichlorobenzene	NNNN. Iodomethane	N1. 2-Methylpentane	N2.
O. Carbon tetrachloride	OO. 2,2-Dichloropropane	OOO. 1,3,5-Trichlorobenzene	OOOO.1,1-Difluoroethane	O1. 3-Methylpentane	O2.
P. Bromodichloromethane	PP. Bromochloromethane	PPP. trans-1,2-Dichloroethene	PPPP. Tetrahydrofuran	P1. 3-Ethylpentane	P2.
Q. 1,2-Dichloropropane	QQ. 1,1-Dichloropropene	QQQ. cis-1,2-Dichloroethene	QQQQ. Methyl acetate	Q1. 2,2-Dimethylpentane	Q2.
R. cis-1,3-Dichloropropene	RR. Dibromomethane	RRR. m,p-Xylenes	RRRR. Ethyl acetate	R1. 2,2,3- Trimethylbutane	R2.
S. Trichloroethene	SS. 1,3-Dichloropropane	SSS. o-Xylene	SSSS. Cyclohexane	S1. 2,2,4-Trimethylpentane	S2.
T. Dibromochloromethane	TT. 1,2-Dibromoethane	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	TTTT. Methylcyclohexane	T1. 2-Methylhexane	T2.
U. 1,1,2-Trichloroethane	UU. 1,1,1,2-Tetrachloroethane	UUU. 1,2-Dichlorotetrafluoroethane	UUUU. Allyl chloride	U1. Nonanal	U2.
V. Benzene	VV. Isopropylbenzene	VVV. 4-Ethyltoluene	VVVV. Methyl methacrylate	V1. 2-Methylnaphthalene	V2.
W. trans-1,3-Dichloropropene	WW. Bromobenzene	WWW. Ethanol	WWWW. Ethyl methacrylate	W1. Methanol	W2.
X. Bromoform	XX. 1,2,3-Trichloropropane	XXX. Di-isopropyl ether	XXXX. cis-1,4-Dichloro-2-butene	X1. 1,2,3-Trimethylbenzene	X2.
Y. 4-Methyl-2-pentanone	YY. n-Propylbenzene	YYY. tert-Butanol	YYYY. trans-1,4-Dichloro-2-butene	Y1. 2-Propanol	Y2.
Z. 2-Hexanone	ZZ. 2-Chlorotoluene	ZZZ. tert-Butyl alcohol	ZZZZ. Pentachloroethane	Z1.	Z2.

LDC #: 49691 D1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Y (N) N/A Were percent differences (%D) ≤20 % and relative response factors (RRF) within the method criteria?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤20.0%)	Finding RRF (Limit)	Associated Samples	Qualifications
	10/07/20	BG4289	A	29.8		1-4, LB, MB1	(ND) J (UJ A

Note: * = Ave RRF failed method criteria but within validation criteria

LDC #: 49691D1a

VALIDATION FINDINGS WORKSHEET
Field Blanks

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?
Blank units: ug/L **Associated sample units:** mg/kg
Sampling date: 10/05/20
Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: _____ Associated Samples: 1-4

Compound	Blank ID	Sample Identification								
	5		1	2						
CKH E	0.47		0.00093 / 0.00134	0.00086 / 0.00134						

Blank units: _____ **Associated sample units:** _____
Sampling date: _____
Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: _____ Associated Samples: _____

Compound	Blank ID	Sample Identification								

Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

LDC #: 49691 D1a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y (N) N/A Was a LCS required?
Y (N) N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	LCS/D 460-729692/4,	17 JJ	( )	( )	32 (30)	5, MB2 (ND)	J dets /P
			( )	( )	( )		
			( )	( )	( )		
	LCS/D 460-729862/3,	6 MM	( )	( )	32 (30)	1-4, LB, MB1 (ND)	
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
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			( )	( )	( )		

LDC #: 49691D1a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound
S= Standard deviation of the RRFs

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 50 std)	Recalculated RRF (RRF 50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL CVOAMS17	10/3/2020	2-Butanone (BUT)	0.3133	0.3133	0.3200	0.3200	16.8	16.8
			cis-1,2-DCE (FBZ)	0.3214	0.3214	0.3036	0.3036	6.7	6.7
			1,4-Dioxane (DXE)	1.3268	1.3268	1.1641	1.1641	13.9	13.9
			Tetrachloroethene (CBZ)	0.4279	0.4279	0.4219	0.4218	15.9	15.9
			1,4-DCB (DCB)	1.5645	1.5645	1.4902	1.4903	7.7	7.7
2	ICAL CVOAMS2	10/3/2020	2-Butanone (BUT)	0.3429	0.3429	0.3351	0.3351	13.1	13.1
			cis-1,2-DCE (FBZ)	0.4627	0.4627	0.4124	0.4124	7.0	7.0
			1,4-Dioxane (DXE)	see r2 calc					
			Tetrachloroethene (CBZ)	0.5561	0.5561	0.4835	0.4835	9.4	9.4
			1,4-DCB (DCB)	2.2260	2.2260	1.9700	1.9700	6.9	6.9

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Method: GC/MS 1,4-Dioxane (EPA SW 846 Method 8260C)

Calibration Date	Instrument	Compound	Standard	(Y) Response	(X) Conc.	(X^2) Conc.
10/3/2020	VOAMS2	1,4-Dioxane	20	0.0207	0.02	0.00040
			100	0.1908	0.10	0.0100
		IS = 1,4-Dioxane-d8	400	0.6535	0.40	0.1600
			1000	1.6444	1.00	1.0000
			4000	5.8547	4.00	16.0000
			10000	11.9232	10.00	100.0000

Regression Output	**Calculated**		***Reported WQR***	
Constant	*c*	*0.01340*	*c*	*-14.39000*
R Squared	*r2*	*1.000*		*0.9920*
	m1	*m2*	*m1*	*m2*
X Coefficient(s)	*1.64443*	*-0.04536*	*1.7988*	*-0.000064*
Correlation Coefficient		*0.999993*		
Coefficient of Determination (r^2)		*0.999985*		

LDC # 49691D1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CCV)	Recalculated RRF (CCV)	Reported % D	Recalculated %D
1	TT131002	10/7/2020	2-Butanone (BUT)	0.3200	0.3123	0.3123	2.4	2.4
			cis-1,2-DCE (FBZ)	0.3036	0.3283	0.3283	8.1	8.1
			1,4-Dioxane (DXE)	1.1641	1.2985	1.2985	11.6	11.6
			Tetrachloroethene (CBZ)	0.4219	0.4727	0.4727	12.0	12.0
			1,4-DCB (DCB)	1.4902	1.5600	1.5600	4.7	4.7
2	B64289	10/7/2020	2-Butanone (BUT)	0.3351	0.3963	0.3963	18.2	18.2
			cis-1,2-DCE (FBZ)	0.4124	0.4500	0.4500	9.1	9.1
			1,4-Dioxane (DXE)	400.00	438.43	438.43	9.6	9.6
			Tetrachloroethene (CBZ)	0.4835	0.5606	0.5606	15.9	15.9
			1,4-DCB (DCB)	1.9700	2.0985	2.0985	6.5	6.5

LDC #: 49691 D1a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: # 1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	50.0	55.9	112	112	0
1,2-Dichloroethane-d4	↓	44.3	89	89	↓
Toluene-d8		46.9	94	94	
Bromofluorobenzene	↓	56.5	113	113	↓

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 49691D1a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration; SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: LCSD 460-729862-3,6

Compound	Spike Added (mg/kg)		Spiked Sample Concentration (mg/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
1,1-Dichloroethene	0.0200	0.0200	0.0170	0.0194	85	85	97	97	13	13
Trichloroethene	↓	↓	0.0188	0.0219	94	94	110	110	15	15
Benzene			0.0160	0.0186	80	80	93	93	15	15
Toluene			0.0174	0.0200	87	87	100	100	14	14
Chlorobenzene	✓	✓	0.0184	0.0212	92	92	106	106	14	14

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 49691D1a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The concentration of the sample was calculated for the compound identified below using the following calculation:

$$\text{Concentration} = \frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 1, PCE

$$\text{Conc.} = \frac{(11762)(50)(5\text{mL})}{(374499)(0.4835)(4.43\text{g})(0.857)(1000)}$$

$$= 0.00428$$

$$\approx 0.0043 \text{ mg/kg}$$

#	Sample ID	Compound	Reported Concentration ~~(ug/L)~~ (mg/kg)	Calculated Concentration ~~(ug/L)~~ (mg/kg)	Qualification
	1	PCE	0.0043	0.0043	—

30th Street, Long Island City, Site No. C241214 - LDC# 49691D

SDG: 4602198251

Analytical Method SW8260C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
A-3 (0-5)-20201005	460-219825-1	ETHYLBENZENE	10/7/2020		Y	N	U		U	0.0013	0.00026	mg/kg
A-3 (0-5)-20201005	460-219825-1	TETRACHLOROETHYLENE(PCE)	10/7/2020	0.0043	Y	Y				0.0013	0.00019	mg/kg
A-3 (0-5)-20201005	460-219825-1	CARBON TETRACHLORIDE	10/7/2020		Y	N	U		U	0.0013	0.00051	mg/kg
A-3 (0-5)-20201005	460-219825-1	CHLOROBENZENE	10/7/2020		Y	N	U		U	0.0013	0.00023	mg/kg
A-3 (0-5)-20201005	460-219825-1	CHLOROETHANE	10/7/2020		Y	N	U		U	0.0013	0.00069	mg/kg
A-3 (0-5)-20201005	460-219825-1	CHLOROFORM	10/7/2020		Y	N	U		U	0.0013	0.00042	mg/kg
A-3 (0-5)-20201005	460-219825-1	CHLOROMETHANE	10/7/2020		Y	N	U	UJ	UJ	0.0013	0.00057	mg/kg
A-3 (0-5)-20201005	460-219825-1	Cis-1,2-Dichloroethylene	10/7/2020		Y	N	U		U	0.0013	0.00020	mg/kg
A-3 (0-5)-20201005	460-219825-1	CIS-1,3-DICHLOROPROPENE	10/7/2020		Y	N	U		U	0.0013	0.00036	mg/kg
A-3 (0-5)-20201005	460-219825-1	BROMOMETHANE	10/7/2020		Y	N	U		U	0.0013	0.00062	mg/kg
A-3 (0-5)-20201005	460-219825-1	DIBROMOCHLOROMETHANE	10/7/2020		Y	N	U		U	0.0013	0.00026	mg/kg
A-3 (0-5)-20201005	460-219825-1	BROMOFORM	10/7/2020		Y	N	U		U	0.0013	0.00056	mg/kg
A-3 (0-5)-20201005	460-219825-1	M,P-XYLENES	10/7/2020		Y	N	U		U	0.0013	0.00023	mg/kg
A-3 (0-5)-20201005	460-219825-1	METHYL ACETATE	10/7/2020		Y	N	U		U	0.0066	0.0057	mg/kg
A-3 (0-5)-20201005	460-219825-1	METHYL ETHYL KETONE (2-BUTANONE)	10/7/2020		Y	N	U		U	0.0066	0.0036	mg/kg
A-3 (0-5)-20201005	460-219825-1	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	10/7/2020		Y	N	U		U	0.0066	0.0020	mg/kg
A-3 (0-5)-20201005	460-219825-1	METHYLCYCLOHEXANE	10/7/2020		Y	N	U		U	0.0013	0.00066	mg/kg
A-3 (0-5)-20201005	460-219825-1	METHYLENE CHLORIDE	10/7/2020		Y	N	J	U	U	0.0013	0.00061	mg/kg
A-3 (0-5)-20201005	460-219825-1	O-XYLENE (1,2-DIMETHYLBENZENE)	10/7/2020		Y	N	U		U	0.0013	0.00026	mg/kg
A-3 (0-5)-20201005	460-219825-1	STYRENE	10/7/2020		Y	N	U		U	0.0013	0.00037	mg/kg
A-3 (0-5)-20201005	460-219825-1	TERT-BUTYL METHYL ETHER	10/7/2020		Y	N	U		U	0.0013	0.00016	mg/kg

SDG: 4602198251

Analytical Method SW8260C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
A-3 (0-5)-20201005	460-219825-1	CYCLOHEXANE	10/7/2020		Y	N	U		U	0.0013	0.00029	mg/kg
A-3 (0-5)-20201005	460-219825-1	1,2-DICHLOROETHANE	10/7/2020		Y	N	U		U	0.0013	0.00039	mg/kg
A-3 (0-5)-20201005	460-219825-1	1,1,2,2-TETRACHLOROETHANE	10/7/2020		Y	N	U		U	0.0013	0.00028	mg/kg
A-3 (0-5)-20201005	460-219825-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	10/7/2020		Y	N	U		U	0.0013	0.00040	mg/kg
A-3 (0-5)-20201005	460-219825-1	1,1,2-TRICHLOROETHANE	10/7/2020		Y	N	U		U	0.0013	0.00023	mg/kg
A-3 (0-5)-20201005	460-219825-1	1,1-DICHLOROETHANE	10/7/2020		Y	N	U		U	0.0013	0.00027	mg/kg
A-3 (0-5)-20201005	460-219825-1	1,1-DICHLOROETHENE	10/7/2020		Y	N	U		U	0.0013	0.00030	mg/kg
A-3 (0-5)-20201005	460-219825-1	1,2,3-TRICHLOROBENZENE	10/7/2020		Y	N	U		U	0.0013	0.00024	mg/kg
A-3 (0-5)-20201005	460-219825-1	1,2,4-TRICHLOROBENZENE	10/7/2020		Y	N	U		U	0.0013	0.00047	mg/kg
A-3 (0-5)-20201005	460-219825-1	1,2-DIBROMO-3-CHLOROPROPANE	10/7/2020		Y	N	UT		UT	0.0013	0.00061	mg/kg
A-3 (0-5)-20201005	460-219825-1	CARBON DISULFIDE	10/7/2020		Y	N	U		U	0.0013	0.00035	mg/kg
A-3 (0-5)-20201005	460-219825-1	1,2-DICHLOROBENZENE	10/7/2020		Y	N	U		U	0.0013	0.00019	mg/kg
A-3 (0-5)-20201005	460-219825-1	Isopropylbenzene (Cumene)	10/7/2020		Y	N	U		U	0.0013	0.00017	mg/kg
A-3 (0-5)-20201005	460-219825-1	1,2-DICHLOROPROPANE	10/7/2020		Y	N	U		U	0.0013	0.00056	mg/kg
A-3 (0-5)-20201005	460-219825-1	1,3-DICHLOROBENZENE	10/7/2020		Y	N	U		U	0.0013	0.00021	mg/kg
A-3 (0-5)-20201005	460-219825-1	1,4-DICHLOROBENZENE	10/7/2020		Y	N	U		U	0.0013	0.00030	mg/kg
A-3 (0-5)-20201005	460-219825-1	1,4-DIOXANE (P-DIOXANE)	10/7/2020		Y	N	U		U	0.026	0.012	mg/kg
A-3 (0-5)-20201005	460-219825-1	2-HEXANONE	10/7/2020		Y	N	U		U	0.0066	0.0023	mg/kg
A-3 (0-5)-20201005	460-219825-1	ACETONE	10/7/2020		Y	N	U		U	0.0079	0.0075	mg/kg
A-3 (0-5)-20201005	460-219825-1	BENZENE	10/7/2020		Y	N	U		U	0.0013	0.00034	mg/kg
A-3 (0-5)-20201005	460-219825-1	BROMOCHLOROMETHANE	10/7/2020		Y	N	U		U	0.0013	0.00037	mg/kg
A-3 (0-5)-20201005	460-219825-1	BROMODICHLOROMETHANE	10/7/2020		Y	N	U		U	0.0013	0.00034	mg/kg

SDG: 4602198251

Analytical Method SW8260C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
A-3 (0-5)-20201005	460-219825-1	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	10/7/2020		Y	N	U		U	0.0013	0.00024	mg/kg
A-3 (0-5)-20201005	460-219825-1	TRANS-1,2-DICHLOROETHENE	10/7/2020		Y	N	U		U	0.0013	0.00032	mg/kg
A-3 (0-5)-20201005	460-219825-1	TRANS-1,3-DICHLOROPROPENE	10/7/2020		Y	N	U		U	0.0013	0.00035	mg/kg
A-3 (0-5)-20201005	460-219825-1	TRICHLOROETHYLENE (TCE)	10/7/2020	0.00020	Y	Y	J		J	0.0013	0.00019	mg/kg
A-3 (0-5)-20201005	460-219825-1	TRICHLOROFLUOROMETHANE	10/7/2020		Y	N	U		U	0.0013	0.00053	mg/kg
A-3 (0-5)-20201005	460-219825-1	VINYL CHLORIDE	10/7/2020		Y	N	U		U	0.0013	0.00072	mg/kg
A-3 (0-5)-20201005	460-219825-1	TOLUENE	10/7/2020		Y	N	U		U	0.0013	0.00031	mg/kg
A-3 (0-5)-20201005	460-219825-1	DICHLORODIFLUOROMETHANE	10/7/2020		Y	N	U		U	0.0013	0.00044	mg/kg
A-3 (0-5)-20201005	460-219825-1	1,1,1-TRICHLOROETHANE	10/7/2020		Y	N	U		U	0.0013	0.00031	mg/kg
A-3 (5-10)-20201005	460-219825-2	METHYL ETHYL KETONE (2-BUTANONE)	10/8/2020		Y	N	U		U	0.0064	0.0035	mg/kg
A-3 (5-10)-20201005	460-219825-2	CYCLOHEXANE	10/8/2020		Y	N	U		U	0.0013	0.00028	mg/kg
A-3 (5-10)-20201005	460-219825-2	DIBROMOCHLOROMETHANE	10/8/2020		Y	N	U		U	0.0013	0.00025	mg/kg
A-3 (5-10)-20201005	460-219825-2	DICHLORODIFLUOROMETHANE	10/8/2020		Y	N	U		U	0.0013	0.00043	mg/kg
A-3 (5-10)-20201005	460-219825-2	ETHYLBENZENE	10/8/2020		Y	N	U		U	0.0013	0.00026	mg/kg
A-3 (5-10)-20201005	460-219825-2	Isopropylbenzene (Cumene)	10/8/2020		Y	N	U		U	0.0013	0.00016	mg/kg
A-3 (5-10)-20201005	460-219825-2	BROMOMETHANE	10/8/2020		Y	N	U		U	0.0013	0.00061	mg/kg
A-3 (5-10)-20201005	460-219825-2	METHYL ACETATE	10/8/2020		Y	N	U		U	0.0064	0.0055	mg/kg
A-3 (5-10)-20201005	460-219825-2	CHLOROFORM	10/8/2020		Y	N	U		U	0.0013	0.00041	mg/kg
A-3 (5-10)-20201005	460-219825-2	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	10/8/2020		Y	N	U		U	0.0064	0.0020	mg/kg
A-3 (5-10)-20201005	460-219825-2	METHYLENE CHLORIDE	10/8/2020		Y	N	J	U	U	0.0013	0.00060	mg/kg
A-3 (5-10)-20201005	460-219825-2	M,P-XYLENES	10/8/2020		Y	N	U		U	0.0013	0.00022	mg/kg
A-3 (5-10)-20201005	460-219825-2	CARBON DISULFIDE	10/8/2020		Y	N	U		U	0.0013	0.00034	mg/kg

SDG: 4602198251

Analytical Method SW8260C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
A-3 (5-10)-20201005	460-219825-2	CARBON TETRACHLORIDE	10/8/2020		Y	N	U		U	0.0013	0.00050	mg/kg
A-3 (5-10)-20201005	460-219825-2	CHLOROETHANE	10/8/2020		Y	N	U		U	0.0013	0.00067	mg/kg
A-3 (5-10)-20201005	460-219825-2	O-XYLENE (1,2-DIMETHYLBENZENE)	10/8/2020		Y	N	U		U	0.0013	0.00025	mg/kg
A-3 (5-10)-20201005	460-219825-2	CHLOROMETHANE	10/8/2020		Y	N	U	UJ	UJ	0.0013	0.00056	mg/kg
A-3 (5-10)-20201005	460-219825-2	Cis-1,2-Dichloroethylene	10/8/2020		Y	N	U		U	0.0013	0.00020	mg/kg
A-3 (5-10)-20201005	460-219825-2	CIS-1,3-DICHLOROPROPENE	10/8/2020		Y	N	U		U	0.0013	0.00035	mg/kg
A-3 (5-10)-20201005	460-219825-2	TOLUENE	10/8/2020		Y	N	U		U	0.0013	0.00030	mg/kg
A-3 (5-10)-20201005	460-219825-2	TRANS-1,2-DICHLOROETHENE	10/8/2020		Y	N	U		U	0.0013	0.00032	mg/kg
A-3 (5-10)-20201005	460-219825-2	TRANS-1,3-DICHLOROPROPENE	10/8/2020		Y	N	U		U	0.0013	0.00034	mg/kg
A-3 (5-10)-20201005	460-219825-2	TRICHLOROETHYLENE (TCE)	10/8/2020	0.00028	Y	Y	J		J	0.0013	0.00019	mg/kg
A-3 (5-10)-20201005	460-219825-2	TRICHLOROFLUOROMETHANE	10/8/2020		Y	N	U		U	0.0013	0.00052	mg/kg
A-3 (5-10)-20201005	460-219825-2	VINYL CHLORIDE	10/8/2020		Y	N	U		U	0.0013	0.00070	mg/kg
A-3 (5-10)-20201005	460-219825-2	CHLOROBENZENE	10/8/2020		Y	N	U		U	0.0013	0.00023	mg/kg
A-3 (5-10)-20201005	460-219825-2	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	10/8/2020		Y	N	U		U	0.0013	0.00023	mg/kg
A-3 (5-10)-20201005	460-219825-2	1,1,1-TRICHLOROETHANE	10/8/2020		Y	N	U		U	0.0013	0.00030	mg/kg
A-3 (5-10)-20201005	460-219825-2	1,1,2,2-TETRACHLOROETHANE	10/8/2020		Y	N	U		U	0.0013	0.00027	mg/kg
A-3 (5-10)-20201005	460-219825-2	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	10/8/2020		Y	N	U		U	0.0013	0.00039	mg/kg
A-3 (5-10)-20201005	460-219825-2	1,1,2-TRICHLOROETHANE	10/8/2020		Y	N	U		U	0.0013	0.00023	mg/kg
A-3 (5-10)-20201005	460-219825-2	1,1-DICHLOROETHANE	10/8/2020		Y	N	U		U	0.0013	0.00026	mg/kg
A-3 (5-10)-20201005	460-219825-2	1,1-DICHLOROETHENE	10/8/2020		Y	N	U		U	0.0013	0.00029	mg/kg
A-3 (5-10)-20201005	460-219825-2	1,2,3-TRICHLOROBENZENE	10/8/2020		Y	N	U		U	0.0013	0.00023	mg/kg
A-3 (5-10)-20201005	460-219825-2	METHYLCYCLOHEXANE	10/8/2020		Y	N	U		U	0.0013	0.00064	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
A-3 (5-10)-20201005	460-219825-2	1,2-DIBROMO-3-CHLOROPROPANE	10/8/2020		Y	N	UT		UT	0.0013	0.00059	mg/kg
A-3 (5-10)-20201005	460-219825-2	STYRENE	10/8/2020		Y	N	U		U	0.0013	0.00036	mg/kg
A-3 (5-10)-20201005	460-219825-2	1,2-DICHLOROBENZENE	10/8/2020		Y	N	U		U	0.0013	0.00019	mg/kg
A-3 (5-10)-20201005	460-219825-2	1,2-DICHLOROETHANE	10/8/2020		Y	N	U		U	0.0013	0.00038	mg/kg
A-3 (5-10)-20201005	460-219825-2	BROMOCHLOROMETHANE	10/8/2020		Y	N	U		U	0.0013	0.00036	mg/kg
A-3 (5-10)-20201005	460-219825-2	TERT-BUTYL METHYL ETHER	10/8/2020		Y	N	U		U	0.0013	0.00016	mg/kg
A-3 (5-10)-20201005	460-219825-2	TETRACHLOROETHYLENE(PCE)	10/8/2020	0.0054	Y	Y				0.0013	0.00018	mg/kg
A-3 (5-10)-20201005	460-219825-2	BROMOFORM	10/8/2020		Y	N	U		U	0.0013	0.00055	mg/kg
A-3 (5-10)-20201005	460-219825-2	1,2,4-TRICHLOROBENZENE	10/8/2020		Y	N	U		U	0.0013	0.00046	mg/kg
A-3 (5-10)-20201005	460-219825-2	BROMODICHLOROMETHANE	10/8/2020		Y	N	U		U	0.0013	0.00033	mg/kg
A-3 (5-10)-20201005	460-219825-2	1,2-DICHLOROPROPANE	10/8/2020		Y	N	U		U	0.0013	0.00054	mg/kg
A-3 (5-10)-20201005	460-219825-2	BENZENE	10/8/2020		Y	N	U		U	0.0013	0.00033	mg/kg
A-3 (5-10)-20201005	460-219825-2	ACETONE	10/8/2020		Y	N	U		U	0.0077	0.0073	mg/kg
A-3 (5-10)-20201005	460-219825-2	2-HEXANONE	10/8/2020		Y	N	U		U	0.0064	0.0022	mg/kg
A-3 (5-10)-20201005	460-219825-2	1,4-DIOXANE (P-DIOXANE)	10/8/2020		Y	N	U		U	0.026	0.012	mg/kg
A-3 (5-10)-20201005	460-219825-2	1,4-DICHLOROBENZENE	10/8/2020		Y	N	U		U	0.0013	0.00029	mg/kg
A-3 (5-10)-20201005	460-219825-2	1,3-DICHLOROBENZENE	10/8/2020		Y	N	U		U	0.0013	0.00020	mg/kg
A-2 (5-10)-20201005	460-219825-3	1,1-DICHLOROETHENE	10/8/2020		Y	N	U		U	0.00099	0.00022	mg/kg
A-2 (5-10)-20201005	460-219825-3	TETRACHLOROETHYLENE(PCE)	10/8/2020	0.0015	Y	Y				0.00099	0.00014	mg/kg
A-2 (5-10)-20201005	460-219825-3	1,1,1-TRICHLOROETHANE	10/8/2020		Y	N	U		U	0.00099	0.00023	mg/kg
A-2 (5-10)-20201005	460-219825-3	1,1,2,2-TETRACHLOROETHANE	10/8/2020		Y	N	U		U	0.00099	0.00021	mg/kg
A-2 (5-10)-20201005	460-219825-3	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	10/8/2020		Y	N	U		U	0.00099	0.00030	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
A-2 (5-10)-20201005	460-219825-3	1,1,2-TRICHLOROETHANE	10/8/2020		Y	N	U		U	0.00099	0.00018	mg/kg
A-2 (5-10)-20201005	460-219825-3	1,1-DICHLOROETHANE	10/8/2020		Y	N	U		U	0.00099	0.00020	mg/kg
A-2 (5-10)-20201005	460-219825-3	METHYL ACETATE	10/8/2020		Y	N	U		U	0.0049	0.0042	mg/kg
A-2 (5-10)-20201005	460-219825-3	METHYLENE CHLORIDE	10/8/2020		Y	N	U		U	0.00099	0.00046	mg/kg
A-2 (5-10)-20201005	460-219825-3	Cis-1,2-Dichloroethylene	10/8/2020		Y	N	U		U	0.00099	0.00015	mg/kg
A-2 (5-10)-20201005	460-219825-3	CIS-1,3-DICHLOROPROPENE	10/8/2020		Y	N	U		U	0.00099	0.00027	mg/kg
A-2 (5-10)-20201005	460-219825-3	1,2,3-TRICHLOROBENZENE	10/8/2020		Y	N	U		U	0.00099	0.00018	mg/kg
A-2 (5-10)-20201005	460-219825-3	DIBROMOCHLOROMETHANE	10/8/2020		Y	N	U		U	0.00099	0.00019	mg/kg
A-2 (5-10)-20201005	460-219825-3	Isopropylbenzene (Cumene)	10/8/2020		Y	N	U		U	0.00099	0.00012	mg/kg
A-2 (5-10)-20201005	460-219825-3	ETHYLBENZENE	10/8/2020		Y	N	U		U	0.00099	0.00020	mg/kg
A-2 (5-10)-20201005	460-219825-3	M,P-XYLENES	10/8/2020		Y	N	U		U	0.00099	0.00017	mg/kg
A-2 (5-10)-20201005	460-219825-3	METHYL ETHYL KETONE (2-BUTANONE)	10/8/2020		Y	N	U		U	0.0049	0.0027	mg/kg
A-2 (5-10)-20201005	460-219825-3	CHLOROMETHANE	10/8/2020		Y	N	U	UJ	UJ	0.00099	0.00043	mg/kg
A-2 (5-10)-20201005	460-219825-3	METHYLCYCLOHEXANE	10/8/2020		Y	N	U		U	0.00099	0.00049	mg/kg
A-2 (5-10)-20201005	460-219825-3	CYCLOHEXANE	10/8/2020		Y	N	U		U	0.00099	0.00022	mg/kg
A-2 (5-10)-20201005	460-219825-3	O-XYLENE (1,2-DIMETHYLBENZENE)	10/8/2020		Y	N	U		U	0.00099	0.00019	mg/kg
A-2 (5-10)-20201005	460-219825-3	STYRENE	10/8/2020		Y	N	U		U	0.00099	0.00027	mg/kg
A-2 (5-10)-20201005	460-219825-3	TERT-BUTYL METHYL ETHER	10/8/2020		Y	N	U		U	0.00099	0.00012	mg/kg
A-2 (5-10)-20201005	460-219825-3	VINYL CHLORIDE	10/8/2020		Y	N	U		U	0.00099	0.00054	mg/kg
A-2 (5-10)-20201005	460-219825-3	TRICHLOROFLUOROMETHANE	10/8/2020		Y	N	U		U	0.00099	0.00040	mg/kg
A-2 (5-10)-20201005	460-219825-3	TRICHLOROETHYLENE (TCE)	10/8/2020		Y	N	U		U	0.00099	0.00014	mg/kg
A-2 (5-10)-20201005	460-219825-3	TRANS-1,3-DICHLOROPROPENE	10/8/2020		Y	N	U		U	0.00099	0.00026	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
A-2 (5-10)-20201005	460-219825-3	TRANS-1,2-DICHLOROETHENE	10/8/2020		Y	N	U		U	0.00099	0.00024	mg/kg
A-2 (5-10)-20201005	460-219825-3	TOLUENE	10/8/2020		Y	N	U		U	0.00099	0.00023	mg/kg
A-2 (5-10)-20201005	460-219825-3	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	10/8/2020		Y	N	U		U	0.0049	0.0015	mg/kg
A-2 (5-10)-20201005	460-219825-3	1,4-DIOXANE (P-DIOXANE)	10/8/2020		Y	N	U		U	0.020	0.0091	mg/kg
A-2 (5-10)-20201005	460-219825-3	1,2,4-TRICHLOROBENZENE	10/8/2020		Y	N	U		U	0.00099	0.00035	mg/kg
A-2 (5-10)-20201005	460-219825-3	1,2-DIBROMO-3-CHLOROPROPANE	10/8/2020		Y	N	UT		UT	0.00099	0.00045	mg/kg
A-2 (5-10)-20201005	460-219825-3	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	10/8/2020		Y	N	U		U	0.00099	0.00018	mg/kg
A-2 (5-10)-20201005	460-219825-3	1,2-DICHLOROBENZENE	10/8/2020		Y	N	U		U	0.00099	0.00014	mg/kg
A-2 (5-10)-20201005	460-219825-3	1,2-DICHLOROETHANE	10/8/2020		Y	N	U		U	0.00099	0.00029	mg/kg
A-2 (5-10)-20201005	460-219825-3	1,2-DICHLOROPROPANE	10/8/2020		Y	N	U		U	0.00099	0.00042	mg/kg
A-2 (5-10)-20201005	460-219825-3	DICHLORODIFLUOROMETHANE	10/8/2020		Y	N	U		U	0.00099	0.00033	mg/kg
A-2 (5-10)-20201005	460-219825-3	1,4-DICHLOROBENZENE	10/8/2020		Y	N	U		U	0.00099	0.00022	mg/kg
A-2 (5-10)-20201005	460-219825-3	CHLOROFORM	10/8/2020		Y	N	U		U	0.00099	0.00031	mg/kg
A-2 (5-10)-20201005	460-219825-3	2-HEXANONE	10/8/2020		Y	N	U		U	0.0049	0.0017	mg/kg
A-2 (5-10)-20201005	460-219825-3	ACETONE	10/8/2020		Y	N	U		U	0.0059	0.0056	mg/kg
A-2 (5-10)-20201005	460-219825-3	CARBON TETRACHLORIDE	10/8/2020		Y	N	U		U	0.00099	0.00038	mg/kg
A-2 (5-10)-20201005	460-219825-3	1,3-DICHLOROBENZENE	10/8/2020		Y	N	U		U	0.00099	0.00016	mg/kg
A-2 (5-10)-20201005	460-219825-3	CHLOROBENZENE	10/8/2020		Y	N	U		U	0.00099	0.00017	mg/kg
A-2 (5-10)-20201005	460-219825-3	BENZENE	10/8/2020		Y	N	U		U	0.00099	0.00025	mg/kg
A-2 (5-10)-20201005	460-219825-3	CARBON DISULFIDE	10/8/2020		Y	N	U		U	0.00099	0.00026	mg/kg
A-2 (5-10)-20201005	460-219825-3	BROMOMETHANE	10/8/2020		Y	N	U		U	0.00099	0.00047	mg/kg
A-2 (5-10)-20201005	460-219825-3	BROMOFORM	10/8/2020		Y	N	U		U	0.00099	0.00042	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
A-2 (5-10)-20201005	460-219825-3	BROMODICHLOROMETHANE	10/8/2020		Y	N	U		U	0.00099	0.00025	mg/kg
A-2 (5-10)-20201005	460-219825-3	BROMOCHLOROMETHANE	10/8/2020		Y	N	U		U	0.00099	0.00028	mg/kg
A-2 (5-10)-20201005	460-219825-3	CHLOROETHANE	10/8/2020		Y	N	U		U	0.00099	0.00051	mg/kg
A-1 (5-10)-20201005	460-219825-4	1,2,3-TRICHLOROBENZENE	10/8/2020		Y	N	U		U	0.0010	0.00019	mg/kg
A-1 (5-10)-20201005	460-219825-4	METHYLENE CHLORIDE	10/8/2020		Y	N	U		U	0.0010	0.00048	mg/kg
A-1 (5-10)-20201005	460-219825-4	1,1,1-TRICHLOROETHANE	10/8/2020		Y	N	U		U	0.0010	0.00024	mg/kg
A-1 (5-10)-20201005	460-219825-4	1,1,2,2-TETRACHLOROETHANE	10/8/2020		Y	N	U		U	0.0010	0.00022	mg/kg
A-1 (5-10)-20201005	460-219825-4	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	10/8/2020		Y	N	U		U	0.0010	0.00031	mg/kg
A-1 (5-10)-20201005	460-219825-4	1,1,2-TRICHLOROETHANE	10/8/2020		Y	N	U		U	0.0010	0.00018	mg/kg
A-1 (5-10)-20201005	460-219825-4	1,1-DICHLOROETHANE	10/8/2020		Y	N	U		U	0.0010	0.00021	mg/kg
A-1 (5-10)-20201005	460-219825-4	1,1-DICHLOROETHENE	10/8/2020		Y	N	U		U	0.0010	0.00023	mg/kg
A-1 (5-10)-20201005	460-219825-4	CARBON TETRACHLORIDE	10/8/2020		Y	N	U		U	0.0010	0.00040	mg/kg
A-1 (5-10)-20201005	460-219825-4	M,P-XYLENES	10/8/2020		Y	N	U		U	0.0010	0.00018	mg/kg
A-1 (5-10)-20201005	460-219825-4	Isopropylbenzene (Cumene)	10/8/2020		Y	N	U		U	0.0010	0.00013	mg/kg
A-1 (5-10)-20201005	460-219825-4	ETHYLBENZENE	10/8/2020		Y	N	U		U	0.0010	0.00020	mg/kg
A-1 (5-10)-20201005	460-219825-4	DICHLORODIFLUOROMETHANE	10/8/2020		Y	N	U		U	0.0010	0.00035	mg/kg
A-1 (5-10)-20201005	460-219825-4	DIBROMOCHLOROMETHANE	10/8/2020		Y	N	U		U	0.0010	0.00020	mg/kg
A-1 (5-10)-20201005	460-219825-4	CYCLOHEXANE	10/8/2020		Y	N	U		U	0.0010	0.00023	mg/kg
A-1 (5-10)-20201005	460-219825-4	CIS-1,3-DICHLOROPROPENE	10/8/2020		Y	N	U		U	0.0010	0.00028	mg/kg
A-1 (5-10)-20201005	460-219825-4	Cis-1,2-Dichloroethylene	10/8/2020		Y	N	U		U	0.0010	0.00016	mg/kg
A-1 (5-10)-20201005	460-219825-4	CHLOROMETHANE	10/8/2020		Y	N	U	UJ	UJ	0.0010	0.00045	mg/kg
A-1 (5-10)-20201005	460-219825-4	CHLOROFORM	10/8/2020		Y	N	U		U	0.0010	0.00033	mg/kg

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A-1 (5-10)-20201005	460-219825-4	1,4-DIOXANE (P-DIOXANE)	10/8/2020		Y	N	U		U	0.021	0.0095	mg/kg
A-1 (5-10)-20201005	460-219825-4	CHLOROBENZENE	10/8/2020		Y	N	U		U	0.0010	0.00018	mg/kg
A-1 (5-10)-20201005	460-219825-4	METHYLCYCLOHEXANE	10/8/2020		Y	N	U		U	0.0010	0.00051	mg/kg
A-1 (5-10)-20201005	460-219825-4	CARBON DISULFIDE	10/8/2020		Y	N	U		U	0.0010	0.00027	mg/kg
A-1 (5-10)-20201005	460-219825-4	BROMOMETHANE	10/8/2020		Y	N	U		U	0.0010	0.00049	mg/kg
A-1 (5-10)-20201005	460-219825-4	BROMOFORM	10/8/2020		Y	N	U		U	0.0010	0.00044	mg/kg
A-1 (5-10)-20201005	460-219825-4	BROMODICHLOROMETHANE	10/8/2020		Y	N	U		U	0.0010	0.00026	mg/kg
A-1 (5-10)-20201005	460-219825-4	BROMOCHLOROMETHANE	10/8/2020		Y	N	U		U	0.0010	0.00029	mg/kg
A-1 (5-10)-20201005	460-219825-4	BENZENE	10/8/2020		Y	N	U		U	0.0010	0.00027	mg/kg
A-1 (5-10)-20201005	460-219825-4	1,2,4-TRICHLOROBENZENE	10/8/2020		Y	N	U		U	0.0010	0.00037	mg/kg
A-1 (5-10)-20201005	460-219825-4	ACETONE	10/8/2020		Y	N	U		U	0.0062	0.0059	mg/kg
A-1 (5-10)-20201005	460-219825-4	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	10/8/2020		Y	N	U		U	0.0052	0.0016	mg/kg
A-1 (5-10)-20201005	460-219825-4	2-HEXANONE	10/8/2020		Y	N	U		U	0.0052	0.0018	mg/kg
A-1 (5-10)-20201005	460-219825-4	1,4-DICHLOROBENZENE	10/8/2020		Y	N	U		U	0.0010	0.00023	mg/kg
A-1 (5-10)-20201005	460-219825-4	CHLOROETHANE	10/8/2020		Y	N	U		U	0.0010	0.00054	mg/kg
A-1 (5-10)-20201005	460-219825-4	TRANS-1,2-DICHLOROETHENE	10/8/2020		Y	N	U		U	0.0010	0.00025	mg/kg
A-1 (5-10)-20201005	460-219825-4	1,3-DICHLOROBENZENE	10/8/2020		Y	N	U		U	0.0010	0.00016	mg/kg
A-1 (5-10)-20201005	460-219825-4	1,2-DICHLOROPROPANE	10/8/2020		Y	N	U		U	0.0010	0.00044	mg/kg
A-1 (5-10)-20201005	460-219825-4	1,2-DICHLOROETHANE	10/8/2020		Y	N	U		U	0.0010	0.00030	mg/kg
A-1 (5-10)-20201005	460-219825-4	METHYL ACETATE	10/8/2020		Y	N	U		U	0.0052	0.0044	mg/kg
A-1 (5-10)-20201005	460-219825-4	1,2-DICHLOROBENZENE	10/8/2020		Y	N	U		U	0.0010	0.00015	mg/kg
A-1 (5-10)-20201005	460-219825-4	METHYL ETHYL KETONE (2-BUTANONE)	10/8/2020		Y	N	U		U	0.0052	0.0028	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
A-1 (5-10)-20201005	460-219825-4	TRICHLOROFLUOROMETHANE	10/8/2020		Y	N	U		U	0.0010	0.00042	mg/kg
A-1 (5-10)-20201005	460-219825-4	TRANS-1,3-DICHLOROPROPENE	10/8/2020		Y	N	U		U	0.0010	0.00027	mg/kg
A-1 (5-10)-20201005	460-219825-4	VINYL CHLORIDE	10/8/2020		Y	N	U		U	0.0010	0.00056	mg/kg
A-1 (5-10)-20201005	460-219825-4	TOLUENE	10/8/2020		Y	N	U		U	0.0010	0.00024	mg/kg
A-1 (5-10)-20201005	460-219825-4	TETRACHLOROETHYLENE(PCE)	10/8/2020	0.0010	Y	Y				0.0010	0.00015	mg/kg
A-1 (5-10)-20201005	460-219825-4	TERT-BUTYL METHYL ETHER	10/8/2020		Y	N	U		U	0.0010	0.00013	mg/kg
A-1 (5-10)-20201005	460-219825-4	STYRENE	10/8/2020		Y	N	U		U	0.0010	0.00029	mg/kg
A-1 (5-10)-20201005	460-219825-4	O-XYLENE (1,2-DIMETHYLBENZENE)	10/8/2020		Y	N	U		U	0.0010	0.00020	mg/kg
A-1 (5-10)-20201005	460-219825-4	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	10/8/2020		Y	N	U		U	0.0010	0.00019	mg/kg
A-1 (5-10)-20201005	460-219825-4	1,2-DIBROMO-3-CHLOROPROPANE	10/8/2020		Y	N	UT		UT	0.0010	0.00047	mg/kg
A-1 (5-10)-20201005	460-219825-4	TRICHLOROETHYLENE (TCE)	10/8/2020		Y	N	U		U	0.0010	0.00015	mg/kg
Trip Blank 100520-2020	460-219825-5	TRICHLOROFLUOROMETHANE	10/7/2020		Y	N	U		U	1.0	0.32	ug/l
Trip Blank 100520-2020	460-219825-5	TRICHLOROETHYLENE (TCE)	10/7/2020		Y	N	U		U	1.0	0.31	ug/l
Trip Blank 100520-2020	460-219825-5	TRANS-1,3-DICHLOROPROPENE	10/7/2020		Y	N	U		U	1.0	0.22	ug/l
Trip Blank 100520-2020	460-219825-5	TRANS-1,2-DICHLOROETHENE	10/7/2020		Y	N	U		U	1.0	0.24	ug/l
Trip Blank 100520-2020	460-219825-5	TOLUENE	10/7/2020		Y	N	U		U	1.0	0.38	ug/l
Trip Blank 100520-2020	460-219825-5	TERT-BUTYL METHYL ETHER	10/7/2020		Y	N	U		U	1.0	0.22	ug/l
Trip Blank 100520-2020	460-219825-5	VINYL CHLORIDE	10/7/2020		Y	N	U		U	1.0	0.17	ug/l
Trip Blank 100520-2020	460-219825-5	1,1,2-TRICHLOROETHANE	10/7/2020		Y	N	U		U	1.0	0.20	ug/l
Trip Blank 100520-2020	460-219825-5	TETRACHLOROETHYLENE(PCE)	10/7/2020		Y	N	U		U	1.0	0.25	ug/l
Trip Blank 100520-2020	460-219825-5	Isopropylbenzene (Cumene)	10/7/2020		Y	N	U		U	1.0	0.34	ug/l
Trip Blank 100520-2020	460-219825-5	CHLOROBENZENE	10/7/2020		Y	N	U		U	1.0	0.38	ug/l

SDG: 4602198251

Analytical Method SW8260C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
Trip Blank 100520-2020	460-219825-5	CHLOROETHANE	10/7/2020		Y	N	U		U	1.0	0.32	ug/l
Trip Blank 100520-2020	460-219825-5	CHLOROFORM	10/7/2020		Y	N	U		U	1.0	0.33	ug/l
Trip Blank 100520-2020	460-219825-5	CHLOROMETHANE	10/7/2020		Y	N	U		U	1.0	0.40	ug/l
Trip Blank 100520-2020	460-219825-5	Cis-1,2-Dichloroethylene	10/7/2020		Y	N	U		U	1.0	0.22	ug/l
Trip Blank 100520-2020	460-219825-5	CIS-1,3-DICHLOROPROPENE	10/7/2020		Y	N	U		U	1.0	0.22	ug/l
Trip Blank 100520-2020	460-219825-5	CYCLOHEXANE	10/7/2020		Y	N	U		U	1.0	0.32	ug/l
Trip Blank 100520-2020	460-219825-5	DIBROMOCHLOROMETHANE	10/7/2020		Y	N	U		U	1.0	0.28	ug/l
Trip Blank 100520-2020	460-219825-5	1,1,2,2-TETRACHLOROETHANE	10/7/2020		Y	N	U		U	1.0	0.37	ug/l
Trip Blank 100520-2020	460-219825-5	ETHYLBENZENE	10/7/2020		Y	N	U		U	1.0	0.30	ug/l
Trip Blank 100520-2020	460-219825-5	BROMOMETHANE	10/7/2020		Y	N	U		U	1.0	0.55	ug/l
Trip Blank 100520-2020	460-219825-5	M,P-XYLENES	10/7/2020		Y	N	U		U	1.0	0.30	ug/l
Trip Blank 100520-2020	460-219825-5	METHYL ACETATE	10/7/2020		Y	N	U		U	5.0	0.79	ug/l
Trip Blank 100520-2020	460-219825-5	METHYL ETHYL KETONE (2-BUTANONE)	10/7/2020		Y	N	U		U	5.0	1.9	ug/l
Trip Blank 100520-2020	460-219825-5	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	10/7/2020		Y	N	U		U	5.0	1.3	ug/l
Trip Blank 100520-2020	460-219825-5	METHYLCYCLOHEXANE	10/7/2020		Y	N	U		U	1.0	0.71	ug/l
Trip Blank 100520-2020	460-219825-5	METHYLENE CHLORIDE	10/7/2020	0.47	Y	Y	J		J	1.0	0.32	ug/l
Trip Blank 100520-2020	460-219825-5	O-XYLENE (1,2-DIMETHYLBENZENE)	10/7/2020		Y	N	U		U	1.0	0.36	ug/l
Trip Blank 100520-2020	460-219825-5	STYRENE	10/7/2020		Y	N	U		U	1.0	0.42	ug/l
Trip Blank 100520-2020	460-219825-5	DICHLORODIFLUOROMETHANE	10/7/2020		Y	N	UT		UT	1.0	0.31	ug/l
Trip Blank 100520-2020	460-219825-5	1,3-DICHLOROBENZENE	10/7/2020		Y	N	U		U	1.0	0.34	ug/l
Trip Blank 100520-2020	460-219825-5	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	10/7/2020		Y	N	U		U	1.0	0.31	ug/l
Trip Blank 100520-2020	460-219825-5	1,1-DICHLOROETHANE	10/7/2020		Y	N	U		U	1.0	0.26	ug/l

SDG: 4602198251

Analytical Method SW8260C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
Trip Blank 100520-2020	460-219825-5	1,1-DICHLOROETHENE	10/7/2020		Y	N	U		U	1.0	0.26	ug/l
Trip Blank 100520-2020	460-219825-5	1,2,3-TRICHLOROBENZENE	10/7/2020		Y	N	U		U	1.0	0.36	ug/l
Trip Blank 100520-2020	460-219825-5	1,2,4-TRICHLOROBENZENE	10/7/2020		Y	N	U		U	1.0	0.37	ug/l
Trip Blank 100520-2020	460-219825-5	1,2-DIBROMO-3-CHLOROPROPANE	10/7/2020		Y	N	U		U	1.0	0.38	ug/l
Trip Blank 100520-2020	460-219825-5	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	10/7/2020		Y	N	U		U	1.0	0.50	ug/l
Trip Blank 100520-2020	460-219825-5	1,2-DICHLOROBENZENE	10/7/2020		Y	N	U		U	1.0	0.21	ug/l
Trip Blank 100520-2020	460-219825-5	CARBON TETRACHLORIDE	10/7/2020		Y	N	U		U	1.0	0.21	ug/l
Trip Blank 100520-2020	460-219825-5	1,2-DICHLOROPROPANE	10/7/2020		Y	N	U		U	1.0	0.35	ug/l
Trip Blank 100520-2020	460-219825-5	CARBON DISULFIDE	10/7/2020		Y	N	U		U	1.0	0.82	ug/l
Trip Blank 100520-2020	460-219825-5	1,4-DICHLOROBENZENE	10/7/2020		Y	N	U		U	1.0	0.33	ug/l
Trip Blank 100520-2020	460-219825-5	1,4-DIOXANE (P-DIOXANE)	10/7/2020		Y	N	U		U	50	28	ug/l
Trip Blank 100520-2020	460-219825-5	2-HEXANONE	10/7/2020		Y	N	U		U	5.0	1.1	ug/l
Trip Blank 100520-2020	460-219825-5	ACETONE	10/7/2020		Y	N	U		U	5.0	4.4	ug/l
Trip Blank 100520-2020	460-219825-5	BENZENE	10/7/2020		Y	N	U		U	1.0	0.20	ug/l
Trip Blank 100520-2020	460-219825-5	BROMOCHLOROMETHANE	10/7/2020		Y	N	U		U	1.0	0.41	ug/l
Trip Blank 100520-2020	460-219825-5	BROMODICHLOROMETHANE	10/7/2020		Y	N	U		U	1.0	0.34	ug/l
Trip Blank 100520-2020	460-219825-5	BROMOFORM	10/7/2020		Y	N	U		U	1.0	0.54	ug/l
Trip Blank 100520-2020	460-219825-5	1,1,1-TRICHLOROETHANE	10/7/2020		Y	N	U		U	1.0	0.24	ug/l
Trip Blank 100520-2020	460-219825-5	1,2-DICHLOROETHANE	10/7/2020		Y	N	U		U	1.0	0.43	ug/l

Site: Long Island City, 30th Street
Laboratory: Eurofins
Report No.: 460-220223-1
Reviewer: Josephine Go and Christina Rink/Laboratory Data Consultants for GEI Consultants, Inc. – Huntington Station, NY
Date: December 1, 2020

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
A1 (10-15)	460-220223-1	VOC
A3 (10-15)	460-220223-2	VOC
A4 (0-5)	460-220223-3	VOC

Associated QC Samples(s):
Field/Trip Blanks: None Associated
Field Duplicate pair: None Associated

The above-listed soil samples were collected on October 9, 2020 and were analyzed for volatile organic compounds (VOCs) by SW-846 method 8260C. The data validation was performed in accordance with the USEPA Region 2 *Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-Method 8260B and 8260C,* SOP HW-24, Revision 4 (October 2014) and the USEPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,* EPA 540-R-2017-002 (January 2017), modified as necessary to accommodate the non-CLP methodologies used.

The organic data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) Tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Control Sample (LCS) Results
- Internal Standards
- Field Duplicate Results
- Moisture Content
- Quantitation Limits and Data Assessment
- Sample Quantitation and Compound Identification

Overall Evaluation of Data and Potential Usability Issues

All results are usable as reported or usable with minor qualification due to laboratory quality control outliers.

The validation findings were based on the following information.

Data Completeness

The data package was complete as defined under the requirements for the NYSDEC ASP category B laboratory deliverables.

Holding Times and Sample Preservation

All criteria were met.

GC/MS Tunes

All criteria were met.

Initial and Continuing Calibrations

Initial Calibration:

All criteria were met.

Continuing calibration:

Compounds that did not meet criteria are summarized in the following table.

Date	Standard ID	Compound	CC %D	Associated Samples		Validation Action
10/11/20	B64466	Chloromethane	22.7	A1 (10-15)	XX	UJ nondetects
		Bromomethane	20.1	A3 (10-15)	XX	UJ nondetects
		Trichlorofluoromethane	21.7	A4 (0-5)	XX	UJ nondetects
		Methyl acetate	39.6		XX	UJ nondetects
		cis-1,3-Dichloropropene	25.2		XX	UJ nondetects
		trans-1,3-Dichloropropene	28.6		XX	UJ nondetects
		1,1,2,2-Tetrachloroethane	21.1		XX	UJ nondetects
		1,2-Dibromo-3-chloropropane	21.0		XX	UJ nondetects

X = Initial calibration (IC) relative standard deviation (%RSD) > 20; estimate (J/UJ) positive and nondetect results.
XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ) positive and nondetect results.
SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.
+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The chloromethane, bromomethane, trichlorofluoromethane, methyl acetate, cis-1,3-dichloropropene, trans-1,3-dichloropropene, 1,1,2,2-tetrachloroethane, and 1,2-dibromo-3-chloropropane results were estimated due to continuing calibration exceedance. The bias cannot be determined. The results can be used for project objectives as nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Blanks

Contamination was not detected in the method blanks.

A field blank was not associated with this sample set. Validation action was not required on this basis.

Surrogate Recoveries

The following table lists the surrogate percent recoveries (%R) outside of control limits in the VOC analysis and the resulting validation actions.

Sample ID	Surrogate	%R (Limits)	Validation Action
A4 (0-5)	Bromofluorobenzene	140 (79-125)	None

Validation action was not required for VOC due to high surrogate percent recovery as positive results only are affected and these compounds were not detected in the associated sample.

MS/MSD Results

MS/MSD analyses were not associated with this sample set. Validation action was not required on this basis.

LCS Results

The following table lists the LCS/LCSD percent recoveries (%R) outside of control limits in the VOC analysis and the resulting validation actions.

LCS ID	Compound	LCS %R (Limits)	LCS/D %R (Limits)	Affected Sample	Validation Action
LCS/LCSD 460-730761/4,13	2-Butanone	-	121 (75-120)	A1 (10-15) A3 (10-15) A4 (0-5)	None

- Within control limits

Validation action was not required for 2-butanone due to high LCS/LCSD percent recovery as positive results only are affected and this compound was not detected in the associated samples.

Internal Standards

All criteria were met.

Field Duplicate Results

A field duplicate pair was not associated with this sample set. Validation action was not required on this basis.

Moisture Content

All criteria were met.

Quantitation Limits and Data Assessment

No results were reported below the reporting limit (RL) and above the method detection limit (MDL) in the VOC analysis.

Dilutions were not required for VOC analysis.

Sample Quantitation and Compound Identification

Calculations were spot-checked; no discrepancies were noted.

DATA VALIDATION QUALIFIERS

U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.

J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.

JN - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.

R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

LDC #: 49691E1a
SDG #: 460-220223-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Category B

Date: 11/30/20
Page: 1 of 1
Reviewer: JVG
2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / A	ICAL ≤ 20% r ICV ≤ 30%
IV.	Continuing calibration	SW	CCV ≤ 20%
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	SW	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	SW	LCS/D
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	no result < RL
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1 +	A1 (10-15)	460-220223-1	Soil	10/09/20
2 +	A3 (10-15)	460-220223-2	Soil	10/09/20
3 -	A4 (0-5)	460-220223-3	Soil	10/09/20
4				
5				
6				
7				
8				
9				

Notes:

	LB3 460-730678/1-A						
	MB 460-730761/8						

LDC #: 49691 E1a

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG

Method: Volatiles (EPA SW 846 Method 8260C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20% and relative response factors (RRF) within method criteria?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 30%?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 20% and relative response factors (RRF) within method criteria?	✓	✓		
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks were identified in this SDG?		✓		
Were target compounds detected in the field blanks?			✓	
VII. Surrogate spikes				
Were all surrogate percent recovery (%R) within QC limits?	-	✓		
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?		✓		
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?		✓		
X. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds detected in the field duplicates?			✓	
XI. Internal standards				
Were internal standard area counts within -50% to +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XII. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	AA. Tetrachloroethene	AAA. 1,3,5-Trimethylbenzene	AAAA. Ethyl tert-butyl ether	A1. 1,3-Butadiene	A2.
B. Bromomethane	BB. 1,1,2,2-Tetrachloroethane	BBB. 4-Chlorotoluene	BBBB. tert-Amyl methyl ether	B1. Hexane	B2.
C. Vinyl choride	CC. Toluene	CCC. tert-Butylbenzene	CCCC. 1-Chlorohexane	C1. Heptane	C2.
D. Chloroethane	DD. Chlorobenzene	DDD. 1,2,4-Trimethylbenzene	DDDD. Isopropyl alcohol	D1. Propylene	D2.
E. Methylene chloride	EE. Ethylbenzene	EEE. sec-Butylbenzene	EEEE. Acetonitrile	E1. Freon 11	E2.
F. Acetone	FF. Styrene	FFF. 1,3-Dichlorobenzene	FFFF. Acrolein	F1. Freon 12	F2.
G. Carbon disulfide	GG. Xylenes, total	GGG. p-Isopropyltoluene	GGGG. Acrylonitrile	G1. Freon 113	G2.
H. 1,1-Dichloroethene	HH. Vinyl acetate	HHH. 1,4-Dichlorobenzene	HHHH. 1,4-Dioxane	H1. Freon 114	H2.
I. 1,1-Dichloroethane	II. 2-Chloroethylvinyl ether	III. n-Butylbenzene	IIII. Isobutyl alcohol	I1. 2-Nitropropane	I2.
J. 1,2-Dichloroethene, total	JJ. Dichlorodifluoromethane	JJJ. 1,2-Dichlorobenzene	JJJJ. Methacrylonitrile	J1. Dimethyl disulfide	J2.
K. Chloroform	KK. Trichlorofluoromethane	KKK. 1,2,4-Trichlorobenzene	KKKK. Propionitrile	K1. 2,3-Dimethyl pentane	K2.
L. 1,2-Dichloroethane	LL. Methyl-tert-butyl ether	LLL. Hexachlorobutadiene	LLLL. Ethyl ether	L1. 2,4-Dimethyl pentane	L2.
M. 2-Butanone	MM. 1,2-Dibromo-3-chloropropane	MMM. Naphthalene	MMMM. Benzyl chloride	M1. 3,3-Dimethyl pentane	M2.
N. 1,1,1-Trichloroethane	NN. Methyl ethyl ketone	NNN. 1,2,3-Trichlorobenzene	NNNN. Iodomethane	N1. 2-Methylpentane	N2.
O. Carbon tetrachloride	OO. 2,2-Dichloropropane	OOO. 1,3,5-Trichlorobenzene	OOOO.1,1-Difluoroethane	O1. 3-Methylpentane	O2.
P. Bromodichloromethane	PP. Bromochloromethane	PPP. trans-1,2-Dichloroethene	PPPP. Tetrahydrofuran	P1. 3-Ethylpentane	P2.
Q. 1,2-Dichloropropane	QQ. 1,1-Dichloropropene	QQQ. cis-1,2-Dichloroethene	QQQQ. Methyl acetate	Q1. 2,2-Dimethylpentane	Q2.
R. cis-1,3-Dichloropropene	RR. Dibromomethane	RRR. m,p-Xylenes	RRRR. Ethyl acetate	R1. 2,2,3- Trimethylbutane	R2.
S. Trichloroethene	SS. 1,3-Dichloropropane	SSS. o-Xylene	SSSS. Cyclohexane	S1. 2,2,4-Trimethylpentane	S2.
T. Dibromochloromethane	TT. 1,2-Dibromoethane	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	TTTT. Methylcyclohexane	T1. 2-Methylhexane	T2.
U. 1,1,2-Trichloroethane	UU. 1,1,1,2-Tetrachloroethane	UUU. 1,2-Dichlorotetrafluoroethane	UUUU. Allyl chloride	U1. Nonanal	U2.
V. Benzene	VV. Isopropylbenzene	VVV. 4-Ethyltoluene	VVVV. Methyl methacrylate	V1. 2-Methylnaphthalene	V2.
W. trans-1,3-Dichloropropene	WW. Bromobenzene	WWW. Ethanol	WWWW. Ethyl methacrylate	W1. Methanol	W2.
X. Bromoform	XX. 1,2,3-Trichloropropane	XXX. Di-isopropyl ether	XXXX. cis-1,4-Dichloro-2-butene	X1. 1,2,3-Trimethylbenzene	X2.
Y. 4-Methyl-2-pentanone	YY. n-Propylbenzene	YYY. tert-Butanol	YYYY. trans-1,4-Dichloro-2-butene	Y1. 2-Propanol	Y2.
Z. 2-Hexanone	ZZ. 2-Chlorotoluene	ZZZ. tert-Butyl alcohol	ZZZZ. Pentachloroethane	Z1.	Z2.

LDC #: 49691 E1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260~~C~~B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Y N N/A Were percent differences (%D) ≤20 % and relative response factors (RRF) within the method criteria?

#	Date	Standard ID	Compound	Finding %D (Limit: <20.0%)	Finding RRF (Limit)	Associated Samples	Qualifications
	10/11/20	BG4466	A	22.7		All (ND)	J (UJ/A)
			B	20.1			
			Kk	21.7			
			QQQQ	39.6			
			R	25.2			
			W	28.6			
			BB	21.1			
			MM	21.0			

Note: * = Ave RRF failed method criteria but within validation criteria

LDC #: 49691E1a

VALIDATION FINDINGS WORKSHEET
Surrogate Spikes

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y (N) N/A Were all surrogate %R within QC limits?

Y (N) N/A If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?

#	Date	Sample ID	Surrogate	%Recovery (Limits)	Qualifications
		3 (ND)	BFB	140 (79-125)	J dets / P
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
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				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

(TOL) = Toluene-d8
(BFB) = Bromofluorobenzene
(DCE) = 1,2-Dichloroethane-d4
(DFM) = Dibromofluoromethane

LDC #: 49691E1c

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a LCS required?

Y N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	LCS/D 460-730761/4,13	M	( )	121 (75-120)	( )	All (ND)	J det / P
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		

LDC #: 49691E1a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

average RRF = sum of the RRFs/number of standards

%RSD = 100 * (S/X)

A_x = Area of Compound

C_x = Concentration of compound

S= Standard deviation of the RRFs

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 50 std)	Recalculated RRF (RRF 50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL CVOAMS2	10/3/2020	2-Butanone (BUT)	0.3429	0.3429	0.3351	0.3351	13.1	13.1
			cis-1,2-DCE (FBZ)	0.4627	0.4627	0.4124	0.4124	7.0	7.0
			1,4-Dioxane (DXE)	see r2 calc					
			Tetrachloroethene (CBZ)	0.5561	0.5561	0.4835	0.4835	9.4	9.4
			1,4-DCB (DCB)	2.2260	2.2260	1.9700	1.9700	6.9	6.9

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Method: GC/MS 1,4-Dioxane (EPA SW 846 Method 8260C)

Calibration Date	Instrument	Compound	Standard	(Y) Response	(X) Conc.	(X^2) Conc.
10/3/2020	VOAMS2	1,4-Dioxane	20	0.0207	0.02	0.00040
			100	0.1908	0.10	0.0100
		IS = 1,4-Dioxane-d8	400	0.6535	0.40	0.1600
			1000	1.6444	1.00	1.0000
			4000	5.8547	4.00	16.0000
			10000	11.9232	10.00	100.0000

Regression Output	**Calculated**		***Reported WQR***	
Constant	*c*	*0.01340*	*c*	*-14.39000*
R Squared	*r2*	*1.000*		*0.9920*
	m1	*m2*	*m1*	*m2*
X Coefficient(s)	*1.64443*	*-0.04536*	*1.7988*	*-0.000064*
Correlation Coefficient		*0.999993*		
Coefficient of Determination (r^2)		*0.999985*		

LDC # 49691E1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CCV)	Recalculated RRF (CCV)	Reported % D	Recalculated %D
1	B64466	10/11/2020	2-Butanone (BUT)	0.3351	0.3123	0.3123	6.8	6.8
			cis-1,2-DCE (FBZ)	0.4124	0.3283	0.3283	20.4	20.4
			1,4-Dioxane (DXE)	400.0000	438.4258	438.4258	9.6	9.6
			Tetrachloroethene (CBZ)	0.4835	0.4727	0.4727	2.2	2.2
			1,4-DCB (DCB)	1.9700	1.5600	1.5600	20.8	20.8

LDC #: 49691E1a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	50.0	54.2	108	108	0
1,2-Dichloroethane-d4	"	43.4	87	87	"
Toluene-d8	"	43.3	87	87	"
Bromofluorobenzene	"	51.4	103	103	"

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 49691E1a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration; SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: LCS/D 460-730761/4, 13

Compound	Spike Added (mg/kg)		Spiked Sample Concentration (mg/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
1,1-Dichloroethene	0.0200	0.0200	0.0208	0.0208	104	104	104	104	0	0
Trichloroethene			0.0216	0.0221	108	108	110	110	2	2
Benzene			0.0174	0.0175	87	87	87	87	0	0
Toluene			0.0188	0.0188	94	94	94	94	0	0
Chlorobenzene			0.0202	0.0202	101	101	101	101	0	0

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 49691E1a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The concentration of the sample was calculated for the compound identified below using the following calculation:

$$\text{Concentration} = \frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 1, PCE

Conc. = $\frac{(35621)(50)(5mL)}{(364644)(0.4835)(4.72g)(0.896)(1000)}$

= 0.011g

≈ 0.012 mg/kg

#	Sample ID	Compound	Reported Concentration ~~(ug/L)~~ (mg/kg)	Calculated Concentration ~~(ug/L)~~ (mg/kg)	Qualification
	1	PCE	0.012	0.012	—

30th Street, Long Island City, Site No. C241214 - LDC# 49691E

SDG: 4602202231

Analytical Method SW8260C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
A1(10-15)-20201009	460-220223-1	M,P-XYLENES	10/11/2020		Y	N	U		U	0.0012	0.00021	mg/kg
A1(10-15)-20201009	460-220223-1	VINYL CHLORIDE	10/11/2020		Y	N	U		U	0.0012	0.00065	mg/kg
A1(10-15)-20201009	460-220223-1	CHLOROBENZENE	10/11/2020		Y	N	U		U	0.0012	0.00021	mg/kg
A1(10-15)-20201009	460-220223-1	CHLOROETHANE	10/11/2020		Y	N	U		U	0.0012	0.00062	mg/kg
A1(10-15)-20201009	460-220223-1	CHLOROFORM	10/11/2020		Y	N	U		U	0.0012	0.00038	mg/kg
A1(10-15)-20201009	460-220223-1	CHLOROMETHANE	10/11/2020		Y	N	U	UJ	UJ	0.0012	0.00051	mg/kg
A1(10-15)-20201009	460-220223-1	Cis-1,2-Dichloroethylene	10/11/2020		Y	N	U		U	0.0012	0.00018	mg/kg
A1(10-15)-20201009	460-220223-1	CIS-1,3-DICHLOROPROPENE	10/11/2020		Y	N	U	UJ	UJ	0.0012	0.00032	mg/kg
A1(10-15)-20201009	460-220223-1	CYCLOHEXANE	10/11/2020		Y	N	U		U	0.0012	0.00026	mg/kg
A1(10-15)-20201009	460-220223-1	DIBROMOCHLOROMETHANE	10/11/2020		Y	N	U		U	0.0012	0.00023	mg/kg
A1(10-15)-20201009	460-220223-1	DICHLORODIFLUOROMETHANE	10/11/2020		Y	N	U		U	0.0012	0.00040	mg/kg
A1(10-15)-20201009	460-220223-1	CARBON DISULFIDE	10/11/2020		Y	N	U		U	0.0012	0.00031	mg/kg
A1(10-15)-20201009	460-220223-1	Isopropylbenzene (Cumene)	10/11/2020		Y	N	U		U	0.0012	0.00015	mg/kg
A1(10-15)-20201009	460-220223-1	BROMOMETHANE	10/11/2020		Y	N	U	UJ	UJ	0.0012	0.00056	mg/kg
A1(10-15)-20201009	460-220223-1	METHYL ACETATE	10/11/2020		Y	N	U	UJ	UJ	0.0059	0.0051	mg/kg
A1(10-15)-20201009	460-220223-1	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	10/11/2020		Y	N	U		U	0.0059	0.0018	mg/kg
A1(10-15)-20201009	460-220223-1	METHYLENE CHLORIDE	10/11/2020		Y	N	U		U	0.0012	0.00055	mg/kg
A1(10-15)-20201009	460-220223-1	STYRENE	10/11/2020		Y	N	U		U	0.0012	0.00033	mg/kg
A1(10-15)-20201009	460-220223-1	TERT-BUTYL METHYL ETHER	10/11/2020		Y	N	U		U	0.0012	0.00015	mg/kg
A1(10-15)-20201009	460-220223-1	TOLUENE	10/11/2020		Y	N	U		U	0.0012	0.00028	mg/kg
A1(10-15)-20201009	460-220223-1	TRANS-1,2-DICHLOROETHENE	10/11/2020		Y	N	U		U	0.0012	0.00029	mg/kg

SDG: 4602202231

Analytical Method SW8260C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
A1(10-15)-20201009	460-220223-1	TRANS-1,3-DICHLOROPROPENE	10/11/2020		Y	N	U	UJ	UJ	0.0012	0.00031	mg/kg
A1(10-15)-20201009	460-220223-1	TRICHLOROETHYLENE (TCE)	10/11/2020		Y	N	U		U	0.0012	0.00017	mg/kg
A1(10-15)-20201009	460-220223-1	TRICHLOROFLUOROMETHANE	10/11/2020		Y	N	U	UJ	UJ	0.0012	0.00048	mg/kg
A1(10-15)-20201009	460-220223-1	ETHYLBENZENE	10/11/2020		Y	N	U		U	0.0012	0.00024	mg/kg
A1(10-15)-20201009	460-220223-1	1,2-DICHLOROETHANE	10/11/2020		Y	N	U		U	0.0012	0.00035	mg/kg
A1(10-15)-20201009	460-220223-1	TETRACHLOROETHYLENE(PCE)	10/11/2020	0.012	Y	Y				0.0012	0.00017	mg/kg
A1(10-15)-20201009	460-220223-1	1,1,1-TRICHLOROETHANE	10/11/2020		Y	N	U		U	0.0012	0.00028	mg/kg
A1(10-15)-20201009	460-220223-1	1,1,2,2-TETRACHLOROETHANE	10/11/2020		Y	N	U	UJ	UJ	0.0012	0.00025	mg/kg
A1(10-15)-20201009	460-220223-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	10/11/2020		Y	N	U		U	0.0012	0.00036	mg/kg
A1(10-15)-20201009	460-220223-1	1,1,2-TRICHLOROETHANE	10/11/2020		Y	N	U		U	0.0012	0.00021	mg/kg
A1(10-15)-20201009	460-220223-1	1,1-DICHLOROETHANE	10/11/2020		Y	N	U		U	0.0012	0.00024	mg/kg
A1(10-15)-20201009	460-220223-1	1,1-DICHLOROETHENE	10/11/2020		Y	N	U		U	0.0012	0.00027	mg/kg
A1(10-15)-20201009	460-220223-1	1,2,3-TRICHLOROBENZENE	10/11/2020		Y	N	U		U	0.0012	0.00021	mg/kg
A1(10-15)-20201009	460-220223-1	1,2,4-TRICHLOROBENZENE	10/11/2020		Y	N	U		U	0.0012	0.00042	mg/kg
A1(10-15)-20201009	460-220223-1	1,2-DIBROMO-3-CHLOROPROPANE	10/11/2020		Y	N	U	UJ	UJ	0.0012	0.00054	mg/kg
A1(10-15)-20201009	460-220223-1	CARBON TETRACHLORIDE	10/11/2020		Y	N	U		U	0.0012	0.00046	mg/kg
A1(10-15)-20201009	460-220223-1	1,2-DICHLOROBENZENE	10/11/2020		Y	N	U		U	0.0012	0.00017	mg/kg
A1(10-15)-20201009	460-220223-1	O-XYLENE (1,2-DIMETHYLBENZENE)	10/11/2020		Y	N	U		U	0.0012	0.00023	mg/kg
A1(10-15)-20201009	460-220223-1	1,2-DICHLOROPROPANE	10/11/2020		Y	N	U		U	0.0012	0.00050	mg/kg
A1(10-15)-20201009	460-220223-1	1,3-DICHLOROBENZENE	10/11/2020		Y	N	U		U	0.0012	0.00019	mg/kg
A1(10-15)-20201009	460-220223-1	1,4-DICHLOROBENZENE	10/11/2020		Y	N	U		U	0.0012	0.00027	mg/kg
A1(10-15)-20201009	460-220223-1	1,4-DIOXANE (P-DIOXANE)	10/11/2020		Y	N	U		U	0.024	0.011	mg/kg

SDG: 4602202231

Analytical Method SW8260C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
A1(10-15)-20201009	460-220223-1	2-HEXANONE	10/11/2020		Y	N	U		U	0.0059	0.0020	mg/kg
A1(10-15)-20201009	460-220223-1	ACETONE	10/11/2020		Y	N	U		U	0.0071	0.0068	mg/kg
A1(10-15)-20201009	460-220223-1	BENZENE	10/11/2020		Y	N	U		U	0.0012	0.00030	mg/kg
A1(10-15)-20201009	460-220223-1	BROMOCHLOROMETHANE	10/11/2020		Y	N	U		U	0.0012	0.00033	mg/kg
A1(10-15)-20201009	460-220223-1	BROMODICHLOROMETHANE	10/11/2020		Y	N	U		U	0.0012	0.00030	mg/kg
A1(10-15)-20201009	460-220223-1	BROMOFORM	10/11/2020		Y	N	U		U	0.0012	0.00050	mg/kg
A1(10-15)-20201009	460-220223-1	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	10/11/2020		Y	N	U		U	0.0012	0.00021	mg/kg
A1(10-15)-20201009	460-220223-1	METHYL ETHYL KETONE (2-BUTANONE)	10/11/2020		Y	N	UT		U	0.0059	0.0032	mg/kg
A1(10-15)-20201009	460-220223-1	METHYLCYCLOHEXANE	10/11/2020		Y	N	U		U	0.0012	0.00059	mg/kg
A3(10-15)-20201009	460-220223-2	TERT-BUTYL METHYL ETHER	10/11/2020		Y	N	U		U	0.0011	0.00013	mg/kg
A3(10-15)-20201009	460-220223-2	CHLOROMETHANE	10/11/2020		Y	N	U	UJ	UJ	0.0011	0.00046	mg/kg
A3(10-15)-20201009	460-220223-2	Cis-1,2-Dichloroethylene	10/11/2020		Y	N	U		U	0.0011	0.00016	mg/kg
A3(10-15)-20201009	460-220223-2	CIS-1,3-DICHLOROPROPENE	10/11/2020		Y	N	U	UJ	UJ	0.0011	0.00029	mg/kg
A3(10-15)-20201009	460-220223-2	CYCLOHEXANE	10/11/2020		Y	N	U		U	0.0011	0.00023	mg/kg
A3(10-15)-20201009	460-220223-2	DIBROMOCHLOROMETHANE	10/11/2020		Y	N	U		U	0.0011	0.00021	mg/kg
A3(10-15)-20201009	460-220223-2	DICHLORODIFLUOROMETHANE	10/11/2020		Y	N	U		U	0.0011	0.00036	mg/kg
A3(10-15)-20201009	460-220223-2	ETHYLBENZENE	10/11/2020		Y	N	U		U	0.0011	0.00021	mg/kg
A3(10-15)-20201009	460-220223-2	Isopropylbenzene (Cumene)	10/11/2020		Y	N	U		U	0.0011	0.00013	mg/kg
A3(10-15)-20201009	460-220223-2	M,P-XYLENES	10/11/2020		Y	N	U		U	0.0011	0.00018	mg/kg
A3(10-15)-20201009	460-220223-2	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	10/11/2020		Y	N	U		U	0.0053	0.0016	mg/kg
A3(10-15)-20201009	460-220223-2	METHYLENE CHLORIDE	10/11/2020		Y	N	U		U	0.0011	0.00049	mg/kg
A3(10-15)-20201009	460-220223-2	CHLOROFORM	10/11/2020		Y	N	U		U	0.0011	0.00034	mg/kg

SDG: 4602202231

Analytical Method SW8260C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
A3(10-15)-20201009	460-220223-2	STYRENE	10/11/2020		Y	N	U		U	0.0011	0.00029	mg/kg
A3(10-15)-20201009	460-220223-2	METHYL ACETATE	10/11/2020		Y	N	U	UJ	UJ	0.0053	0.0046	mg/kg
A3(10-15)-20201009	460-220223-2	TOLUENE	10/11/2020		Y	N	U		U	0.0011	0.00025	mg/kg
A3(10-15)-20201009	460-220223-2	TRANS-1,2-DICHLOROETHENE	10/11/2020		Y	N	U		U	0.0011	0.00026	mg/kg
A3(10-15)-20201009	460-220223-2	TRANS-1,3-DICHLOROPROPENE	10/11/2020		Y	N	U	UJ	UJ	0.0011	0.00028	mg/kg
A3(10-15)-20201009	460-220223-2	TRICHLOROETHYLENE (TCE)	10/11/2020		Y	N	U		U	0.0011	0.00015	mg/kg
A3(10-15)-20201009	460-220223-2	TRICHLOROFLUOROMETHANE	10/11/2020		Y	N	U	UJ	UJ	0.0011	0.00043	mg/kg
A3(10-15)-20201009	460-220223-2	VINYL CHLORIDE	10/11/2020		Y	N	U		U	0.0011	0.00058	mg/kg
A3(10-15)-20201009	460-220223-2	BENZENE	10/11/2020		Y	N	U		U	0.0011	0.00027	mg/kg
A3(10-15)-20201009	460-220223-2	TETRACHLOROETHYLENE(PCE)	10/11/2020	0.0015	Y	Y				0.0011	0.00015	mg/kg
A3(10-15)-20201009	460-220223-2	METHYL ETHYL KETONE (2-BUTANONE)	10/11/2020		Y	N	UT		U	0.0053	0.0029	mg/kg
A3(10-15)-20201009	460-220223-2	O-XYLENE (1,2-DIMETHYLBENZENE)	10/11/2020		Y	N	U		U	0.0011	0.00021	mg/kg
A3(10-15)-20201009	460-220223-2	1,3-DICHLOROBENZENE	10/11/2020		Y	N	U		U	0.0011	0.00017	mg/kg
A3(10-15)-20201009	460-220223-2	ACETONE	10/11/2020		Y	N	U		U	0.0064	0.0061	mg/kg
A3(10-15)-20201009	460-220223-2	2-HEXANONE	10/11/2020		Y	N	U		U	0.0053	0.0018	mg/kg
A3(10-15)-20201009	460-220223-2	1,4-DIOXANE (P-DIOXANE)	10/11/2020		Y	N	U		U	0.021	0.0097	mg/kg
A3(10-15)-20201009	460-220223-2	METHYLCYCLOHEXANE	10/11/2020		Y	N	U		U	0.0011	0.00053	mg/kg
A3(10-15)-20201009	460-220223-2	1,4-DICHLOROBENZENE	10/11/2020		Y	N	U		U	0.0011	0.00024	mg/kg
A3(10-15)-20201009	460-220223-2	1,2-DICHLOROPROPANE	10/11/2020		Y	N	U		U	0.0011	0.00045	mg/kg
A3(10-15)-20201009	460-220223-2	1,2-DICHLOROETHANE	10/11/2020		Y	N	U		U	0.0011	0.00031	mg/kg
A3(10-15)-20201009	460-220223-2	1,2-DICHLOROBENZENE	10/11/2020		Y	N	U		U	0.0011	0.00015	mg/kg
A3(10-15)-20201009	460-220223-2	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	10/11/2020		Y	N	U		U	0.0011	0.00019	mg/kg

SDG: 4602202231

Analytical Method SW8260C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
A3(10-15)-20201009	460-220223-2	1,2-DIBROMO-3-CHLOROPROPANE	10/11/2020		Y	N	U	UJ	UJ	0.0011	0.00049	mg/kg
A3(10-15)-20201009	460-220223-2	1,2,4-TRICHLOROBENZENE	10/11/2020		Y	N	U		U	0.0011	0.00038	mg/kg
A3(10-15)-20201009	460-220223-2	1,2,3-TRICHLOROBENZENE	10/11/2020		Y	N	U		U	0.0011	0.00019	mg/kg
A3(10-15)-20201009	460-220223-2	1,1-DICHLOROETHENE	10/11/2020		Y	N	U		U	0.0011	0.00024	mg/kg
A3(10-15)-20201009	460-220223-2	1,1-DICHLOROETHANE	10/11/2020		Y	N	U		U	0.0011	0.00022	mg/kg
A3(10-15)-20201009	460-220223-2	CARBON DISULFIDE	10/11/2020		Y	N	U		U	0.0011	0.00028	mg/kg
A3(10-15)-20201009	460-220223-2	CHLOROBENZENE	10/11/2020		Y	N	U		U	0.0011	0.00019	mg/kg
A3(10-15)-20201009	460-220223-2	CHLOROETHANE	10/11/2020		Y	N	U		U	0.0011	0.00055	mg/kg
A3(10-15)-20201009	460-220223-2	1,1,2-TRICHLOROETHANE	10/11/2020		Y	N	U		U	0.0011	0.00019	mg/kg
A3(10-15)-20201009	460-220223-2	CARBON TETRACHLORIDE	10/11/2020		Y	N	U		U	0.0011	0.00041	mg/kg
A3(10-15)-20201009	460-220223-2	BROMOMETHANE	10/11/2020		Y	N	U	UJ	UJ	0.0011	0.00050	mg/kg
A3(10-15)-20201009	460-220223-2	BROMOFORM	10/11/2020		Y	N	U		U	0.0011	0.00045	mg/kg
A3(10-15)-20201009	460-220223-2	BROMOCHLOROMETHANE	10/11/2020		Y	N	U		U	0.0011	0.00030	mg/kg
A3(10-15)-20201009	460-220223-2	1,1,1-TRICHLOROETHANE	10/11/2020		Y	N	U		U	0.0011	0.00025	mg/kg
A3(10-15)-20201009	460-220223-2	1,1,2,2-TETRACHLOROETHANE	10/11/2020		Y	N	U	UJ	UJ	0.0011	0.00023	mg/kg
A3(10-15)-20201009	460-220223-2	BROMODICHLOROMETHANE	10/11/2020		Y	N	U		U	0.0011	0.00027	mg/kg
A3(10-15)-20201009	460-220223-2	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	10/11/2020		Y	N	U		U	0.0011	0.00032	mg/kg
A4(0-5)-20201009	460-220223-3	CHLOROBENZENE	10/11/2020		Y	N	U		U	0.0011	0.00020	mg/kg
A4(0-5)-20201009	460-220223-3	BROMOFORM	10/11/2020		Y	N	U		U	0.0011	0.00048	mg/kg
A4(0-5)-20201009	460-220223-3	Cis-1,2-Dichloroethylene	10/11/2020		Y	N	U		U	0.0011	0.00017	mg/kg
A4(0-5)-20201009	460-220223-3	1,2,4-TRICHLOROBENZENE	10/11/2020		Y	N	U		U	0.0011	0.00041	mg/kg
A4(0-5)-20201009	460-220223-3	CHLOROMETHANE	10/11/2020		Y	N	U	UJ	UJ	0.0011	0.00050	mg/kg

SDG: 4602202231

Analytical Method	SW8260C											
Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
A4(0-5)-20201009	460-220223-3	BROMOMETHANE	10/11/2020		Y	N	U	UJ	UJ	0.0011	0.00054	mg/kg
A4(0-5)-20201009	460-220223-3	CHLOROETHANE	10/11/2020		Y	N	U		U	0.0011	0.00059	mg/kg
A4(0-5)-20201009	460-220223-3	CARBON TETRACHLORIDE	10/11/2020		Y	N	U		U	0.0011	0.00044	mg/kg
A4(0-5)-20201009	460-220223-3	BROMODICHLOROMETHANE	10/11/2020		Y	N	U		U	0.0011	0.00029	mg/kg
A4(0-5)-20201009	460-220223-3	1,4-DICHLOROBENZENE	10/11/2020		Y	N	U		U	0.0011	0.00026	mg/kg
A4(0-5)-20201009	460-220223-3	CHLOROFORM	10/11/2020		Y	N	U		U	0.0011	0.00036	mg/kg
A4(0-5)-20201009	460-220223-3	CARBON DISULFIDE	10/11/2020		Y	N	U		U	0.0011	0.00030	mg/kg
A4(0-5)-20201009	460-220223-3	BROMOCHLOROMETHANE	10/11/2020		Y	N	U		U	0.0011	0.00032	mg/kg
A4(0-5)-20201009	460-220223-3	BENZENE	10/11/2020		Y	N	U		U	0.0011	0.00029	mg/kg
A4(0-5)-20201009	460-220223-3	ACETONE	10/11/2020		Y	N	U		U	0.0068	0.0065	mg/kg
A4(0-5)-20201009	460-220223-3	1,2-DIBROMO-3-CHLOROPROPANE	10/11/2020		Y	N	U	UJ	UJ	0.0011	0.00052	mg/kg
A4(0-5)-20201009	460-220223-3	1,4-DIOXANE (P-DIOXANE)	10/11/2020		Y	N	U		U	0.023	0.010	mg/kg
A4(0-5)-20201009	460-220223-3	1,3-DICHLOROBENZENE	10/11/2020		Y	N	U		U	0.0011	0.00018	mg/kg
A4(0-5)-20201009	460-220223-3	1,2-DICHLOROPROPANE	10/11/2020		Y	N	U		U	0.0011	0.00048	mg/kg
A4(0-5)-20201009	460-220223-3	1,2-DICHLOROETHANE	10/11/2020		Y	N	U		U	0.0011	0.00034	mg/kg
A4(0-5)-20201009	460-220223-3	1,2-DICHLOROBENZENE	10/11/2020		Y	N	U		U	0.0011	0.00016	mg/kg
A4(0-5)-20201009	460-220223-3	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	10/11/2020		Y	N	U		U	0.0011	0.00021	mg/kg
A4(0-5)-20201009	460-220223-3	1,2,3-TRICHLOROBENZENE	10/11/2020		Y	N	U		U	0.0011	0.00021	mg/kg
A4(0-5)-20201009	460-220223-3	1,1,1-TRICHLOROETHANE	10/11/2020		Y	N	U		U	0.0011	0.00027	mg/kg
A4(0-5)-20201009	460-220223-3	CIS-1,3-DICHLOROPROPENE	10/11/2020		Y	N	U	UJ	UJ	0.0011	0.00031	mg/kg
A4(0-5)-20201009	460-220223-3	2-HEXANONE	10/11/2020		Y	N	U		U	0.0057	0.0019	mg/kg
A4(0-5)-20201009	460-220223-3	TRANS-1,3-DICHLOROPROPENE	10/11/2020		Y	N	U	UJ	UJ	0.0011	0.00030	mg/kg

SDG: 4602202231

Analytical Method SW8260C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
A4(0-5)-20201009	460-220223-3	METHYL ETHYL KETONE (2-BUTANONE)	10/11/2020		Y	N	UT		U	0.0057	0.0031	mg/kg
A4(0-5)-20201009	460-220223-3	1,1-DICHLOROETHENE	10/11/2020		Y	N	U		U	0.0011	0.00026	mg/kg
A4(0-5)-20201009	460-220223-3	1,1,2,2-TETRACHLOROETHANE	10/11/2020		Y	N	U	UJ	UJ	0.0011	0.00024	mg/kg
A4(0-5)-20201009	460-220223-3	1,1,2-TRICHLOROETHANE	10/11/2020		Y	N	U		U	0.0011	0.00020	mg/kg
A4(0-5)-20201009	460-220223-3	1,1-DICHLOROETHANE	10/11/2020		Y	N	U		U	0.0011	0.00023	mg/kg
A4(0-5)-20201009	460-220223-3	METHYLENE CHLORIDE	10/11/2020		Y	N	U		U	0.0011	0.00053	mg/kg
A4(0-5)-20201009	460-220223-3	O-XYLENE (1,2-DIMETHYLBENZENE)	10/11/2020		Y	N	U		U	0.0011	0.00022	mg/kg
A4(0-5)-20201009	460-220223-3	STYRENE	10/11/2020		Y	N	U		U	0.0011	0.00032	mg/kg
A4(0-5)-20201009	460-220223-3	TERT-BUTYL METHYL ETHER	10/11/2020		Y	N	U		U	0.0011	0.00014	mg/kg
A4(0-5)-20201009	460-220223-3	TETRACHLOROETHYLENE(PCE)	10/11/2020		Y	N	U		U	0.0011	0.00016	mg/kg
A4(0-5)-20201009	460-220223-3	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	10/11/2020		Y	N	U		U	0.0011	0.00034	mg/kg
A4(0-5)-20201009	460-220223-3	TRANS-1,2-DICHLOROETHENE	10/11/2020		Y	N	U		U	0.0011	0.00028	mg/kg
A4(0-5)-20201009	460-220223-3	CYCLOHEXANE	10/11/2020		Y	N	U		U	0.0011	0.00025	mg/kg
A4(0-5)-20201009	460-220223-3	TRICHLOROETHYLENE (TCE)	10/11/2020		Y	N	U		U	0.0011	0.00016	mg/kg
A4(0-5)-20201009	460-220223-3	TRICHLOROFLUOROMETHANE	10/11/2020		Y	N	U	UJ	UJ	0.0011	0.00046	mg/kg
A4(0-5)-20201009	460-220223-3	VINYL CHLORIDE	10/11/2020		Y	N	U		U	0.0011	0.00062	mg/kg
A4(0-5)-20201009	460-220223-3	METHYLCYCLOHEXANE	10/11/2020		Y	N	U		U	0.0011	0.00057	mg/kg
A4(0-5)-20201009	460-220223-3	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	10/11/2020		Y	N	U		U	0.0057	0.0018	mg/kg
A4(0-5)-20201009	460-220223-3	METHYL ACETATE	10/11/2020		Y	N	U	UJ	UJ	0.0057	0.0049	mg/kg
A4(0-5)-20201009	460-220223-3	M,P-XYLENES	10/11/2020		Y	N	U		U	0.0011	0.00020	mg/kg
A4(0-5)-20201009	460-220223-3	Isopropylbenzene (Cumene)	10/11/2020		Y	N	U		U	0.0011	0.00014	mg/kg
A4(0-5)-20201009	460-220223-3	ETHYLBENZENE	10/11/2020		Y	N	U		U	0.0011	0.00023	mg/kg

SDG: 4602202231

Analytical Method SW8260C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
A4(0-5)-20201009	460-220223-3	DICHLORODIFLUOROMETHANE	10/11/2020		Y	N	U		U	0.0011	0.00039	mg/kg
A4(0-5)-20201009	460-220223-3	DIBROMOCHLOROMETHANE	10/11/2020		Y	N	U		U	0.0011	0.00022	mg/kg
A4(0-5)-20201009	460-220223-3	TOLUENE	10/11/2020		Y	N	U		U	0.0011	0.00027	mg/kg

Site: Long Island City, 30th Street
Laboratory: Eurofins
Report No.: 460-220571-1
Reviewer: Josephine Go and Christina Rink/Laboratory Data Consultants for GEI Consultants, Inc. – Huntington Station, NY
Date: December 1, 2020

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
A2 (10-15)	460-220571-1	VOC
B1 (5-10)	460-220571-2	VOC

Associated QC Samples(s):
Field/Trip Blanks: None Associated
Field Duplicate pair: None Associated

The above-listed soil and water samples were collected on October 13, 2020 and were analyzed for volatile organic compounds (VOCs) by SW-846 method 8260C. The data validation was performed in accordance with the USEPA Region 2 *Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-Method 8260B and 8260C,* SOP HW-24, Revision 4 (October 2014) and the USEPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,* EPA 540-R-2017-002 (January 2017), modified as necessary to accommodate the non-CLP methodologies used.

The organic data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) Tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Control Sample (LCS) Results
- Internal Standards
- Field Duplicate Results
- Moisture Content
- Quantitation Limits and Data Assessment
- Sample Quantitation and Compound Identification

Overall Evaluation of Data and Potential Usability Issues

All results are usable as reported or usable with minor qualification due to laboratory quality control outliers.

The validation findings were based on the following information.

Data Completeness

The data package was complete as defined under the requirements for the NYSDEC ASP category B laboratory deliverables.

Holding Times and Sample Preservation

All technical holding time requirements were met with the following exceptions:

Sample	Compound	Total Days From Sample Collection Until Analysis	Required Holding Time (in Days) From Sample Collection Until Analysis	Validation Action
A2 (10-15)	All VOC	6	2	J detects/UJ nondetects
B1 (5-10)	All VOC	3	2	J detects/UJ nondetects

The VOC results may be biased low due to holding time exceedances. The results can be used for project objectives as estimated values (J) or nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

GC/MS Tunes

All criteria were met.

Initial and Continuing Calibrations

Initial Calibration:

All criteria were met.

Continuing calibration:

Compounds that did not meet criteria are summarized in the following table.

Date	Standard ID	Compound	CC %D	Associated Samples		Validation Action
10/16/20	K19671	Methyl acetate	23.5	B1 (5-10)	XX	UJ nondetects
10/19/20	K19696	Methyl acetate	20.9	A2 (10-15)	XX	UJ nondetects
		2-Hexanone	26.4		XX	UJ nondetects

X = Initial calibration (IC) relative standard deviation (%RSD) > 20; estimate (J/UJ) positive and nondetect results.
XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ) positive and nondetect results.
SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.
+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The methyl acetate and 2-hexanone results for the samples listed above were estimated due to continuing calibration exceedance. The bias cannot be determined. The results can be used for project objectives as nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Blanks

Contamination was not detected in the method blanks.

A field blank was not associated with this sample set. Validation action was not required on this basis.

Surrogate Recoveries

All criteria were met.

MS/MSD Results

MS/MSD analyses were not associated with this sample set. Validation action was not required on this basis.

LCS Results

All criteria were met.

Internal Standards

All criteria were met.

Field Duplicate Results

A field duplicate pair was not associated with this sample set. Validation action was not required on this basis.

Moisture Content

All criteria were met.

Quantitation Limits and Data Assessment

No results were reported below the reporting limit (RL) and above the method detection limit (MDL) in the VOC analysis.

Dilutions were not required for VOC analysis.

Sample Quantitation and Compound Identification

Calculations were spot-checked; no discrepancies were noted.

DATA VALIDATION QUALIFIERS

U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.

J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.

JN - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.

R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

LDC #: 49691F1a
SDG #: 460-220571-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Category B

Date: 11/20/20
Page: 1 of 1
Reviewer: SVG
2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / SW	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / A	ICAL ≤ 20% r ICV ≤ 30%
IV.	Continuing calibration	SW	CCV ≤ 20%
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	A	LCS D
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	no result < RL
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1 (1/2)	A2 (10-15)	460-220571-1	Soil	10/13/20
2 (1/3)	B1 (5-10)	460-220571-2	Soil	10/13/20
3				
4				
5				
6				
7				
8				
9				

Notes:

1	LB3 460-732064/1-A						
2	MB 460-732145/7						
3	↓ - 732783/7						

LDC #: 49691F1a

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG

Method: Volatiles (EPA SW 846 Method 8260C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?		✓		
Was cooler temperature criteria met?	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20% and relative response factors (RRF) within method criteria?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 30%?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 20% and relative response factors (RRF) within method criteria?		✓		
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks were identified in this SDG?	✓	✓		
Were target compounds detected in the field blanks?			✓	
VII. Surrogate spikes				
Were all surrogate percent recovery (%R) within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
X. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds detected in the field duplicates?			✓	
XI. Internal standards				
Were internal standard area counts within -50% to +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XII. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	AA. Tetrachloroethene	AAA. 1,3,5-Trimethylbenzene	AAAA. Ethyl tert-butyl ether	A1. 1,3-Butadiene	A2.
B. Bromomethane	BB. 1,1,2,2-Tetrachloroethane	BBB. 4-Chlorotoluene	BBBB. tert-Amyl methyl ether	B1. Hexane	B2.
C. Vinyl choride	CC. Toluene	CCC. tert-Butylbenzene	CCCC. 1-Chlorohexane	C1. Heptane	C2.
D. Chloroethane	DD. Chlorobenzene	DDD. 1,2,4-Trimethylbenzene	DDDD. Isopropyl alcohol	D1. Propylene	D2.
E. Methylene chloride	EE. Ethylbenzene	EEE. sec-Butylbenzene	EEEE. Acetonitrile	E1. Freon 11	E2.
F. Acetone	FF. Styrene	FFF. 1,3-Dichlorobenzene	FFFF. Acrolein	F1. Freon 12	F2.
G. Carbon disulfide	GG. Xylenes, total	GGG. p-Isopropyltoluene	GGGG. Acrylonitrile	G1. Freon 113	G2.
H. 1,1-Dichloroethene	HH. Vinyl acetate	HHH. 1,4-Dichlorobenzene	HHHH. 1,4-Dioxane	H1. Freon 114	H2.
I. 1,1-Dichloroethane	II. 2-Chloroethylvinyl ether	III. n-Butylbenzene	IIII. Isobutyl alcohol	I1. 2-Nitropropane	I2.
J. 1,2-Dichloroethene, total	JJ. Dichlorodifluoromethane	JJJ. 1,2-Dichlorobenzene	JJJJ. Methacrylonitrile	J1. Dimethyl disulfide	J2.
K. Chloroform	KK. Trichlorofluoromethane	KKK. 1,2,4-Trichlorobenzene	KKKK. Propionitrile	K1. 2,3-Dimethyl pentane	K2.
L. 1,2-Dichloroethane	LL. Methyl-tert-butyl ether	LLL. Hexachlorobutadiene	LLLL. Ethyl ether	L1. 2,4-Dimethyl pentane	L2.
M. 2-Butanone	MM. 1,2-Dibromo-3-chloropropane	MMM. Naphthalene	MMMM. Benzyl chloride	M1. 3,3-Dimethyl pentane	M2.
N. 1,1,1-Trichloroethane	NN. Methyl ethyl ketone	NNN. 1,2,3-Trichlorobenzene	NNNN. Iodomethane	N1. 2-Methylpentane	N2.
O. Carbon tetrachloride	OO. 2,2-Dichloropropane	OOO. 1,3,5-Trichlorobenzene	OOOO.1,1-Difluoroethane	O1. 3-Methylpentane	O2.
P. Bromodichloromethane	PP. Bromochloromethane	PPP. trans-1,2-Dichloroethene	PPPP. Tetrahydrofuran	P1. 3-Ethylpentane	P2.
Q. 1,2-Dichloropropane	QQ. 1,1-Dichloropropene	QQQ. cis-1,2-Dichloroethene	QQQQ. Methyl acetate	Q1. 2,2-Dimethylpentane	Q2.
R. cis-1,3-Dichloropropene	RR. Dibromomethane	RRR. m,p-Xylenes	RRRR. Ethyl acetate	R1. 2,2,3- Trimethylbutane	R2.
S. Trichloroethene	SS. 1,3-Dichloropropane	SSS. o-Xylene	SSSS. Cyclohexane	S1. 2,2,4-Trimethylpentane	S2.
T. Dibromochloromethane	TT. 1,2-Dibromoethane	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	TTTT. Methylcyclohexane	T1. 2-Methylhexane	T2.
U. 1,1,2-Trichloroethane	UU. 1,1,1,2-Tetrachloroethane	UUU. 1,2-Dichlorotetrafluoroethane	UUUU. Allyl chloride	U1. Nonanal	U2.
V. Benzene	VV. Isopropylbenzene	VVV. 4-Ethyltoluene	VVVV. Methyl methacrylate	V1. 2-Methylnaphthalene	V2.
W. trans-1,3-Dichloropropene	WW. Bromobenzene	WWW. Ethanol	WWWW. Ethyl methacrylate	W1. Methanol	W2.
X. Bromoform	XX. 1,2,3-Trichloropropane	XXX. Di-isopropyl ether	XXXX. cis-1,4-Dichloro-2-butene	X1. 1,2,3-Trimethylbenzene	X2.
Y. 4-Methyl-2-pentanone	YY. n-Propylbenzene	YYY. tert-Butanol	YYYY. trans-1,4-Dichloro-2-butene	Y1. 2-Propanol	Y2.
Z. 2-Hexanone	ZZ. 2-Chlorotoluene	ZZZ. tert-Butyl alcohol	ZZZZ. Pentachloroethane	Z1.	Z2.

LDC #: 49691 Fra

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Reviewer: JVG

All circled dates have exceeded the technical holding times.
(Y) N N/A Were all cooler temperatures within validation criteria?
Y N (N/A) Were air bubbles > 1/4 inch or was headspace present in the vials?

METHOD : GC/MS VOA (EPA SW 846 Method 8260C)

Sample ID	Matrix	Preserved	Sampling Date	Extraction date	Analysis date (within 48hrs)	Total # of Days	Qualifier
1	S	N	10/13/20	—	10/19/20	6	J/UJ/A
2	↓	↓	↓	—	10/16/20	3	↓

TECHNICAL HOLDING TIME CRITERIA

Water unpreserved:	Aromatic within 7 days, non-aromatic within 14 days of sample collection.
Water preserved:	Within 14 days of sample collection.
Soil:	Within 14 days of sample collection.
Encores/Terracores unpreserved:	Analyzed within 48 hours
Encores/Terracores preserved:	Analyzed within 14 days

Note: Samples were not frozen or chemically preserved within 48 hrs from sampling due to an internal tracking error.
(prepped after 52 hrs)

LDC #: 49691Fla

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Y N N/A Were percent differences (%D) ≤20 % and relative response factors (RRF) within the method criteria?

#	Date	Standard ID	Compound	Finding %D (Limit: <20.0%)	Finding RRF (Limit)	Associated Samples	Qualifications
	10/16/20	K19671	QQQQ	23.5		2, MB2 (ND)	J/UJ/A
	10/19/20	K19696	QQQQ	20.9		1, LB, MB1 (ND)	
			Z	26.4			

Note: * = Ave RRF failed method criteria but within validation criteria

LDC #: 49691F1a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$ — A_x = Area of Compound — A_{is} = Area of associated internal standard

average RRF = sum of the RRFs/number of standards — C_x = Concentration of compound — C_{is} = Concentration of internal standard

%RSD = 100 * (S/X) — S= Standard deviation of the RRFs — X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 50 std)	Recalculated RRF (RRF 50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL CVOAMS9	10/12/2020	2-Butanone (BUT)	0.3995	0.3995	0.4172	0.4172	7.4	7.4
			cis-1,2-DCE (FBZ)	0.4246	0.4246	0.4210	0.4210	8.2	8.2
			1,4-Dioxane (DXE)	1.5444	1.5444	1.5031	1.5031	17.2	17.2
			Tetrachloroethene (CBZ)	0.4732	0.4732	0.4829	0.4829	4.6	4.6
			1,4-DCB (DCB)	1.7917	1.7917	1.8385	1.8385	10.1	10.1

LDC # 49691F1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound	(IS)	Average RRF (Initial)	Reported RRF (CCV)	Recalculated RRF (CCV)	Reported % D	Recalculated %D
1	K19671	10/16/2020	2-Butanone	(BUT)	0.4172	0.3976	0.3976	4.7	4.7
			cis-1,2-DCE	(FBZ)	0.4210	0.4347	0.4347	3.3	3.3
			1,4-Dioxane	(DXE)	1.5031	1.5405	1.5405	2.5	2.5
			Tetrachloroethene	(CBZ)	0.4829	0.4838	0.4838	0.2	0.2
			1,4-DCB	(DCB)	1.8385	1.7844	1.7844	2.9	2.9
2	K19696	10/19/2020	2-Butanone	(BUT)	0.4172	0.3647	0.3647	12.6	12.6
			cis-1,2-DCE	(FBZ)	0.4210	0.4312	0.4312	2.4	2.4
			1,4-Dioxane	(DXE)	1.5031	1.3812	1.3812	8.1	8.1
			Tetrachloroethene	(CBZ)	0.4829	0.4717	0.4717	2.3	2.3
			1,4-DCB	(DCB)	1.8385	1.6568	1.6568	9.9	9.9

LDC #: 49691F1a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	50.0	55.6	111	111	9
1,2-Dichloroethane-d4	↓	56.4	113	113	↓
Toluene-d8		49.6	99	99	
Bromofluorobenzene		52.4	104	104	

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 49691 F1e

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration; SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: LCS D 460-732783/3,4

Compound	Spike Added (mg/kg)		Spiked Sample Concentration (mg/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
1,1-Dichloroethene	0.0200	0.0200	0.0224	0.0213	112	112	107	107	5	5
Trichloroethene			0.0192	0.0187	96	96	94	94	2	2
Benzene			0.0223	0.0212	111	111	106	106	5	5
Toluene			0.0200	0.0191	100	100	105	105	5	5
Chlorobenzene	✓	✓	0.0184	0.0178	92	92	89	89	3	3

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 49691 F1a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The concentration of the sample was calculated for the compound identified below using the following calculation:

$$\text{Concentration} = \frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 1, PCE

$$\text{Conc.} = \frac{(8771)(150)(5\text{mL})}{(407707)(0.4829)(5.88\text{g})(0.864)(1000)}$$

$$= 0.00219$$

$$\approx 0.0022$$

#	Sample ID	Compound	Reported Concentration ~~(ug/L)~~ mg/kg	Calculated Concentration ~~(ug/L)~~ mg/kg	Qualification
	1	PCE	0.0022	0.0022	—

30th Street, Long Island City, Site No. C241214 - LDC# 49691F

SDG: 4602205711

Analytical Method SW8260C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
A2 (10-15)-20201013	460-220571-1	METHYL ETHYL KETONE (2-BUTANONE)	10/19/2020		Y	N	UHT	UJ	UJ	0.0049	0.0027	mg/kg
A2 (10-15)-20201013	460-220571-1	1,1,1-TRICHLOROETHANE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00023	mg/kg
A2 (10-15)-20201013	460-220571-1	CHLOROFORM	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00031	mg/kg
A2 (10-15)-20201013	460-220571-1	CHLOROMETHANE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00043	mg/kg
A2 (10-15)-20201013	460-220571-1	Cis-1,2-Dichloroethylene	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00015	mg/kg
A2 (10-15)-20201013	460-220571-1	CIS-1,3-DICHLOROPROPENE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00027	mg/kg
A2 (10-15)-20201013	460-220571-1	CYCLOHEXANE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00022	mg/kg
A2 (10-15)-20201013	460-220571-1	DIBROMOCHLOROMETHANE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00019	mg/kg
A2 (10-15)-20201013	460-220571-1	DICHLORODIFLUOROMETHANE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00033	mg/kg
A2 (10-15)-20201013	460-220571-1	ETHYLBENZENE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00020	mg/kg
A2 (10-15)-20201013	460-220571-1	Isopropylbenzene (Cumene)	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00012	mg/kg
A2 (10-15)-20201013	460-220571-1	CHLOROBENZENE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00017	mg/kg
A2 (10-15)-20201013	460-220571-1	METHYL ACETATE	10/19/2020		Y	N	UHT	UJ	UJ	0.0049	0.0042	mg/kg
A2 (10-15)-20201013	460-220571-1	CARBON TETRACHLORIDE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00038	mg/kg
A2 (10-15)-20201013	460-220571-1	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	10/19/2020		Y	N	UHT	UJ	UJ	0.0049	0.0015	mg/kg
A2 (10-15)-20201013	460-220571-1	METHYLCYCLOHEXANE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00049	mg/kg
A2 (10-15)-20201013	460-220571-1	METHYLENE CHLORIDE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00046	mg/kg
A2 (10-15)-20201013	460-220571-1	O-XYLENE (1,2-DIMETHYLBENZENE)	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00019	mg/kg
A2 (10-15)-20201013	460-220571-1	STYRENE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00027	mg/kg
A2 (10-15)-20201013	460-220571-1	TERT-BUTYL METHYL ETHER	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00012	mg/kg
A2 (10-15)-20201013	460-220571-1	TOLUENE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00023	mg/kg

SDG: 4602205711

Analytical Method SW8260C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
A2 (10-15)-20201013	460-220571-1	TRANS-1,2-DICHLOROETHENE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00024	mg/kg
A2 (10-15)-20201013	460-220571-1	TRANS-1,3-DICHLOROPROPENE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00026	mg/kg
A2 (10-15)-20201013	460-220571-1	TRICHLOROETHYLENE (TCE)	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00014	mg/kg
A2 (10-15)-20201013	460-220571-1	TRICHLOROFLUOROMETHANE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00040	mg/kg
A2 (10-15)-20201013	460-220571-1	M,P-XYLENES	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00017	mg/kg
A2 (10-15)-20201013	460-220571-1	1,2-DICHLOROPROPANE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00042	mg/kg
A2 (10-15)-20201013	460-220571-1	TETRACHLOROETHYLENE(PCE)	10/19/2020	0.0022	Y	Y	HT	J	J	0.00098	0.00014	mg/kg
A2 (10-15)-20201013	460-220571-1	1,1,2,2-TETRACHLOROETHANE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00021	mg/kg
A2 (10-15)-20201013	460-220571-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00030	mg/kg
A2 (10-15)-20201013	460-220571-1	1,1,2-TRICHLOROETHANE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00018	mg/kg
A2 (10-15)-20201013	460-220571-1	1,1-DICHLOROETHANE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00020	mg/kg
A2 (10-15)-20201013	460-220571-1	1,1-DICHLOROETHENE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00022	mg/kg
A2 (10-15)-20201013	460-220571-1	1,2,3-TRICHLOROBENZENE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00018	mg/kg
A2 (10-15)-20201013	460-220571-1	1,2,4-TRICHLOROBENZENE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00035	mg/kg
A2 (10-15)-20201013	460-220571-1	1,2-DIBROMO-3-CHLOROPROPANE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00045	mg/kg
A2 (10-15)-20201013	460-220571-1	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00018	mg/kg
A2 (10-15)-20201013	460-220571-1	CHLOROETHANE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00051	mg/kg
A2 (10-15)-20201013	460-220571-1	1,2-DICHLOROETHANE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00029	mg/kg
A2 (10-15)-20201013	460-220571-1	VINYL CHLORIDE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00054	mg/kg
A2 (10-15)-20201013	460-220571-1	1,3-DICHLOROBENZENE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00016	mg/kg
A2 (10-15)-20201013	460-220571-1	1,4-DICHLOROBENZENE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00022	mg/kg
A2 (10-15)-20201013	460-220571-1	1,4-DIOXANE (P-DIOXANE)	10/19/2020		Y	N	UHT	UJ	UJ	0.020	0.0090	mg/kg

SDG: 4602205711

Analytical Method SW8260C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
A2 (10-15)-20201013	460-220571-1	2-HEXANONE	10/19/2020		Y	N	UHT	UJ	UJ	0.0049	0.0017	mg/kg
A2 (10-15)-20201013	460-220571-1	ACETONE	10/19/2020		Y	N	UHT	UJ	UJ	0.0059	0.0056	mg/kg
A2 (10-15)-20201013	460-220571-1	BENZENE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00025	mg/kg
A2 (10-15)-20201013	460-220571-1	BROMOCHLOROMETHANE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00028	mg/kg
A2 (10-15)-20201013	460-220571-1	BROMODICHLOROMETHANE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00025	mg/kg
A2 (10-15)-20201013	460-220571-1	BROMOFORM	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00042	mg/kg
A2 (10-15)-20201013	460-220571-1	BROMOMETHANE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00047	mg/kg
A2 (10-15)-20201013	460-220571-1	CARBON DISULFIDE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00026	mg/kg
A2 (10-15)-20201013	460-220571-1	1,2-DICHLOROBENZENE	10/19/2020		Y	N	UHT	UJ	UJ	0.00098	0.00014	mg/kg
B1 (5-10)-20201013	460-220571-2	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	10/16/2020		Y	N	UHT	UJ	UJ	0.0047	0.0015	mg/kg
B1 (5-10)-20201013	460-220571-2	1,1,1-TRICHLOROETHANE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00022	mg/kg
B1 (5-10)-20201013	460-220571-2	CHLOROMETHANE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00041	mg/kg
B1 (5-10)-20201013	460-220571-2	Cis-1,2-Dichloroethylene	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00014	mg/kg
B1 (5-10)-20201013	460-220571-2	CIS-1,3-DICHLOROPROPENE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00026	mg/kg
B1 (5-10)-20201013	460-220571-2	CYCLOHEXANE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00021	mg/kg
B1 (5-10)-20201013	460-220571-2	DIBROMOCHLOROMETHANE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00018	mg/kg
B1 (5-10)-20201013	460-220571-2	DICHLORODIFLUOROMETHANE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00032	mg/kg
B1 (5-10)-20201013	460-220571-2	ETHYLBENZENE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00019	mg/kg
B1 (5-10)-20201013	460-220571-2	Isopropylbenzene (Cumene)	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00012	mg/kg
B1 (5-10)-20201013	460-220571-2	M,P-XYLENES	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00016	mg/kg
B1 (5-10)-20201013	460-220571-2	CHLOROETHANE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00049	mg/kg
B1 (5-10)-20201013	460-220571-2	METHYL ETHYL KETONE (2-BUTANONE)	10/16/2020		Y	N	UHT	UJ	UJ	0.0047	0.0026	mg/kg

SDG: 4602205711

Analytical Method SW8260C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
B1 (5-10)-20201013	460-220571-2	CHLOROBENZENE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00017	mg/kg
B1 (5-10)-20201013	460-220571-2	METHYLCYCLOHEXANE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00047	mg/kg
B1 (5-10)-20201013	460-220571-2	METHYLENE CHLORIDE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00044	mg/kg
B1 (5-10)-20201013	460-220571-2	O-XYLENE (1,2-DIMETHYLBENZENE)	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00018	mg/kg
B1 (5-10)-20201013	460-220571-2	STYRENE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00026	mg/kg
B1 (5-10)-20201013	460-220571-2	TERT-BUTYL METHYL ETHER	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00012	mg/kg
B1 (5-10)-20201013	460-220571-2	TOLUENE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00022	mg/kg
B1 (5-10)-20201013	460-220571-2	TRANS-1,2-DICHLOROETHENE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00023	mg/kg
B1 (5-10)-20201013	460-220571-2	TRANS-1,3-DICHLOROPROPENE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00025	mg/kg
B1 (5-10)-20201013	460-220571-2	TRICHLOROETHYLENE (TCE)	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00014	mg/kg
B1 (5-10)-20201013	460-220571-2	TRICHLOROFLUOROMETHANE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00038	mg/kg
B1 (5-10)-20201013	460-220571-2	VINYL CHLORIDE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00052	mg/kg
B1 (5-10)-20201013	460-220571-2	METHYL ACETATE	10/16/2020		Y	N	UHT	UJ	UJ	0.0047	0.0041	mg/kg
B1 (5-10)-20201013	460-220571-2	1,3-DICHLOROBENZENE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00015	mg/kg
B1 (5-10)-20201013	460-220571-2	TETRACHLOROETHYLENE(PCE)	10/16/2020	0.0022	Y	Y	HT	J	J	0.00095	0.00014	mg/kg
B1 (5-10)-20201013	460-220571-2	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00029	mg/kg
B1 (5-10)-20201013	460-220571-2	1,1,2-TRICHLOROETHANE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00017	mg/kg
B1 (5-10)-20201013	460-220571-2	1,1-DICHLOROETHANE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00020	mg/kg
B1 (5-10)-20201013	460-220571-2	1,1-DICHLOROETHENE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00021	mg/kg
B1 (5-10)-20201013	460-220571-2	1,2,3-TRICHLOROBENZENE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00017	mg/kg
B1 (5-10)-20201013	460-220571-2	1,2,4-TRICHLOROBENZENE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00034	mg/kg
B1 (5-10)-20201013	460-220571-2	1,2-DIBROMO-3-CHLOROPROPANE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00044	mg/kg

SDG: 4602205711

Analytical Method SW8260C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
B1 (5-10)-20201013	460-220571-2	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00017	mg/kg
B1 (5-10)-20201013	460-220571-2	1,2-DICHLOROBENZENE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00014	mg/kg
B1 (5-10)-20201013	460-220571-2	CHLOROFORM	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00030	mg/kg
B1 (5-10)-20201013	460-220571-2	1,2-DICHLOROPROPANE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00040	mg/kg
B1 (5-10)-20201013	460-220571-2	1,1,2,2-TETRACHLOROETHANE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00020	mg/kg
B1 (5-10)-20201013	460-220571-2	1,4-DICHLOROBENZENE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00021	mg/kg
B1 (5-10)-20201013	460-220571-2	1,4-DIOXANE (P-DIOXANE)	10/16/2020		Y	N	UHT	UJ	UJ	0.019	0.0087	mg/kg
B1 (5-10)-20201013	460-220571-2	2-HEXANONE	10/16/2020		Y	N	UHT	UJ	UJ	0.0047	0.0016	mg/kg
B1 (5-10)-20201013	460-220571-2	ACETONE	10/16/2020		Y	N	UHT	UJ	UJ	0.0057	0.0054	mg/kg
B1 (5-10)-20201013	460-220571-2	BENZENE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00024	mg/kg
B1 (5-10)-20201013	460-220571-2	BROMOCHLOROMETHANE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00027	mg/kg
B1 (5-10)-20201013	460-220571-2	BROMODICHLOROMETHANE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00024	mg/kg
B1 (5-10)-20201013	460-220571-2	BROMOFORM	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00040	mg/kg
B1 (5-10)-20201013	460-220571-2	BROMOMETHANE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00045	mg/kg
B1 (5-10)-20201013	460-220571-2	CARBON DISULFIDE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00025	mg/kg
B1 (5-10)-20201013	460-220571-2	CARBON TETRACHLORIDE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00037	mg/kg
B1 (5-10)-20201013	460-220571-2	1,2-DICHLOROETHANE	10/16/2020		Y	N	UHT	UJ	UJ	0.00095	0.00028	mg/kg

Site: Long Island City, 30th Street
Laboratory: Eurofins
Report No.: 460-221441-1
Reviewer: Josephine Go and Christina Rink/Laboratory Data Consultants for GEI Consultants, Inc. – Huntington Station, NY
Date: December 1, 2020

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
B1 (5-10)	460-221441-1	VOC
B2 (0-5)	460-221441-2	VOC
B3 (0-5)	460-221441-3	VOC
A2 (10-15)	460-221441-4	VOC

Associated QC Samples(s):
Field/Trip Blanks: None Associated
Field Duplicate pair: None Associated

The above-listed soil samples were collected on October 26, 2020 and were analyzed for volatile organic compounds (VOCs) by SW-846 method 8260D. The data validation was performed in accordance with the USEPA Region 2 *Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-Method 8260B and 8260C,* SOP HW-24, Revision 4 (October 2014) and the USEPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,* EPA 540-R-2017-002 (January 2017), modified as necessary to accommodate the non-CLP methodologies used.

The organic data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) Tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Control Sample (LCS) Results
- Internal Standards
- Field Duplicate Results
- Moisture Content
- Quantitation Limits and Data Assessment
- Sample Quantitation and Compound Identification

Overall Evaluation of Data and Potential Usability Issues

All results are usable as reported or usable with minor qualification due to laboratory quality control outliers.

The validation findings were based on the following information.

Data Completeness

The data package was complete as defined under the requirements for the NYSDEC ASP category B laboratory deliverables.

Holding Times and Sample Preservation

All criteria were met.

GC/MS Tunes

All criteria were met.

Initial and Continuing Calibrations

Initial Calibration:

All criteria were met.

Continuing calibration:

Compounds that did not meet criteria are summarized in the following table.

Date	Standard ID	Compound	CC %D	Associated Samples		Validation Action
10/27/20	D74155	Bromomethane	30.5	B1 (5-10)	XX	UJ nondetects
		Chloroethane	28.3	B2 (0-5)	XX	UJ nondetects
		Bromodichloromethane	22.9	B3 (0-5)	XX	UJ nondetects
				A2 (10-15)		

X = Initial calibration (IC) relative standard deviation (%RSD) > 20; estimate (J/UJ) positive and nondetect results.
XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ) positive and nondetect results.
SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.
+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The bromomethane, chloroethane, and bromodichloromethane results were estimated due to continuing calibration exceedances. The bias cannot be determined. The results can be used for project objectives as nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Blanks

Contamination was not detected in the method blanks.

A field blank was not associated with this sample set. Validation action was not required on this basis.

Surrogate Recoveries

All criteria were met.

MS/MSD Results

MS/MSD analyses were not associated with this sample set. Validation action was not required on this basis.

LCS Results

The following table lists the LCS/LCSD percent recoveries (%R) outside of control limits in the VOC analysis and the resulting validation actions.

LCS ID	Compound	LCS %R (Limits)	LCS/D %R (Limits)	Affected Sample	Validation Action
LCS/LCSD 460-735249/3,4	Chloroethane	145 (65-134)	141 (65-134)	B1 (5-10)	None
	2-Hexanone	-	125 (78-120)	B2 (0-5)	None
	Bromomethane	-	145 (68-136)	B3 (0-5)	None
	Bromodichloromethane	-	131 (73-124)	A2 (10-15)	None
	Trichloroethene	-	124 (79-120)		None

- Within control limits

Validation action was not required for chloroethane, 2-hexanone, bromomethane, bromodichloromethane, and trichloroethene due to high LCS/LCSD percent recoveries as positive results only are affected and these compounds were not detected in the associated samples.

Internal Standards

All criteria were met.

Field Duplicate Results

A field duplicate pair was not associated with this sample set. Validation action was not required on this basis.

Moisture Content

All criteria were met.

Quantitation Limits and Data Assessment

No results were reported below the reporting limit (RL) and above the method detection limit (MDL) in the VOC analysis.

Dilutions were not required for VOC analysis.

Sample Quantitation and Compound Identification

Calculations were spot-checked; no discrepancies were noted.

DATA VALIDATION QUALIFIERS

U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.

J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.

JN - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.

R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

LDC #: 49691G1a
SDG #: 460-221441-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Category B

Date: 11/30/20
Page: 1 of 1
Reviewer: JVG
2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	ICAL ≤ 20% r ICV ≤ 30%
IV.	Continuing calibration	SW	CCV ≤ 20%
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	SW	LCS/D
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	no result < RL
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	B1 (5-10)	460-221441-1	Soil	10/26/20
2	B2 (0-5)	460-221441-2	Soil	10/26/20
3	B3 (0-5)	460-221441-3	Soil	10/26/20
4	A2 (10-15)	460-221441-4	Soil	10/26/20
5				
6				
7				
8				
9				

Notes:

	LB 460-735329/1-A						
	MB 460-735249/7						

LDC #: 49691 61a

VALIDATION FINDINGS CHECKLIST

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20% and relative response factors (RRF) within method criteria?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 30%?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 20% and relative response factors (RRF) within method criteria?		✓		
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks were identified in this SDG?		✓		
Were target compounds detected in the field blanks?			✓	
VII. Surrogate spikes				
Were all surrogate percent recovery (%R) within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?		✓		
X. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds detected in the field duplicates?			✓	
XI. Internal standards				
Were internal standard area counts within -50% to +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XII. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data	✓			
Overall assessment of data was found to be acceptable.				

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	AA. Tetrachloroethene	AAA. 1,3,5-Trimethylbenzene	AAAA. Ethyl tert-butyl ether	A1. 1,3-Butadiene	A2.
B. Bromomethane	BB. 1,1,2,2-Tetrachloroethane	BBB. 4-Chlorotoluene	BBBB. tert-Amyl methyl ether	B1. Hexane	B2.
C. Vinyl choride	CC. Toluene	CCC. tert-Butylbenzene	CCCC. 1-Chlorohexane	C1. Heptane	C2.
D. Chloroethane	DD. Chlorobenzene	DDD. 1,2,4-Trimethylbenzene	DDDD. Isopropyl alcohol	D1. Propylene	D2.
E. Methylene chloride	EE. Ethylbenzene	EEE. sec-Butylbenzene	EEEE. Acetonitrile	E1. Freon 11	E2.
F. Acetone	FF. Styrene	FFF. 1,3-Dichlorobenzene	FFFF. Acrolein	F1. Freon 12	F2.
G. Carbon disulfide	GG. Xylenes, total	GGG. p-Isopropyltoluene	GGGG. Acrylonitrile	G1. Freon 113	G2.
H. 1,1-Dichloroethene	HH. Vinyl acetate	HHH. 1,4-Dichlorobenzene	HHHH. 1,4-Dioxane	H1. Freon 114	H2.
I. 1,1-Dichloroethane	II. 2-Chloroethylvinyl ether	III. n-Butylbenzene	IIII. Isobutyl alcohol	I1. 2-Nitropropane	I2.
J. 1,2-Dichloroethene, total	JJ. Dichlorodifluoromethane	JJJ. 1,2-Dichlorobenzene	JJJJ. Methacrylonitrile	J1. Dimethyl disulfide	J2.
K. Chloroform	KK. Trichlorofluoromethane	KKK. 1,2,4-Trichlorobenzene	KKKK. Propionitrile	K1. 2,3-Dimethyl pentane	K2.
L. 1,2-Dichloroethane	LL. Methyl-tert-butyl ether	LLL. Hexachlorobutadiene	LLLL. Ethyl ether	L1. 2,4-Dimethyl pentane	L2.
M. 2-Butanone	MM. 1,2-Dibromo-3-chloropropane	MMM. Naphthalene	MMMM. Benzyl chloride	M1. 3,3-Dimethyl pentane	M2.
N. 1,1,1-Trichloroethane	NN. Methyl ethyl ketone	NNN. 1,2,3-Trichlorobenzene	NNNN. Iodomethane	N1. 2-Methylpentane	N2.
O. Carbon tetrachloride	OO. 2,2-Dichloropropane	OOO. 1,3,5-Trichlorobenzene	OOOO.1,1-Difluoroethane	O1. 3-Methylpentane	O2.
P. Bromodichloromethane	PP. Bromochloromethane	PPP. trans-1,2-Dichloroethene	PPPP. Tetrahydrofuran	P1. 3-Ethylpentane	P2.
Q. 1,2-Dichloropropane	QQ. 1,1-Dichloropropene	QQQ. cis-1,2-Dichloroethene	QQQQ. Methyl acetate	Q1. 2,2-Dimethylpentane	Q2.
R. cis-1,3-Dichloropropene	RR. Dibromomethane	RRR. m,p-Xylenes	RRRR. Ethyl acetate	R1. 2,2,3- Trimethylbutane	R2.
S. Trichloroethene	SS. 1,3-Dichloropropane	SSS. o-Xylene	SSSS. Cyclohexane	S1. 2,2,4-Trimethylpentane	S2.
T. Dibromochloromethane	TT. 1,2-Dibromoethane	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	TTTT. Methylcyclohexane	T1. 2-Methylhexane	T2.
U. 1,1,2-Trichloroethane	UU. 1,1,1,2-Tetrachloroethane	UUU. 1,2-Dichlorotetrafluoroethane	UUUU. Allyl chloride	U1. Nonanal	U2.
V. Benzene	VV. Isopropylbenzene	VVV. 4-Ethyltoluene	VVVV. Methyl methacrylate	V1. 2-Methylnaphthalene	V2.
W. trans-1,3-Dichloropropene	WW. Bromobenzene	WWW. Ethanol	WWWW. Ethyl methacrylate	W1. Methanol	W2.
X. Bromoform	XX. 1,2,3-Trichloropropane	XXX. Di-isopropyl ether	XXXX. cis-1,4-Dichloro-2-butene	X1. 1,2,3-Trimethylbenzene	X2.
Y. 4-Methyl-2-pentanone	YY. n-Propylbenzene	YYY. tert-Butanol	YYYY. trans-1,4-Dichloro-2-butene	Y1. 2-Propanol	Y2.
Z. 2-Hexanone	ZZ. 2-Chlorotoluene	ZZZ. tert-Butyl alcohol	ZZZZ. Pentachloroethane	Z1.	Z2.

LDC #: 49691 G1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y (N) N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Y (N) N/A Were percent differences (%D) ≤20 % and relative response factors (RRF) within the method criteria?

#	Date	Standard ID	Compound	Finding %D (Limit: <20.0%)	Finding RRF (Limit)	Associated Samples	Qualifications
	10/27/20	D74155	B	30.5		All (ND)	J/UJ/A
			D	28.3		↓ ↓	↓
			P	22.9		↓ ↓	↓

Note: * = Ave RRF failed method criteria but within validation criteria

LDC #: 49691G1a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a LCS required?

Y N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	LCS/D 460-735249/3,4	D	145 (65-134)	141 (65-134)	( )	All (ND)	J dets/P
		Z	( )	125 (78-120)	( )		
		B	( )	145 (68-136)	( )		
		P	( )	131 (73-124)	( )		
		S	( )	124 (79-120)	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		

LDC #: 49691G1a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

average RRF = sum of the RRFs/number of standards

%RSD = 100 * (S/X)

A_x = Area of Compound

C_x = Concentration of compound

S= Standard deviation of the RRFs

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 50 std)	Recalculated RRF (RRF 50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL CVOAMS4	9/16/2020	2-Butanone (BUT)	0.4018	0.4018	0.4143	0.4143	4.2	4.2
			cis-1,2-DCE (FBZ)	0.3926	0.3926	0.3885	0.3885	6.4	6.4
			1,4-Dioxane (DXE)	1.5287	1.5287	1.4586	1.4586	15.9	15.9
			Tetrachloroethene (CBZ)	0.5443	0.5443	0.5127	0.5127	11.2	11.2
			1,4-DCB (DCB)	1.9912	1.9912	1.9598	1.9599	15.4	15.4

LDC # 49691G1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CCV)	Recalculated RRF (CCV)	Reported % D	Recalculated %D
1	D74155	10/27/2020	2-Butanone (BUT)	0.4143	0.3820	0.3820	7.8	7.8
			cis-1,2-DCE (FBZ)	0.3885	0.4198	0.4198	8.1	8.1
			1,4-Dioxane (DXE)	1.4586	1.4419	1.4419	1.1	1.1
			Tetrachloroethene (CBZ)	0.5127	0.5290	0.5290	3.2	3.2
			1,4-DCB (DCB)	1.9598	1.8155	1.8155	7.4	7.4

LDC #: 49691G1a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	50.0	59.5	119	119	0
1,2-Dichloroethane-d4		59.5	119	119	
Toluene-d8		52.3	105	105	
Bromofluorobenzene		51.7	103	103	

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 49691Gla

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration; SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: les lb 460-735249/3, 4

Compound	Spike Added (mg/kg)		Spiked Sample Concentration (mg/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
1,1-Dichloroethene	0.0200	0.0200	0.0235	0.0228	117	117	114	114	3	3
Trichloroethene	|	|	0.0241	0.0248	120	120	124	124	3	3
Benzene	|	|	0.0189	0.0191	94	94	95	95	1	1
Toluene	|	|	0.0197	0.0208	98	98	104	104	5	5
Chlorobenzene	|	|	0.0210	0.0210	105	105	105	105	0	0

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 46691G1a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The concentration of the sample was calculated for the compound identified below using the following calculation:

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 1, PCE

Conc. = $\frac{(5671)(50)(5\ mL)}{(467557)(0.5127)(5.32g)(0.91)(1000)}$

= 0.00127 mg/kg

#	Sample ID	Compound	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Qualification
	1	PCE	0.0012	0.0012	—

30th Street, Long Island City, Site No. C241214 - LDC# 49691G

SDG: 4602214411

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
B1 (5-10)-20201026	460-221441-1	1,3-DICHLOROBENZENE	10/28/2020		Y	N	U		U	0.0010	0.00038	mg/kg
B1 (5-10)-20201026	460-221441-1	DICHLORODIFLUOROMETHANE	10/28/2020		Y	N	U		U	0.0010	0.00035	mg/kg
B1 (5-10)-20201026	460-221441-1	DIBROMOCHLOROMETHANE	10/28/2020		Y	N	U		U	0.0010	0.00020	mg/kg
B1 (5-10)-20201026	460-221441-1	CYCLOHEXANE	10/28/2020		Y	N	U		U	0.0010	0.00023	mg/kg
B1 (5-10)-20201026	460-221441-1	CIS-1,3-DICHLOROPROPENE	10/28/2020		Y	N	U		U	0.0010	0.00028	mg/kg
B1 (5-10)-20201026	460-221441-1	Cis-1,2-Dichloroethylene	10/28/2020		Y	N	U		U	0.0010	0.00037	mg/kg
B1 (5-10)-20201026	460-221441-1	CHLOROMETHANE	10/28/2020		Y	N	U		U	0.0010	0.00045	mg/kg
B1 (5-10)-20201026	460-221441-1	CHLOROFORM	10/28/2020		Y	N	U		U	0.0010	0.0010	mg/kg
B1 (5-10)-20201026	460-221441-1	CARBON TETRACHLORIDE	10/28/2020		Y	N	U		U	0.0010	0.00040	mg/kg
B1 (5-10)-20201026	460-221441-1	BROMOFORM	10/28/2020		Y	N	U		U	0.0010	0.00044	mg/kg
B1 (5-10)-20201026	460-221441-1	BROMOCHLOROMETHANE	10/28/2020		Y	N	U		U	0.0010	0.00029	mg/kg
B1 (5-10)-20201026	460-221441-1	BENZENE	10/28/2020		Y	N	U		U	0.0010	0.00027	mg/kg
B1 (5-10)-20201026	460-221441-1	ACETONE	10/28/2020		Y	N	U		U	0.0062	0.0059	mg/kg
B1 (5-10)-20201026	460-221441-1	ETHYLBENZENE	10/28/2020		Y	N	U		U	0.0010	0.00021	mg/kg
B1 (5-10)-20201026	460-221441-1	1,4-DICHLOROBENZENE	10/28/2020		Y	N	U		U	0.0010	0.00023	mg/kg
B1 (5-10)-20201026	460-221441-1	CHLOROBENZENE	10/28/2020		Y	N	U		U	0.0010	0.00018	mg/kg
B1 (5-10)-20201026	460-221441-1	1,2-DICHLOROPROPANE	10/28/2020		Y	N	U		U	0.0010	0.00044	mg/kg
B1 (5-10)-20201026	460-221441-1	1,2-DICHLOROETHANE	10/28/2020		Y	N	U		U	0.0010	0.00031	mg/kg
B1 (5-10)-20201026	460-221441-1	1,2-DICHLOROBENZENE	10/28/2020		Y	N	U		U	0.0010	0.00037	mg/kg
B1 (5-10)-20201026	460-221441-1	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	10/28/2020		Y	N	U		U	0.0010	0.00019	mg/kg
B1 (5-10)-20201026	460-221441-1	1,2-DIBROMO-3-CHLOROPROPANE	10/28/2020		Y	N	U		U	0.0010	0.00047	mg/kg

SDG: 4602214411

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
B1 (5-10)-20201026	460-221441-1	1,2,4-TRICHLOROBENZENE	10/28/2020		Y	N	U		U	0.0010	0.00037	mg/kg
B1 (5-10)-20201026	460-221441-1	1,2,3-TRICHLOROBENZENE	10/28/2020		Y	N	U		U	0.0010	0.00019	mg/kg
B1 (5-10)-20201026	460-221441-1	1,1-DICHLOROETHENE	10/28/2020		Y	N	U		U	0.0010	0.00023	mg/kg
B1 (5-10)-20201026	460-221441-1	1,1-DICHLOROETHANE	10/28/2020		Y	N	U		U	0.0010	0.00021	mg/kg
B1 (5-10)-20201026	460-221441-1	1,1,2-TRICHLOROETHANE	10/28/2020		Y	N	U		U	0.0010	0.00018	mg/kg
B1 (5-10)-20201026	460-221441-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	10/28/2020		Y	N	U		U	0.0010	0.00031	mg/kg
B1 (5-10)-20201026	460-221441-1	1,1,2,2-TETRACHLOROETHANE	10/28/2020		Y	N	U		U	0.0010	0.00022	mg/kg
B1 (5-10)-20201026	460-221441-1	1,1,1-TRICHLOROETHANE	10/28/2020		Y	N	U		U	0.0010	0.00024	mg/kg
B1 (5-10)-20201026	460-221441-1	1,4-DIOXANE (P-DIOXANE)	10/28/2020		Y	N	U		U	0.021	0.0095	mg/kg
B1 (5-10)-20201026	460-221441-1	TOLUENE	10/28/2020		Y	N	U		U	0.0010	0.00024	mg/kg
B1 (5-10)-20201026	460-221441-1	CARBON DISULFIDE	10/28/2020		Y	N	U		U	0.0010	0.00027	mg/kg
B1 (5-10)-20201026	460-221441-1	CHLOROETHANE	10/28/2020		Y	N	UT	UJ	UJ	0.0010	0.00054	mg/kg
B1 (5-10)-20201026	460-221441-1	BROMOMETHANE	10/28/2020		Y	N	UT	UJ	UJ	0.0010	0.0010	mg/kg
B1 (5-10)-20201026	460-221441-1	VINYL CHLORIDE	10/28/2020		Y	N	U		U	0.0010	0.00056	mg/kg
B1 (5-10)-20201026	460-221441-1	BROMODICHLOROMETHANE	10/28/2020		Y	N	UT	UJ	UJ	0.0010	0.00027	mg/kg
B1 (5-10)-20201026	460-221441-1	TETRACHLOROETHYLENE(PCE)	10/28/2020	0.0012	Y	Y				0.0010	0.00031	mg/kg
B1 (5-10)-20201026	460-221441-1	2-HEXANONE	10/28/2020		Y	N	UT		U	0.0052	0.0018	mg/kg
B1 (5-10)-20201026	460-221441-1	TRICHLOROETHYLENE (TCE)	10/28/2020		Y	N	UT		U	0.0010	0.00033	mg/kg
B1 (5-10)-20201026	460-221441-1	TRICHLOROFLUOROMETHANE	10/28/2020		Y	N	U		U	0.0010	0.00042	mg/kg
B1 (5-10)-20201026	460-221441-1	TRANS-1,3-DICHLOROPROPENE	10/28/2020		Y	N	U		U	0.0010	0.00027	mg/kg
B1 (5-10)-20201026	460-221441-1	Isopropylbenzene (Cumene)	10/28/2020		Y	N	U		U	0.0010	0.00029	mg/kg
B1 (5-10)-20201026	460-221441-1	TRANS-1,2-DICHLOROETHENE	10/28/2020		Y	N	U		U	0.0010	0.00025	mg/kg

SDG: 4602214411

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
B1 (5-10)-20201026	460-221441-1	TERT-BUTYL METHYL ETHER	10/28/2020		Y	N	U		U	0.0010	0.00053	mg/kg
B1 (5-10)-20201026	460-221441-1	STYRENE	10/28/2020		Y	N	U		U	0.0010	0.00029	mg/kg
B1 (5-10)-20201026	460-221441-1	O-XYLENE (1,2-DIMETHYLBENZENE)	10/28/2020		Y	N	U		U	0.0010	0.00020	mg/kg
B1 (5-10)-20201026	460-221441-1	METHYLENE CHLORIDE	10/28/2020		Y	N	U		U	0.0010	0.0012	mg/kg
B1 (5-10)-20201026	460-221441-1	METHYLCYCLOHEXANE	10/28/2020		Y	N	U		U	0.0010	0.00052	mg/kg
B1 (5-10)-20201026	460-221441-1	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	10/28/2020		Y	N	U		U	0.0052	0.0016	mg/kg
B1 (5-10)-20201026	460-221441-1	METHYL ETHYL KETONE (2-BUTANONE)	10/28/2020		Y	N	U		U	0.0052	0.00038	mg/kg
B1 (5-10)-20201026	460-221441-1	METHYL ACETATE	10/28/2020		Y	N	U		U	0.0052	0.0044	mg/kg
B1 (5-10)-20201026	460-221441-1	M,P-XYLENES	10/28/2020		Y	N	U		U	0.0010	0.00018	mg/kg
B2 (0-5)-20201026	460-221441-2	CHLOROBENZENE	10/28/2020		Y	N	U		U	0.00097	0.00017	mg/kg
B2 (0-5)-20201026	460-221441-2	Isopropylbenzene (Cumene)	10/28/2020		Y	N	U		U	0.00097	0.00028	mg/kg
B2 (0-5)-20201026	460-221441-2	ETHYLBENZENE	10/28/2020		Y	N	U		U	0.00097	0.00019	mg/kg
B2 (0-5)-20201026	460-221441-2	DICHLORODIFLUOROMETHANE	10/28/2020		Y	N	U		U	0.00097	0.00033	mg/kg
B2 (0-5)-20201026	460-221441-2	DIBROMOCHLOROMETHANE	10/28/2020		Y	N	U		U	0.00097	0.00019	mg/kg
B2 (0-5)-20201026	460-221441-2	CYCLOHEXANE	10/28/2020		Y	N	U		U	0.00097	0.00021	mg/kg
B2 (0-5)-20201026	460-221441-2	CIS-1,3-DICHLOROPROPENE	10/28/2020		Y	N	U		U	0.00097	0.00027	mg/kg
B2 (0-5)-20201026	460-221441-2	Cis-1,2-Dichloroethylene	10/28/2020		Y	N	U		U	0.00097	0.00035	mg/kg
B2 (0-5)-20201026	460-221441-2	M,P-XYLENES	10/28/2020		Y	N	U		U	0.00097	0.00017	mg/kg
B2 (0-5)-20201026	460-221441-2	CHLOROFORM	10/28/2020		Y	N	U		U	0.00097	0.00094	mg/kg
B2 (0-5)-20201026	460-221441-2	CARBON TETRACHLORIDE	10/28/2020		Y	N	U		U	0.00097	0.00038	mg/kg
B2 (0-5)-20201026	460-221441-2	CARBON DISULFIDE	10/28/2020		Y	N	U		U	0.00097	0.00026	mg/kg
B2 (0-5)-20201026	460-221441-2	CHLOROMETHANE	10/28/2020		Y	N	U		U	0.00097	0.00042	mg/kg

SDG: 4602214411

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
B2 (0-5)-20201026	460-221441-2	METHYL ACETATE	10/28/2020		Y	N	U		U	0.0049	0.0042	mg/kg
B2 (0-5)-20201026	460-221441-2	METHYL ETHYL KETONE (2-BUTANONE)	10/28/2020		Y	N	U		U	0.0049	0.00036	mg/kg
B2 (0-5)-20201026	460-221441-2	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	10/28/2020		Y	N	U		U	0.0049	0.0015	mg/kg
B2 (0-5)-20201026	460-221441-2	METHYLCYCLOHEXANE	10/28/2020		Y	N	U		U	0.00097	0.00049	mg/kg
B2 (0-5)-20201026	460-221441-2	BROMODICHLOROMETHANE	10/28/2020		Y	N	UT	UJ	UJ	0.00097	0.00025	mg/kg
B2 (0-5)-20201026	460-221441-2	BROMOMETHANE	10/28/2020		Y	N	UT	UJ	UJ	0.00097	0.00097	mg/kg
B2 (0-5)-20201026	460-221441-2	CHLOROETHANE	10/28/2020		Y	N	UT	UJ	UJ	0.00097	0.00051	mg/kg
B2 (0-5)-20201026	460-221441-2	TRICHLOROETHYLENE (TCE)	10/28/2020		Y	N	UT		U	0.00097	0.00031	mg/kg
B2 (0-5)-20201026	460-221441-2	TERT-BUTYL METHYL ETHER	10/28/2020		Y	N	U		U	0.00097	0.00050	mg/kg
B2 (0-5)-20201026	460-221441-2	STYRENE	10/28/2020		Y	N	U		U	0.00097	0.00027	mg/kg
B2 (0-5)-20201026	460-221441-2	O-XYLENE (1,2-DIMETHYLBENZENE)	10/28/2020		Y	N	U		U	0.00097	0.00019	mg/kg
B2 (0-5)-20201026	460-221441-2	METHYLENE CHLORIDE	10/28/2020		Y	N	U		U	0.00097	0.0011	mg/kg
B2 (0-5)-20201026	460-221441-2	BROMOFORM	10/28/2020		Y	N	U		U	0.00097	0.00041	mg/kg
B2 (0-5)-20201026	460-221441-2	1,4-DIOXANE (P-DIOXANE)	10/28/2020		Y	N	U		U	0.019	0.0089	mg/kg
B2 (0-5)-20201026	460-221441-2	2-HEXANONE	10/28/2020		Y	N	UT		U	0.0049	0.0017	mg/kg
B2 (0-5)-20201026	460-221441-2	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	10/28/2020		Y	N	U		U	0.00097	0.00029	mg/kg
B2 (0-5)-20201026	460-221441-2	BROMOCHLOROMETHANE	10/28/2020		Y	N	U		U	0.00097	0.00027	mg/kg
B2 (0-5)-20201026	460-221441-2	BENZENE	10/28/2020		Y	N	U		U	0.00097	0.00025	mg/kg
B2 (0-5)-20201026	460-221441-2	TETRACHLOROETHYLENE(PCE)	10/28/2020	0.0013	Y	Y				0.00097	0.00030	mg/kg
B2 (0-5)-20201026	460-221441-2	TRICHLOROFLUOROMETHANE	10/28/2020		Y	N	U		U	0.00097	0.00039	mg/kg
B2 (0-5)-20201026	460-221441-2	TRANS-1,3-DICHLOROPROPENE	10/28/2020		Y	N	U		U	0.00097	0.00026	mg/kg
B2 (0-5)-20201026	460-221441-2	TRANS-1,2-DICHLOROETHENE	10/28/2020		Y	N	U		U	0.00097	0.00024	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
B2 (0-5)-20201026	460-221441-2	TOLUENE	10/28/2020		Y	N	U		U	0.00097	0.00023	mg/kg
B2 (0-5)-20201026	460-221441-2	1,1,2,2-TETRACHLOROETHANE	10/28/2020		Y	N	U		U	0.00097	0.00021	mg/kg
B2 (0-5)-20201026	460-221441-2	VINYL CHLORIDE	10/28/2020		Y	N	U		U	0.00097	0.00053	mg/kg
B2 (0-5)-20201026	460-221441-2	1,1,2-TRICHLOROETHANE	10/28/2020		Y	N	U		U	0.00097	0.00017	mg/kg
B2 (0-5)-20201026	460-221441-2	1,1-DICHLOROETHANE	10/28/2020		Y	N	U		U	0.00097	0.00020	mg/kg
B2 (0-5)-20201026	460-221441-2	1,1-DICHLOROETHENE	10/28/2020		Y	N	U		U	0.00097	0.00022	mg/kg
B2 (0-5)-20201026	460-221441-2	1,2-DICHLOROPROPANE	10/28/2020		Y	N	U		U	0.00097	0.00041	mg/kg
B2 (0-5)-20201026	460-221441-2	ACETONE	10/28/2020		Y	N	U		U	0.0058	0.0056	mg/kg
B2 (0-5)-20201026	460-221441-2	1,1,1-TRICHLOROETHANE	10/28/2020		Y	N	U		U	0.00097	0.00023	mg/kg
B2 (0-5)-20201026	460-221441-2	1,2,3-TRICHLOROBENZENE	10/28/2020		Y	N	U		U	0.00097	0.00018	mg/kg
B2 (0-5)-20201026	460-221441-2	1,3-DICHLOROBENZENE	10/28/2020		Y	N	U		U	0.00097	0.00035	mg/kg
B2 (0-5)-20201026	460-221441-2	1,2-DICHLOROETHANE	10/28/2020		Y	N	U		U	0.00097	0.00029	mg/kg
B2 (0-5)-20201026	460-221441-2	1,2-DICHLOROBENZENE	10/28/2020		Y	N	U		U	0.00097	0.00035	mg/kg
B2 (0-5)-20201026	460-221441-2	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	10/28/2020		Y	N	U		U	0.00097	0.00018	mg/kg
B2 (0-5)-20201026	460-221441-2	1,2-DIBROMO-3-CHLOROPROPANE	10/28/2020		Y	N	U		U	0.00097	0.00045	mg/kg
B2 (0-5)-20201026	460-221441-2	1,2,4-TRICHLOROBENZENE	10/28/2020		Y	N	U		U	0.00097	0.00035	mg/kg
B2 (0-5)-20201026	460-221441-2	1,4-DICHLOROBENZENE	10/28/2020		Y	N	U		U	0.00097	0.00022	mg/kg
B3 (0-5)-20201026	460-221441-3	METHYL ACETATE	10/28/2020		Y	N	U		U	0.0053	0.0045	mg/kg
B3 (0-5)-20201026	460-221441-3	TERT-BUTYL METHYL ETHER	10/28/2020		Y	N	U		U	0.0011	0.00054	mg/kg
B3 (0-5)-20201026	460-221441-3	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	10/28/2020		Y	N	U		U	0.0053	0.0016	mg/kg
B3 (0-5)-20201026	460-221441-3	TRANS-1,2-DICHLOROETHENE	10/28/2020		Y	N	U		U	0.0011	0.00026	mg/kg
B3 (0-5)-20201026	460-221441-3	METHYL ETHYL KETONE (2-BUTANONE)	10/28/2020		Y	N	U		U	0.0053	0.00039	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
B3 (0-5)-20201026	460-221441-3	METHYLCYCLOHEXANE	10/28/2020		Y	N	U		U	0.0011	0.00053	mg/kg
B3 (0-5)-20201026	460-221441-3	METHYLENE CHLORIDE	10/28/2020		Y	N	U		U	0.0011	0.0012	mg/kg
B3 (0-5)-20201026	460-221441-3	TOLUENE	10/28/2020		Y	N	U		U	0.0011	0.00025	mg/kg
B3 (0-5)-20201026	460-221441-3	STYRENE	10/28/2020		Y	N	U		U	0.0011	0.00029	mg/kg
B3 (0-5)-20201026	460-221441-3	M,P-XYLENES	10/28/2020		Y	N	U		U	0.0011	0.00018	mg/kg
B3 (0-5)-20201026	460-221441-3	O-XYLENE (1,2-DIMETHYLBENZENE)	10/28/2020		Y	N	U		U	0.0011	0.00020	mg/kg
B3 (0-5)-20201026	460-221441-3	Isopropylbenzene (Cumene)	10/28/2020		Y	N	U		U	0.0011	0.00030	mg/kg
B3 (0-5)-20201026	460-221441-3	ETHYLBENZENE	10/28/2020		Y	N	U		U	0.0011	0.00021	mg/kg
B3 (0-5)-20201026	460-221441-3	DICHLORODIFLUOROMETHANE	10/28/2020		Y	N	U		U	0.0011	0.00036	mg/kg
B3 (0-5)-20201026	460-221441-3	DIBROMOCHLOROMETHANE	10/28/2020		Y	N	U		U	0.0011	0.00020	mg/kg
B3 (0-5)-20201026	460-221441-3	CYCLOHEXANE	10/28/2020		Y	N	U		U	0.0011	0.00023	mg/kg
B3 (0-5)-20201026	460-221441-3	CIS-1,3-DICHLOROPROPENE	10/28/2020		Y	N	U		U	0.0011	0.00029	mg/kg
B3 (0-5)-20201026	460-221441-3	Cis-1,2-Dichloroethylene	10/28/2020		Y	N	U		U	0.0011	0.00038	mg/kg
B3 (0-5)-20201026	460-221441-3	CHLOROMETHANE	10/28/2020		Y	N	U		U	0.0011	0.00046	mg/kg
B3 (0-5)-20201026	460-221441-3	TRANS-1,3-DICHLOROPROPENE	10/28/2020		Y	N	U		U	0.0011	0.00028	mg/kg
B3 (0-5)-20201026	460-221441-3	CHLOROBENZENE	10/28/2020		Y	N	U		U	0.0011	0.00019	mg/kg
B3 (0-5)-20201026	460-221441-3	1,1,2-TRICHLOROETHANE	10/28/2020		Y	N	U		U	0.0011	0.00019	mg/kg
B3 (0-5)-20201026	460-221441-3	CARBON TETRACHLORIDE	10/28/2020		Y	N	U		U	0.0011	0.00041	mg/kg
B3 (0-5)-20201026	460-221441-3	CARBON DISULFIDE	10/28/2020		Y	N	U		U	0.0011	0.00028	mg/kg
B3 (0-5)-20201026	460-221441-3	BROMOFORM	10/28/2020		Y	N	U		U	0.0011	0.00045	mg/kg
B3 (0-5)-20201026	460-221441-3	CHLOROFORM	10/28/2020		Y	N	U		U	0.0011	0.0010	mg/kg
B3 (0-5)-20201026	460-221441-3	1,1,2,2-TETRACHLOROETHANE	10/28/2020		Y	N	U		U	0.0011	0.00023	mg/kg
B3 (0-5)-20201026	460-221441-3	BROMOCHLOROMETHANE	10/28/2020		Y	N	U		U	0.0011	0.00030	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
B3 (0-5)-20201026	460-221441-3	TETRACHLOROETHYLENE(PCE)	10/28/2020	0.0030	Y	Y				0.0011	0.00032	mg/kg
B3 (0-5)-20201026	460-221441-3	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	10/28/2020		Y	N	U		U	0.0011	0.00019	mg/kg
B3 (0-5)-20201026	460-221441-3	1,2-DICHLOROBENZENE	10/28/2020		Y	N	U		U	0.0011	0.00038	mg/kg
B3 (0-5)-20201026	460-221441-3	1,2-DICHLOROETHANE	10/28/2020		Y	N	U		U	0.0011	0.00031	mg/kg
B3 (0-5)-20201026	460-221441-3	1,2-DICHLOROPROPANE	10/28/2020		Y	N	U		U	0.0011	0.00045	mg/kg
B3 (0-5)-20201026	460-221441-3	TRICHLOROETHYLENE (TCE)	10/28/2020		Y	N	UT		U	0.0011	0.00034	mg/kg
B3 (0-5)-20201026	460-221441-3	CHLOROETHANE	10/28/2020		Y	N	UT	UJ	UJ	0.0011	0.00055	mg/kg
B3 (0-5)-20201026	460-221441-3	BROMOMETHANE	10/28/2020		Y	N	UT	UJ	UJ	0.0011	0.0011	mg/kg
B3 (0-5)-20201026	460-221441-3	BROMODICHLOROMETHANE	10/28/2020		Y	N	UT	UJ	UJ	0.0011	0.00027	mg/kg
B3 (0-5)-20201026	460-221441-3	1,1-DICHLOROETHENE	10/28/2020		Y	N	U		U	0.0011	0.00024	mg/kg
B3 (0-5)-20201026	460-221441-3	1,1,1-TRICHLOROETHANE	10/28/2020		Y	N	U		U	0.0011	0.00025	mg/kg
B3 (0-5)-20201026	460-221441-3	TRICHLOROFLUOROMETHANE	10/28/2020		Y	N	U		U	0.0011	0.00043	mg/kg
B3 (0-5)-20201026	460-221441-3	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	10/28/2020		Y	N	U		U	0.0011	0.00032	mg/kg
B3 (0-5)-20201026	460-221441-3	1,1-DICHLOROETHANE	10/28/2020		Y	N	U		U	0.0011	0.00022	mg/kg
B3 (0-5)-20201026	460-221441-3	1,2,3-TRICHLOROBENZENE	10/28/2020		Y	N	U		U	0.0011	0.00019	mg/kg
B3 (0-5)-20201026	460-221441-3	1,2,4-TRICHLOROBENZENE	10/28/2020		Y	N	U		U	0.0011	0.00038	mg/kg
B3 (0-5)-20201026	460-221441-3	1,2-DIBROMO-3-CHLOROPROPANE	10/28/2020		Y	N	U		U	0.0011	0.00048	mg/kg
B3 (0-5)-20201026	460-221441-3	1,3-DICHLOROBENZENE	10/28/2020		Y	N	U		U	0.0011	0.00038	mg/kg
B3 (0-5)-20201026	460-221441-3	1,4-DICHLOROBENZENE	10/28/2020		Y	N	U		U	0.0011	0.00024	mg/kg
B3 (0-5)-20201026	460-221441-3	1,4-DIOXANE (P-DIOXANE)	10/28/2020		Y	N	U		U	0.021	0.0097	mg/kg
B3 (0-5)-20201026	460-221441-3	ACETONE	10/28/2020		Y	N	U		U	0.0063	0.0060	mg/kg
B3 (0-5)-20201026	460-221441-3	BENZENE	10/28/2020		Y	N	U		U	0.0011	0.00027	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
B3 (0-5)-20201026	460-221441-3	VINYL CHLORIDE	10/28/2020		Y	N	U		U	0.0011	0.00057	mg/kg
B3 (0-5)-20201026	460-221441-3	2-HEXANONE	10/28/2020		Y	N	UT		U	0.0053	0.0018	mg/kg
A2 (10-15)-20201026	460-221441-4	1,1-DICHLOROETHENE	10/28/2020		Y	N	U		U	0.0011	0.00025	mg/kg
A2 (10-15)-20201026	460-221441-4	METHYLCYCLOHEXANE	10/28/2020		Y	N	U		U	0.0011	0.00055	mg/kg
A2 (10-15)-20201026	460-221441-4	CHLOROMETHANE	10/28/2020		Y	N	U		U	0.0011	0.00048	mg/kg
A2 (10-15)-20201026	460-221441-4	Cis-1,2-Dichloroethylene	10/28/2020		Y	N	U		U	0.0011	0.00039	mg/kg
A2 (10-15)-20201026	460-221441-4	CIS-1,3-DICHLOROPROPENE	10/28/2020		Y	N	U		U	0.0011	0.00030	mg/kg
A2 (10-15)-20201026	460-221441-4	CYCLOHEXANE	10/28/2020		Y	N	U		U	0.0011	0.00024	mg/kg
A2 (10-15)-20201026	460-221441-4	DIBROMOCHLOROMETHANE	10/28/2020		Y	N	U		U	0.0011	0.00021	mg/kg
A2 (10-15)-20201026	460-221441-4	DICHLORODIFLUOROMETHANE	10/28/2020		Y	N	U		U	0.0011	0.00037	mg/kg
A2 (10-15)-20201026	460-221441-4	ETHYLBENZENE	10/28/2020		Y	N	U		U	0.0011	0.00022	mg/kg
A2 (10-15)-20201026	460-221441-4	Isopropylbenzene (Cumene)	10/28/2020		Y	N	U		U	0.0011	0.00031	mg/kg
A2 (10-15)-20201026	460-221441-4	M,P-XYLENES	10/28/2020		Y	N	U		U	0.0011	0.00019	mg/kg
A2 (10-15)-20201026	460-221441-4	METHYL ACETATE	10/28/2020		Y	N	U		U	0.0055	0.0047	mg/kg
A2 (10-15)-20201026	460-221441-4	1,1,2-TRICHLOROETHANE	10/28/2020		Y	N	U		U	0.0011	0.00020	mg/kg
A2 (10-15)-20201026	460-221441-4	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	10/28/2020		Y	N	U		U	0.0055	0.0017	mg/kg
A2 (10-15)-20201026	460-221441-4	CARBON TETRACHLORIDE	10/28/2020		Y	N	U		U	0.0011	0.00042	mg/kg
A2 (10-15)-20201026	460-221441-4	METHYLENE CHLORIDE	10/28/2020		Y	N	U		U	0.0011	0.0013	mg/kg
A2 (10-15)-20201026	460-221441-4	O-XYLENE (1,2-DIMETHYLBENZENE)	10/28/2020		Y	N	U		U	0.0011	0.00021	mg/kg
A2 (10-15)-20201026	460-221441-4	STYRENE	10/28/2020		Y	N	U		U	0.0011	0.00031	mg/kg
A2 (10-15)-20201026	460-221441-4	TERT-BUTYL METHYL ETHER	10/28/2020		Y	N	U		U	0.0011	0.00056	mg/kg
A2 (10-15)-20201026	460-221441-4	TETRACHLOROETHYLENE(PCE)	10/28/2020		Y	N	U		U	0.0011	0.00033	mg/kg

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A2 (10-15)-20201026	460-221441-4	TOLUENE	10/28/2020		Y	N	U		U	0.0011	0.00026	mg/kg
A2 (10-15)-20201026	460-221441-4	TRANS-1,2-DICHLOROETHENE	10/28/2020		Y	N	U		U	0.0011	0.00027	mg/kg
A2 (10-15)-20201026	460-221441-4	TRANS-1,3-DICHLOROPROPENE	10/28/2020		Y	N	U		U	0.0011	0.00029	mg/kg
A2 (10-15)-20201026	460-221441-4	TRICHLOROFLUOROMETHANE	10/28/2020		Y	N	U		U	0.0011	0.00045	mg/kg
A2 (10-15)-20201026	460-221441-4	VINYL CHLORIDE	10/28/2020		Y	N	U		U	0.0011	0.00060	mg/kg
A2 (10-15)-20201026	460-221441-4	METHYL ETHYL KETONE (2-BUTANONE)	10/28/2020		Y	N	U		U	0.0055	0.00040	mg/kg
A2 (10-15)-20201026	460-221441-4	1,2-DICHLOROBENZENE	10/28/2020		Y	N	U		U	0.0011	0.00040	mg/kg
A2 (10-15)-20201026	460-221441-4	BROMODICHLOROMETHANE	10/28/2020		Y	N	UT	UJ	UJ	0.0011	0.00028	mg/kg
A2 (10-15)-20201026	460-221441-4	BROMOMETHANE	10/28/2020		Y	N	UT	UJ	UJ	0.0011	0.0011	mg/kg
A2 (10-15)-20201026	460-221441-4	CHLOROETHANE	10/28/2020		Y	N	UT	UJ	UJ	0.0011	0.00057	mg/kg
A2 (10-15)-20201026	460-221441-4	TRICHLOROETHYLENE (TCE)	10/28/2020		Y	N	UT		U	0.0011	0.00035	mg/kg
A2 (10-15)-20201026	460-221441-4	1,1,1-TRICHLOROETHANE	10/28/2020		Y	N	U		U	0.0011	0.00026	mg/kg
A2 (10-15)-20201026	460-221441-4	1,1,2,2-TETRACHLOROETHANE	10/28/2020		Y	N	U		U	0.0011	0.00023	mg/kg
A2 (10-15)-20201026	460-221441-4	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	10/28/2020		Y	N	U		U	0.0011	0.00033	mg/kg
A2 (10-15)-20201026	460-221441-4	1,1-DICHLOROETHANE	10/28/2020		Y	N	U		U	0.0011	0.00023	mg/kg
A2 (10-15)-20201026	460-221441-4	1,2,3-TRICHLOROBENZENE	10/28/2020		Y	N	U		U	0.0011	0.00020	mg/kg
A2 (10-15)-20201026	460-221441-4	1,2,4-TRICHLOROBENZENE	10/28/2020		Y	N	U		U	0.0011	0.00039	mg/kg
A2 (10-15)-20201026	460-221441-4	CHLOROFORM	10/28/2020		Y	N	U		U	0.0011	0.0011	mg/kg
A2 (10-15)-20201026	460-221441-4	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	10/28/2020		Y	N	U		U	0.0011	0.00020	mg/kg
A2 (10-15)-20201026	460-221441-4	CHLOROBENZENE	10/28/2020		Y	N	U		U	0.0011	0.00019	mg/kg
A2 (10-15)-20201026	460-221441-4	1,2-DICHLOROETHANE	10/28/2020		Y	N	U		U	0.0011	0.00033	mg/kg
A2 (10-15)-20201026	460-221441-4	1,2-DICHLOROPROPANE	10/28/2020		Y	N	U		U	0.0011	0.00046	mg/kg

SDG: 4602214411

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
A2 (10-15)-20201026	460-221441-4	1,3-DICHLOROBENZENE	10/28/2020		Y	N	U		U	0.0011	0.00040	mg/kg
A2 (10-15)-20201026	460-221441-4	1,4-DICHLOROBENZENE	10/28/2020		Y	N	U		U	0.0011	0.00025	mg/kg
A2 (10-15)-20201026	460-221441-4	1,4-DIOXANE (P-DIOXANE)	10/28/2020		Y	N	U		U	0.022	0.010	mg/kg
A2 (10-15)-20201026	460-221441-4	ACETONE	10/28/2020		Y	N	U		U	0.0066	0.0063	mg/kg
A2 (10-15)-20201026	460-221441-4	BENZENE	10/28/2020		Y	N	U		U	0.0011	0.00028	mg/kg
A2 (10-15)-20201026	460-221441-4	BROMOCHLOROMETHANE	10/28/2020		Y	N	U		U	0.0011	0.00031	mg/kg
A2 (10-15)-20201026	460-221441-4	BROMOFORM	10/28/2020		Y	N	U		U	0.0011	0.00047	mg/kg
A2 (10-15)-20201026	460-221441-4	CARBON DISULFIDE	10/28/2020		Y	N	U		U	0.0011	0.00029	mg/kg
A2 (10-15)-20201026	460-221441-4	2-HEXANONE	10/28/2020		Y	N	UT		U	0.0055	0.0019	mg/kg
A2 (10-15)-20201026	460-221441-4	1,2-DIBROMO-3-CHLOROPROPANE	10/28/2020		Y	N	U		U	0.0011	0.00051	mg/kg

Site:	Long Island City, 30th Street
Laboratory:	Eurofins
Report No.:	460-221502-1
Reviewer:	Josephine Go and Christina Rink/Laboratory Data Consultants for GEI Consultants, Inc. – Huntington Station, NY
Date:	December 1, 2020

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
B2 (5-10)	460-221502-1	VOC
B3 (5-10)	460-221502-2	VOC

Associated QC Samples(s):
Field/Trip Blanks: None Associated
Field Duplicate pair: None Associated

The above-listed soil samples were collected on October 27, 2020 and were analyzed for volatile organic compounds (VOCs) by SW-846 method 8260D. The data validation was performed in accordance with the USEPA Region 2 *Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-Method 8260B and 8260C,* SOP HW-24, Revision 4 (October 2014) and the USEPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,* EPA 540-R-2017-002 (January 2017), modified as necessary to accommodate the non-CLP methodologies used.

The organic data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) Tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Control Sample (LCS) Results
- Internal Standards
- Field Duplicate Results
- Moisture Content
- Quantitation Limits and Data Assessment
- Sample Quantitation and Compound Identification

Overall Evaluation of Data and Potential Usability Issues

All results are usable as reported or usable with minor qualification due to laboratory quality control outliers.

The validation findings were based on the following information.

Data Completeness

The data package was complete as defined under the requirements for the NYSDEC ASP category B laboratory deliverables.

Holding Times and Sample Preservation

All criteria were met.

GC/MS Tunes

All criteria were met.

Initial and Continuing Calibrations

Initial Calibration:

All criteria were met.

Continuing calibration:

Compounds that did not meet criteria are summarized in the following table.

Date	Standard ID	Compound	CC %D	Associated Samples		Validation Action
10/29/20	B65242	Trichlorofluoromethane	20.4	B2 (5-10) B3 (5-10)	XX	UJ nondetects

X = Initial calibration (IC) relative standard deviation (%RSD) > 20; estimate (J/UJ) positive and nondetect results.
XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ) positive and nondetect results.
SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.
+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The trichlorofluoromethane results were estimated due to continuing calibration exceedance. The bias cannot be determined. The results can be used for project objectives as nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Blanks

Contamination was not detected in the method blanks.

A field blank was not associated with this sample set. Validation action was not required on this basis.

Surrogate Recoveries

All criteria were met.

MS/MSD Results

MS/MSD analyses were not associated with this sample set. Validation action was not required on this basis.

LCS Results

All criteria were met.

Internal Standards

All criteria were met.

Field Duplicate Results

A field duplicate pair was not associated with this sample set. Validation action was not required on this basis.

Moisture Content

All criteria were met.

Quantitation Limits and Data Assessment

Results were reported which were below the reporting limit (RL) and above the method detection limit (MDL) in the VOC analysis. These results were qualified as estimated (J) by the laboratory.

Dilutions were not required for VOC analysis.

Sample Quantitation and Compound Identification

Calculations were spot-checked; no discrepancies were noted.

DATA VALIDATION QUALIFIERS

U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.

J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.

JN - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.

R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

LDC #: 49691H1a
SDG #: 460-221502-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Category B

Date: 11/30/20
Page: 1 of 1
Reviewer: SW
2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	ICAL ≤ 20% ICV ≤ 30%
IV.	Continuing calibration	SW	CCV ≤ 20%
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	A	LCS/D
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	Results < RL > MDL = J data
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	B2 (5-10)	460-221502-1	Soil	10/27/20
2	B3 (5-10)	460-221502-2	Soil	10/27/20
3				
4				
5				
6				
7				
8				
9				

Notes:

	LB3 460-735699/1-A						
	MB 460-735702/7						

LDC #: 49691 H1a

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG

Method: Volatiles (EPA SW 846 Method 8260C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20% and relative response factors (RRF) within method criteria?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 30%?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 20% and relative response factors (RRF) within method criteria?		✓		
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks were identified in this SDG?		✓		
Were target compounds detected in the field blanks?			✓	
VII. Surrogate spikes				
Were all surrogate percent recovery (%R) within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
X. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds detected in the field duplicates?			✓	
XI. Internal standards				
Were internal standard area counts within -50% to +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XII. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	AA. Tetrachloroethene	AAA. 1,3,5-Trimethylbenzene	AAAA. Ethyl tert-butyl ether	A1. 1,3-Butadiene	A2.
B. Bromomethane	BB. 1,1,2,2-Tetrachloroethane	BBB. 4-Chlorotoluene	BBBB. tert-Amyl methyl ether	B1. Hexane	B2.
C. Vinyl choride	CC. Toluene	CCC. tert-Butylbenzene	CCCC. 1-Chlorohexane	C1. Heptane	C2.
D. Chloroethane	DD. Chlorobenzene	DDD. 1,2,4-Trimethylbenzene	DDDD. Isopropyl alcohol	D1. Propylene	D2.
E. Methylene chloride	EE. Ethylbenzene	EEE. sec-Butylbenzene	EEEE. Acetonitrile	E1. Freon 11	E2.
F. Acetone	FF. Styrene	FFF. 1,3-Dichlorobenzene	FFFF. Acrolein	F1. Freon 12	F2.
G. Carbon disulfide	GG. Xylenes, total	GGG. p-Isopropyltoluene	GGGG. Acrylonitrile	G1. Freon 113	G2.
H. 1,1-Dichloroethene	HH. Vinyl acetate	HHH. 1,4-Dichlorobenzene	HHHH. 1,4-Dioxane	H1. Freon 114	H2.
I. 1,1-Dichloroethane	II. 2-Chloroethylvinyl ether	III. n-Butylbenzene	IIII. Isobutyl alcohol	I1. 2-Nitropropane	I2.
J. 1,2-Dichloroethene, total	JJ. Dichlorodifluoromethane	JJJ. 1,2-Dichlorobenzene	JJJJ. Methacrylonitrile	J1. Dimethyl disulfide	J2.
K. Chloroform	KK. Trichlorofluoromethane	KKK. 1,2,4-Trichlorobenzene	KKKK. Propionitrile	K1. 2,3-Dimethyl pentane	K2.
L. 1,2-Dichloroethane	LL. Methyl-tert-butyl ether	LLL. Hexachlorobutadiene	LLLL. Ethyl ether	L1. 2,4-Dimethyl pentane	L2.
M. 2-Butanone	MM. 1,2-Dibromo-3-chloropropane	MMM. Naphthalene	MMMM. Benzyl chloride	M1. 3,3-Dimethyl pentane	M2.
N. 1,1,1-Trichloroethane	NN. Methyl ethyl ketone	NNN. 1,2,3-Trichlorobenzene	NNNN. Iodomethane	N1. 2-Methylpentane	N2.
O. Carbon tetrachloride	OO. 2,2-Dichloropropane	OOO. 1,3,5-Trichlorobenzene	OOOO.1,1-Difluoroethane	O1. 3-Methylpentane	O2.
P. Bromodichloromethane	PP. Bromochloromethane	PPP. trans-1,2-Dichloroethene	PPPP. Tetrahydrofuran	P1. 3-Ethylpentane	P2.
Q. 1,2-Dichloropropane	QQ. 1,1-Dichloropropene	QQQ. cis-1,2-Dichloroethene	QQQQ. Methyl acetate	Q1. 2,2-Dimethylpentane	Q2.
R. cis-1,3-Dichloropropene	RR. Dibromomethane	RRR. m,p-Xylenes	RRRR. Ethyl acetate	R1. 2,2,3- Trimethylbutane	R2.
S. Trichloroethene	SS. 1,3-Dichloropropane	SSS. o-Xylene	SSSS. Cyclohexane	S1. 2,2,4-Trimethylpentane	S2.
T. Dibromochloromethane	TT. 1,2-Dibromoethane	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	TTTT. Methylcyclohexane	T1. 2-Methylhexane	T2.
U. 1,1,2-Trichloroethane	UU. 1,1,1,2-Tetrachloroethane	UUU. 1,2-Dichlorotetrafluoroethane	UUUU. Allyl chloride	U1. Nonanal	U2.
V. Benzene	VV. Isopropylbenzene	VVV. 4-Ethyltoluene	VVVV. Methyl methacrylate	V1. 2-Methylnaphthalene	V2.
W. trans-1,3-Dichloropropene	WW. Bromobenzene	WWW. Ethanol	WWWW. Ethyl methacrylate	W1. Methanol	W2.
X. Bromoform	XX. 1,2,3-Trichloropropane	XXX. Di-isopropyl ether	XXXX. cis-1,4-Dichloro-2-butene	X1. 1,2,3-Trimethylbenzene	X2.
Y. 4-Methyl-2-pentanone	YY. n-Propylbenzene	YYY. tert-Butanol	YYYY. trans-1,4-Dichloro-2-butene	Y1. 2-Propanol	Y2.
Z. 2-Hexanone	ZZ. 2-Chlorotoluene	ZZZ. tert-Butyl alcohol	ZZZZ. Pentachloroethane	Z1.	Z2.

LDC #: 49691H1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Y N N/A Were percent differences (%D) ≤20 % and relative response factors (RRF) within the method criteria?

#	Date	Standard ID	Compound	Finding %D (Limit: <20.0%)	Finding RRF (Limit)	Associated Samples	Qualifications
	10/29/20	B65292	1CK	20.4		All (ND)	J/NJ A

Note: * = Ave RRF failed method criteria but within validation criteria

LDC #: 49691H1a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

average RRF = sum of the RRFs/number of standards

%RSD = 100 * (S/X)

A_x = Area of Compound

C_x = Concentration of compound

S= Standard deviation of the RRFs

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 50 std)	Recalculated RRF (RRF 50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL CVOAMS2	10/15/2020	2-Butanone (BUT)	0.3717	0.3717	0.4022	0.4022	5.2	5.2
			cis-1,2-DCE (FBZ)	0.4071	0.4071	0.4136	0.4137	7.1	7.1
			1,4-Dioxane (DXE)	1.6063	1.6063	1.4751	1.4751	18.6	18.6
			Tetrachloroethene (CBZ)	0.5483	0.5483	0.5409	0.5409	11.9	11.9
			1,4-DCB (DCB)	1.8936	1.8936	1.9749	1.9749	5.8	5.8

LDC # 49691H1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CCV)	Recalculated RRF (CCV)	Reported % D	Recalculated %D
1	B65242	10/29/2020	2-Butanone (BUT)	0.4022	0.3874	0.3874	3.7	3.7
			cis-1,2-DCE (FBZ)	0.4136	0.4121	0.4121	0.4	0.4
			1,4-Dioxane (DXE)	1.4751	1.5270	1.5270	3.5	3.5
			Tetrachloroethene (CBZ)	0.5409	0.5668	0.5668	4.8	4.8
			1,4-DCB (DCB)	1.9749	1.8260	1.8260	7.5	7.5

LDC #: 49691 H1a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	50.0	59.5	119	119	0
1,2-Dichloroethane-d4		59.8	120	120	
Toluene-d8		47.1	94	94	
Bromofluorobenzene		52.5	105	105	

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 49691H1a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration; SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: LCS D460-73502/3,4

Compound	Spike Added (mg/kg)		Spiked Sample Concentration (mg/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
1,1-Dichloroethene	0.0200	0.0200	0.0219	0.0237	110	110	118	118	8	8
Trichloroethene			0.0191	0.0219	96	96	110	110	14	14
Benzene			0.0178	0.0189	89	89	94	94	6	6
Toluene			0.0184	0.0198	92	92	99	99	7	7
Chlorobenzene	↓	↓	0.0192	0.0207	96	96	103	103	7	7

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 49691 B1a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The concentration of the sample was calculated for the compound identified below using the following calculation:

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 1, PCE

Conc. = $\frac{(2496)(50)(5\,mL)}{(355655)(0.5409)(5.47g)(0.941)(1000)}$

= 0.00063 mg/kg

#	Sample ID	Compound	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Qualification
	1	PCE	0.00063	0.00063	-

30th Street, Long Island City, Site No. C241214 - LDC# 49691H

SDG: 4602215021

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
B-2 (5-10)-20201027	460-221502-1	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	10/29/2020		Y	N	U		U	0.0049	0.0015	mg/kg
B-2 (5-10)-20201027	460-221502-1	TRICHLOROFLUOROMETHANE	10/29/2020		Y	N	U	UJ	UJ	0.00097	0.00039	mg/kg
B-2 (5-10)-20201027	460-221502-1	CHLOROMETHANE	10/29/2020		Y	N	U		U	0.00097	0.00042	mg/kg
B-2 (5-10)-20201027	460-221502-1	Cis-1,2-Dichloroethylene	10/29/2020		Y	N	U		U	0.00097	0.00035	mg/kg
B-2 (5-10)-20201027	460-221502-1	CIS-1,3-DICHLOROPROPENE	10/29/2020		Y	N	U		U	0.00097	0.00027	mg/kg
B-2 (5-10)-20201027	460-221502-1	CYCLOHEXANE	10/29/2020		Y	N	U		U	0.00097	0.00021	mg/kg
B-2 (5-10)-20201027	460-221502-1	DIBROMOCHLOROMETHANE	10/29/2020		Y	N	U		U	0.00097	0.00019	mg/kg
B-2 (5-10)-20201027	460-221502-1	DICHLORODIFLUOROMETHANE	10/29/2020		Y	N	U		U	0.00097	0.00033	mg/kg
B-2 (5-10)-20201027	460-221502-1	ETHYLBENZENE	10/29/2020		Y	N	U		U	0.00097	0.00019	mg/kg
B-2 (5-10)-20201027	460-221502-1	Isopropylbenzene (Cumene)	10/29/2020		Y	N	U		U	0.00097	0.00028	mg/kg
B-2 (5-10)-20201027	460-221502-1	M,P-XYLENES	10/29/2020		Y	N	U		U	0.00097	0.00017	mg/kg
B-2 (5-10)-20201027	460-221502-1	CHLOROETHANE	10/29/2020		Y	N	U		U	0.00097	0.00051	mg/kg
B-2 (5-10)-20201027	460-221502-1	METHYL ETHYL KETONE (2-BUTANONE)	10/29/2020		Y	N	U		U	0.0049	0.00036	mg/kg
B-2 (5-10)-20201027	460-221502-1	CHLOROBENZENE	10/29/2020		Y	N	U		U	0.00097	0.00017	mg/kg
B-2 (5-10)-20201027	460-221502-1	METHYLCYCLOHEXANE	10/29/2020		Y	N	U		U	0.00097	0.00048	mg/kg
B-2 (5-10)-20201027	460-221502-1	METHYLENE CHLORIDE	10/29/2020		Y	N	U		U	0.00097	0.0011	mg/kg
B-2 (5-10)-20201027	460-221502-1	O-XYLENE (1,2-DIMETHYLBENZENE)	10/29/2020		Y	N	U		U	0.00097	0.00019	mg/kg
B-2 (5-10)-20201027	460-221502-1	STYRENE	10/29/2020		Y	N	U		U	0.00097	0.00027	mg/kg
B-2 (5-10)-20201027	460-221502-1	TERT-BUTYL METHYL ETHER	10/29/2020		Y	N	U		U	0.00097	0.00050	mg/kg
B-2 (5-10)-20201027	460-221502-1	TETRACHLOROETHYLENE(PCE)	10/29/2020	0.00063	Y	Y	J		J	0.00097	0.00030	mg/kg
B-2 (5-10)-20201027	460-221502-1	TOLUENE	10/29/2020		Y	N	U		U	0.00097	0.00023	mg/kg

SDG: 4602215021

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
B-2 (5-10)-20201027	460-221502-1	TRANS-1,2-DICHLOROETHENE	10/29/2020		Y	N	U		U	0.00097	0.00024	mg/kg
B-2 (5-10)-20201027	460-221502-1	TRANS-1,3-DICHLOROPROPENE	10/29/2020		Y	N	U		U	0.00097	0.00026	mg/kg
B-2 (5-10)-20201027	460-221502-1	TRICHLOROETHYLENE (TCE)	10/29/2020		Y	N	U		U	0.00097	0.00031	mg/kg
B-2 (5-10)-20201027	460-221502-1	1,1,1-TRICHLOROETHANE	10/29/2020		Y	N	U		U	0.00097	0.00023	mg/kg
B-2 (5-10)-20201027	460-221502-1	METHYL ACETATE	10/29/2020		Y	N	U		U	0.0049	0.0042	mg/kg
B-2 (5-10)-20201027	460-221502-1	1,3-DICHLOROBENZENE	10/29/2020		Y	N	U		U	0.00097	0.00035	mg/kg
B-2 (5-10)-20201027	460-221502-1	1,1,2,2-TETRACHLOROETHANE	10/29/2020		Y	N	U		U	0.00097	0.00021	mg/kg
B-2 (5-10)-20201027	460-221502-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	10/29/2020		Y	N	U		U	0.00097	0.00029	mg/kg
B-2 (5-10)-20201027	460-221502-1	1,1,2-TRICHLOROETHANE	10/29/2020		Y	N	U		U	0.00097	0.00017	mg/kg
B-2 (5-10)-20201027	460-221502-1	1,1-DICHLOROETHANE	10/29/2020		Y	N	U		U	0.00097	0.00020	mg/kg
B-2 (5-10)-20201027	460-221502-1	1,1-DICHLOROETHENE	10/29/2020		Y	N	U		U	0.00097	0.00022	mg/kg
B-2 (5-10)-20201027	460-221502-1	1,2,3-TRICHLOROBENZENE	10/29/2020		Y	N	U		U	0.00097	0.00018	mg/kg
B-2 (5-10)-20201027	460-221502-1	1,2,4-TRICHLOROBENZENE	10/29/2020		Y	N	U		U	0.00097	0.00035	mg/kg
B-2 (5-10)-20201027	460-221502-1	1,2-DIBROMO-3-CHLOROPROPANE	10/29/2020		Y	N	U		U	0.00097	0.00045	mg/kg
B-2 (5-10)-20201027	460-221502-1	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	10/29/2020		Y	N	U		U	0.00097	0.00017	mg/kg
B-2 (5-10)-20201027	460-221502-1	1,2-DICHLOROBENZENE	10/29/2020		Y	N	U		U	0.00097	0.00035	mg/kg
B-2 (5-10)-20201027	460-221502-1	CHLOROFORM	10/29/2020		Y	N	U		U	0.00097	0.00094	mg/kg
B-2 (5-10)-20201027	460-221502-1	1,2-DICHLOROPROPANE	10/29/2020		Y	N	U		U	0.00097	0.00041	mg/kg
B-2 (5-10)-20201027	460-221502-1	VINYL CHLORIDE	10/29/2020		Y	N	U		U	0.00097	0.00053	mg/kg
B-2 (5-10)-20201027	460-221502-1	1,4-DICHLOROBENZENE	10/29/2020		Y	N	U		U	0.00097	0.00022	mg/kg
B-2 (5-10)-20201027	460-221502-1	1,4-DIOXANE (P-DIOXANE)	10/29/2020		Y	N	U		U	0.019	0.0089	mg/kg
B-2 (5-10)-20201027	460-221502-1	2-HEXANONE	10/29/2020		Y	N	U		U	0.0049	0.0017	mg/kg

SDG: 4602215021

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
B-2 (5-10)-20201027	460-221502-1	ACETONE	10/29/2020	0.017	Y	Y				0.0058	0.0056	mg/kg
B-2 (5-10)-20201027	460-221502-1	BENZENE	10/29/2020		Y	N	U		U	0.00097	0.00025	mg/kg
B-2 (5-10)-20201027	460-221502-1	BROMOCHLOROMETHANE	10/29/2020		Y	N	U		U	0.00097	0.00027	mg/kg
B-2 (5-10)-20201027	460-221502-1	BROMODICHLOROMETHANE	10/29/2020		Y	N	U		U	0.00097	0.00025	mg/kg
B-2 (5-10)-20201027	460-221502-1	BROMOFORM	10/29/2020		Y	N	U		U	0.00097	0.00041	mg/kg
B-2 (5-10)-20201027	460-221502-1	BROMOMETHANE	10/29/2020		Y	N	U		U	0.00097	0.00097	mg/kg
B-2 (5-10)-20201027	460-221502-1	CARBON DISULFIDE	10/29/2020		Y	N	U		U	0.00097	0.00026	mg/kg
B-2 (5-10)-20201027	460-221502-1	CARBON TETRACHLORIDE	10/29/2020		Y	N	U		U	0.00097	0.00038	mg/kg
B-2 (5-10)-20201027	460-221502-1	1,2-DICHLOROETHANE	10/29/2020		Y	N	U		U	0.00097	0.00029	mg/kg
B-3 (5-10)-20201027	460-221502-2	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	10/29/2020		Y	N	U		U	0.0059	0.0018	mg/kg
B-3 (5-10)-20201027	460-221502-2	1,1,1-TRICHLOROETHANE	10/29/2020		Y	N	U		U	0.0012	0.00027	mg/kg
B-3 (5-10)-20201027	460-221502-2	CHLOROMETHANE	10/29/2020		Y	N	U		U	0.0012	0.00051	mg/kg
B-3 (5-10)-20201027	460-221502-2	Cis-1,2-Dichloroethylene	10/29/2020		Y	N	U		U	0.0012	0.00042	mg/kg
B-3 (5-10)-20201027	460-221502-2	CIS-1,3-DICHLOROPROPENE	10/29/2020		Y	N	U		U	0.0012	0.00032	mg/kg
B-3 (5-10)-20201027	460-221502-2	CYCLOHEXANE	10/29/2020		Y	N	U		U	0.0012	0.00026	mg/kg
B-3 (5-10)-20201027	460-221502-2	DIBROMOCHLOROMETHANE	10/29/2020		Y	N	U		U	0.0012	0.00023	mg/kg
B-3 (5-10)-20201027	460-221502-2	DICHLORODIFLUOROMETHANE	10/29/2020		Y	N	U		U	0.0012	0.00040	mg/kg
B-3 (5-10)-20201027	460-221502-2	ETHYLBENZENE	10/29/2020		Y	N	U		U	0.0012	0.00023	mg/kg
B-3 (5-10)-20201027	460-221502-2	Isopropylbenzene (Cumene)	10/29/2020		Y	N	U		U	0.0012	0.00034	mg/kg
B-3 (5-10)-20201027	460-221502-2	M,P-XYLENES	10/29/2020		Y	N	U		U	0.0012	0.00020	mg/kg
B-3 (5-10)-20201027	460-221502-2	CHLOROETHANE	10/29/2020		Y	N	U		U	0.0012	0.00061	mg/kg
B-3 (5-10)-20201027	460-221502-2	METHYL ETHYL KETONE (2-BUTANONE)	10/29/2020		Y	N	U		U	0.0059	0.00043	mg/kg

SDG: 4602215021

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
B-3 (5-10)-20201027	460-221502-2	CHLOROBENZENE	10/29/2020		Y	N	U		U	0.0012	0.00021	mg/kg
B-3 (5-10)-20201027	460-221502-2	METHYLCYCLOHEXANE	10/29/2020		Y	N	U		U	0.0012	0.00059	mg/kg
B-3 (5-10)-20201027	460-221502-2	METHYLENE CHLORIDE	10/29/2020		Y	N	U		U	0.0012	0.0013	mg/kg
B-3 (5-10)-20201027	460-221502-2	O-XYLENE (1,2-DIMETHYLBENZENE)	10/29/2020		Y	N	U		U	0.0012	0.00023	mg/kg
B-3 (5-10)-20201027	460-221502-2	STYRENE	10/29/2020		Y	N	U		U	0.0012	0.00033	mg/kg
B-3 (5-10)-20201027	460-221502-2	TERT-BUTYL METHYL ETHER	10/29/2020		Y	N	U		U	0.0012	0.00060	mg/kg
B-3 (5-10)-20201027	460-221502-2	TETRACHLOROETHYLENE(PCE)	10/29/2020	0.00047	Y	Y	J		J	0.0012	0.00036	mg/kg
B-3 (5-10)-20201027	460-221502-2	TOLUENE	10/29/2020		Y	N	U		U	0.0012	0.00028	mg/kg
B-3 (5-10)-20201027	460-221502-2	TRANS-1,2-DICHLOROETHENE	10/29/2020		Y	N	U		U	0.0012	0.00029	mg/kg
B-3 (5-10)-20201027	460-221502-2	TRANS-1,3-DICHLOROPROPENE	10/29/2020		Y	N	U		U	0.0012	0.00031	mg/kg
B-3 (5-10)-20201027	460-221502-2	TRICHLOROETHYLENE (TCE)	10/29/2020		Y	N	U		U	0.0012	0.00038	mg/kg
B-3 (5-10)-20201027	460-221502-2	TRICHLOROFLUOROMETHANE	10/29/2020		Y	N	U	UJ	UJ	0.0012	0.00048	mg/kg
B-3 (5-10)-20201027	460-221502-2	METHYL ACETATE	10/29/2020		Y	N	U		U	0.0059	0.0051	mg/kg
B-3 (5-10)-20201027	460-221502-2	1,3-DICHLOROBENZENE	10/29/2020		Y	N	U		U	0.0012	0.00043	mg/kg
B-3 (5-10)-20201027	460-221502-2	1,1,2,2-TETRACHLOROETHANE	10/29/2020		Y	N	U		U	0.0012	0.00025	mg/kg
B-3 (5-10)-20201027	460-221502-2	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	10/29/2020		Y	N	U		U	0.0012	0.00035	mg/kg
B-3 (5-10)-20201027	460-221502-2	1,1,2-TRICHLOROETHANE	10/29/2020		Y	N	U		U	0.0012	0.00021	mg/kg
B-3 (5-10)-20201027	460-221502-2	1,1-DICHLOROETHANE	10/29/2020		Y	N	U		U	0.0012	0.00024	mg/kg
B-3 (5-10)-20201027	460-221502-2	1,1-DICHLOROETHENE	10/29/2020		Y	N	U		U	0.0012	0.00026	mg/kg
B-3 (5-10)-20201027	460-221502-2	1,2,3-TRICHLOROBENZENE	10/29/2020		Y	N	U		U	0.0012	0.00021	mg/kg
B-3 (5-10)-20201027	460-221502-2	1,2,4-TRICHLOROBENZENE	10/29/2020		Y	N	U		U	0.0012	0.00042	mg/kg
B-3 (5-10)-20201027	460-221502-2	1,2-DIBROMO-3-CHLOROPROPANE	10/29/2020		Y	N	U		U	0.0012	0.00054	mg/kg

SDG: 4602215021

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
B-3 (5-10)-20201027	460-221502-2	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	10/29/2020		Y	N	U		U	0.0012	0.00021	mg/kg
B-3 (5-10)-20201027	460-221502-2	1,2-DICHLOROBENZENE	10/29/2020		Y	N	U		U	0.0012	0.00042	mg/kg
B-3 (5-10)-20201027	460-221502-2	CHLOROFORM	10/29/2020		Y	N	U		U	0.0012	0.0011	mg/kg
B-3 (5-10)-20201027	460-221502-2	1,2-DICHLOROPROPANE	10/29/2020		Y	N	U		U	0.0012	0.00050	mg/kg
B-3 (5-10)-20201027	460-221502-2	VINYL CHLORIDE	10/29/2020		Y	N	U		U	0.0012	0.00064	mg/kg
B-3 (5-10)-20201027	460-221502-2	1,4-DICHLOROBENZENE	10/29/2020		Y	N	U		U	0.0012	0.00026	mg/kg
B-3 (5-10)-20201027	460-221502-2	1,4-DIOXANE (P-DIOXANE)	10/29/2020		Y	N	U		U	0.024	0.011	mg/kg
B-3 (5-10)-20201027	460-221502-2	2-HEXANONE	10/29/2020		Y	N	U		U	0.0059	0.0020	mg/kg
B-3 (5-10)-20201027	460-221502-2	ACETONE	10/29/2020	0.0074	Y	Y				0.0071	0.0067	mg/kg
B-3 (5-10)-20201027	460-221502-2	BENZENE	10/29/2020		Y	N	U		U	0.0012	0.00030	mg/kg
B-3 (5-10)-20201027	460-221502-2	BROMOCHLOROMETHANE	10/29/2020		Y	N	U		U	0.0012	0.00033	mg/kg
B-3 (5-10)-20201027	460-221502-2	BROMODICHLOROMETHANE	10/29/2020		Y	N	U		U	0.0012	0.00030	mg/kg
B-3 (5-10)-20201027	460-221502-2	BROMOFORM	10/29/2020		Y	N	U		U	0.0012	0.00050	mg/kg
B-3 (5-10)-20201027	460-221502-2	BROMOMETHANE	10/29/2020		Y	N	U		U	0.0012	0.0012	mg/kg
B-3 (5-10)-20201027	460-221502-2	CARBON DISULFIDE	10/29/2020		Y	N	U		U	0.0012	0.00031	mg/kg
B-3 (5-10)-20201027	460-221502-2	CARBON TETRACHLORIDE	10/29/2020		Y	N	U		U	0.0012	0.00046	mg/kg
B-3 (5-10)-20201027	460-221502-2	1,2-DICHLOROETHANE	10/29/2020		Y	N	U		U	0.0012	0.00035	mg/kg

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

GEI Consultants
110 Walt Whitman Road, Suite 204
Huntington Station, NY 11746
ATTN: Mr. Bill Fitchett
Wfitchett@geiconsultants.com

December 24, 2020

SUBJECT: Long Island City, 30th Street, Data Usability Summary Report.

Dear Mr. Fitchett,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on December 4, 2020. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #49880:

SDG #	Fraction
460-223176-1, 460-22276-1 460-223175-1	Volatiles, Polynuclear Aromatic Hydrocarbons, Extractable Petroleum Hydrocarbons

The data validation was performed under modified Category B guidelines using quality control summaries provided by the laboratory. The analyses were validated using the following documents, as applicable to each method:

- USEPA Region 2 Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-Method 8260B and 8260C, SOP HW-24, Revision 4; October 2014
- USEPA Region 2 Standard Operating Procedure for Semivolatile Data Validation SW-846 Method 8270D, SOP HW-35A, Revision 0; June 2015
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, EPA 540-R-2017-002; January 2017
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Christina Rink

Christina Rink
crink@lab-data.com
Project Manager/Senior Chemist

109 pages-ADV EQUIS EDD/ NYDUSR

Attachment 1

Category B **LDC #49880 (GEI Consultants, Inc. - Huntington Station, NY / 30th Street, Long Island City, Site No. C241214)**

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260D)		SVOA (8270E)		EPH NJ-DEP)																													
Matrix: Water/Soil				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	460-223176-1	12/04/20	12/28/20	0	2	-	-	-	-																												
B	460-222776-1	12/04/20	12/28/20	1	2	-	-	-	-																												
C	460-223175-1	12/04/20	12/28/20	0	4	0	4	0	1																												
Total	T/CR			1	8	0	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14

Shaded cells indicate Category B validation (all other cells are Category A validation). These sample counts do not include MS/MSD, and DUPs

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Site: Long Island City, 30th Street
Laboratory: Eurofins
Report No.: 460-223176-1
Reviewer: Josephine Go and Christina Rink/Laboratory Data Consultants for GEI Consultants, Inc. – Huntington Station, NY
Date: December 22, 2020

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
A-4 (5-10)	460-223176-1	VOC
A-4 (10-15)	460-223176-2	VOC

Associated QC Samples(s):
Field/Trip Blanks: None Associated
Field Duplicate pair: None Associated

The above-listed soil samples were collected on November 19, 2020 and were analyzed for volatile organic compounds (VOCs) by SW-846 method 8260C. The data validation was performed in accordance with the USEPA Region 2 *Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-Method 8260B and 8260C,* SOP HW-24, Revision 4 (October 2014) and the USEPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,* EPA 540-R-2017-002 (January 2017), modified as necessary to accommodate the non-CLP methodologies used.

The organic data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) Tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Control Sample (LCS) Results
- Internal Standards
- Field Duplicate Results
- Moisture Content
- Quantitation Limits and Data Assessment
- Sample Quantitation and Compound Identification

Overall Evaluation of Data and Potential Usability Issues

All results are usable as reported or usable with minor qualification due to laboratory quality control outliers.

The validation findings were based on the following information.

Data Completeness

The data package was complete as defined under the requirements for the NYSDEC ASP category B laboratory deliverables.

Holding Times and Sample Preservation

All criteria were met.

GC/MS Tunes

All criteria were met.

Initial and Continuing Calibrations

Initial Calibration:

All criteria were met.

Continuing calibration:

Compounds that did not meet criteria are summarized in the following table.

Date	Standard ID	Compound	CC %D	Associated Samples		Validation Action
11/24/20	B66207	Bromomethane	20.2	A-4 (5-10)	XX	UJ nondetects
		1,1-Dichloroethene	22.1	A-4 (10-15)	XX	UJ nondetects
		1,1,2-Trichloro-1,2,2-trifluoroethane	23.3		XX	UJ nondetects
		2-Butanone	22.5		XX	UJ nondetects
		Carbon tetrachloride	21.2		XX	UJ nondetects
		1,2-Dibromo-3-chloropropane	30.3		XX	UJ nondetects
		1,2,4-Trichlorobenzene	21.7		XX	UJ nondetects

X = Initial calibration (IC) relative standard deviation (%RSD) > 20; estimate (J/UJ) positive and nondetect results.
XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ) positive and nondetect results.
SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.
+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The bromomethane, 1,1-dichloroethene, 1,1,2-trichloro-1,2,2-trifluoroethane, 2-butanone, carbon tetrachloride, 1,2-dibromo-3-chloropropane, and 1,2,4-trichlorobenzene results were estimated due to continuing calibration exceedances. The bias cannot be determined. The results can be used for project objectives as nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Blanks

Contamination was not detected in the method blanks.

A field blank was not associated with this sample set. Validation action was not required on this basis.

Surrogate Recoveries

All criteria were met.

MS/MSD Results

MS/MSD analyses were not associated with this sample set. Validation action was not required on this basis.

LCS Results

All criteria were met.

Internal Standards

All criteria were met.

Field Duplicate Results

A field duplicate pair was not associated with this sample set. Validation action was not required on this basis.

Moisture Content

All criteria were met.

Quantitation Limits and Data Assessment

Results were reported which were below the reporting limit (RL) and above the method detection limit (MDL) in the VOC analysis. These results were qualified as estimated (J) by the laboratory.

Dilutions were not required for VOC analysis.

Sample Quantitation and Compound Identification

Calculations were spot-checked; no discrepancies were noted.

DATA VALIDATION QUALIFIERS

U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.

J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.

JN - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.

R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

LDC #: 49880A1a
SDG #: 460-223176-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Category B

Date: 12/21/20
Page: 1 of 1
Reviewer: SM
2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	ICAL ≤ 20% ICV ≤ 30%
IV.	Continuing calibration	SW	CCV ≤ 20%
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	A	LCS/D
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	Result < RL > MDL = J dets
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	A-4 (5-10)	460-223176-1	Soil	11/19/20
2	A-4 (10-15)	460-223176-2	Soil	11/19/20
3				
4				
5				
6				
7				
8				
9				

Notes:

	MB 460-742227/4						
	LBS 460-741513/1-A						

LDC #: 49880A1a

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG

Method: Volatiles (EPA SW 846 Method 8260C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20% and relative response factors (RRF) within method criteria?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 30%?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 20% and relative response factors (RRF) within method criteria?		✓		
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks were identified in this SDG?		✓		
Were target compounds detected in the field blanks?			✓	
VII. Surrogate spikes				
Were all surrogate percent recovery (%R) within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
X. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds detected in the field duplicates?			✓	
XI. Internal standards				
Were internal standard area counts within -50% to +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XII. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	AA. Tetrachloroethene	AAA. 1,3,5-Trimethylbenzene	AAAA. Ethyl tert-butyl ether	A1. 1,3-Butadiene	A2.
B. Bromomethane	BB. 1,1,2,2-Tetrachloroethane	BBB. 4-Chlorotoluene	BBBB. tert-Amyl methyl ether	B1. Hexane	B2.
C. Vinyl choride	CC. Toluene	CCC. tert-Butylbenzene	CCCC. 1-Chlorohexane	C1. Heptane	C2.
D. Chloroethane	DD. Chlorobenzene	DDD. 1,2,4-Trimethylbenzene	DDDD. Isopropyl alcohol	D1. Propylene	D2.
E. Methylene chloride	EE. Ethylbenzene	EEE. sec-Butylbenzene	EEEE. Acetonitrile	E1. Freon 11	E2.
F. Acetone	FF. Styrene	FFF. 1,3-Dichlorobenzene	FFFF. Acrolein	F1. Freon 12	F2.
G. Carbon disulfide	GG. Xylenes, total	GGG. p-Isopropyltoluene	GGGG. Acrylonitrile	G1. Freon 113	G2.
H. 1,1-Dichloroethene	HH. Vinyl acetate	HHH. 1,4-Dichlorobenzene	HHHH. 1,4-Dioxane	H1. Freon 114	H2.
I. 1,1-Dichloroethane	II. 2-Chloroethylvinyl ether	III. n-Butylbenzene	IIII. Isobutyl alcohol	I1. 2-Nitropropane	I2.
J. 1,2-Dichloroethene, total	JJ. Dichlorodifluoromethane	JJJ. 1,2-Dichlorobenzene	JJJJ. Methacrylonitrile	J1. Dimethyl disulfide	J2.
K. Chloroform	KK. Trichlorofluoromethane	KKK. 1,2,4-Trichlorobenzene	KKKK. Propionitrile	K1. 2,3-Dimethyl pentane	K2.
L. 1,2-Dichloroethane	LL. Methyl-tert-butyl ether	LLL. Hexachlorobutadiene	LLLL. Ethyl ether	L1. 2,4-Dimethyl pentane	L2.
M. 2-Butanone	MM. 1,2-Dibromo-3-chloropropane	MMM. Naphthalene	MMMM. Benzyl chloride	M1. 3,3-Dimethyl pentane	M2.
N. 1,1,1-Trichloroethane	NN. Methyl ethyl ketone	NNN. 1,2,3-Trichlorobenzene	NNNN. Iodomethane	N1. 2-Methylpentane	N2.
O. Carbon tetrachloride	OO. 2,2-Dichloropropane	OOO. 1,3,5-Trichlorobenzene	OOOO.1,1-Difluoroethane	O1. 3-Methylpentane	O2.
P. Bromodichloromethane	PP. Bromochloromethane	PPP. trans-1,2-Dichloroethene	PPPP. Tetrahydrofuran	P1. 3-Ethylpentane	P2.
Q. 1,2-Dichloropropane	QQ. 1,1-Dichloropropene	QQQ. cis-1,2-Dichloroethene	QQQQ. Methyl acetate	Q1. 2,2-Dimethylpentane	Q2.
R. cis-1,3-Dichloropropene	RR. Dibromomethane	RRR. m,p-Xylenes	RRRR. Ethyl acetate	R1. 2,2,3- Trimethylbutane	R2.
S. Trichloroethene	SS. 1,3-Dichloropropane	SSS. o-Xylene	SSSS. Cyclohexane	S1. 2,2,4-Trimethylpentane	S2.
T. Chlorodibromomethane	TT. 1,2-Dibromoethane	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	TTTT. Methylcyclohexane	T1. 2-Methylhexane	T2.
U. 1,1,2-Trichloroethane	UU. 1,1,1,2-Tetrachloroethane	UUU. 1,2-Dichlorotetrafluoroethane	UUUU. Allyl chloride	U1. Nonanal	U2.
V. Benzene	VV. Isopropylbenzene	VVV. 4-Ethyltoluene	VVVV. Methyl methacrylate	V1. 2-Methylnaphthalene	V2.
W. trans-1,3-Dichloropropene	WW. Bromobenzene	WWW. Ethanol	WWWW. Ethyl methacrylate	W1. Methanol	W2.
X. Bromoform	XX. 1,2,3-Trichloropropane	XXX. Di-isopropyl ether	XXXX. cis-1,4-Dichloro-2-butene	X1. 1,2,3-Trimethylbenzene	X2.
Y. 4-Methyl-2-pentanone	YY. n-Propylbenzene	YYY. tert-Butanol	YYYY. trans-1,4-Dichloro-2-butene	Y1. 2-Propanol	Y2.
Z. 2-Hexanone	ZZ. 2-Chlorotoluene	ZZZ. tert-Butyl alcohol	ZZZZ. Pentachloroethane	Z1.	Z2.

LDC #: 49880A1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Y N N/A Were percent differences (%D) ≤20 % and relative response factors (RRF) within the method criteria?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤20.0%)	Finding RRF (Limit)	Associated Samples	Qualifications
	11/24/20	B66207	B	20.2		All (ND)	J/UJ/A
			H	22.1			
			JJJ	23.3			
			M	22.5			
			O	21.2			
			MM	30.6			
			KKK	21.7			

Note: * = Ave RRF failed method criteria but within validation criteria

LDC #: 49880A1a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound
S= Standard deviation of the RRFs

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 50 std)	Recalculated RRF (RRF 50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL CVOAMS2	10/15/2020	2-Butanone (BUT)	0.3717	0.3717	0.4022	0.4022	5.2	5.2
			cis-1,2-DCE (FBZ)	0.4071	0.4071	0.4136	0.4137	7.1	7.1
			1,4-Dioxane (DXE)	1.6063	1.6063	1.4751	1.4751	18.6	18.6
			Tetrachloroethene (CBZ)	0.5483	0.5483	0.5409	0.5409	11.9	11.9
			1,4-DCB (DCB)	1.8936	1.8936	1.9749	1.9749	5.8	5.8

LDC # 49880A1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CCV)	Recalculated RRF (CCV)	Reported % D	Recalculated %D
1	B66207	11/24/2020	2-Butanone (BUT)	0.4022	0.4927	0.4927	22.5	22.5
			cis-1,2-DCE (FBZ)	0.4136	0.4585	0.4585	10.9	10.9
			1,4-Dioxane (DXE)	1.4751	1.7340	1.7340	17.5	17.5
			Tetrachloroethene (CBZ)	0.5409	0.6370	0.6370	17.8	17.8
			1,4-DCB (DCB)	1.9749	2.2040	2.2040	11.6	11.6

LDC #: 49880 A1a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	50.0	48.4	97	97	0
1,2-Dichloroethane-d4	"	46.1	92	92	"
Toluene-d8	"	41.3	83	83	"
Bromofluorobenzene	"	45.0	90	90	"

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 49880A1a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration; SA = Spike added

RPD = | LCSC - LCSDC | * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: LCS/D 460-74227/3,4

Compound	Spike Added (mg/kg)		Spiked Sample Concentration (mg/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
1,1-Dichloroethene	0.020	0.020	0.0240	0.0238	120	120	119	119	1	1
Trichloroethene			0.0204	0.0209	102	102	104	104	2	2
Benzene			0.0197	0.0196	99	99	98	98	1	1
Toluene			0.0197	0.0207	99	99	101	101	3	3
Chlorobenzene	↓	↓	0.0214	0.0211	107	107	105	105	1	1

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 49880 A1a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The concentration of the sample was calculated for the compound identified below using the following calculation:

$$\text{Concentration} = \frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 1, PCE

$$\text{Conc.} = \frac{(1849)(50)(5\text{ ml})}{(403677)(0.5409)(3.35\text{g})(0.921)(1000)}$$

$$= 0.000686$$

$$\approx 0.00069 \text{ mg/kg}$$

#	Sample ID	Compound	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Qualification
	1	PCE	0.00069	0.00069	—

Site: Long Island City, 30th Street
Laboratory: Eurofins
Report No.: 460-222776-1
Reviewer: Josephine Go and Christina Rink/Laboratory Data Consultants for GEI Consultants, Inc. – Huntington Station, NY
Date: December 22, 2020

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
B1 (10-15)	460-222776-1	VOC
B4 (0-5)	460-222776-2	VOC
Trip Blank	460-222776-7	VOC

Associated QC Samples(s):
Field/Trip Blanks: Trip Blank
Field Duplicate pair: None Associated

The above-listed soil and water samples were collected on November 13, 2020 and were analyzed for volatile organic compounds (VOCs) by SW-846 method 8260C. The data validation was performed in accordance with the USEPA Region 2 *Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-Method 8260B and 8260C,* SOP HW-24, Revision 4 (October 2014) and the USEPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,* EPA 540-R-2017-002 (January 2017), modified as necessary to accommodate the non-CLP methodologies used.

The organic data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) Tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Control Sample (LCS) Results
- Internal Standards
- Field Duplicate Results
- Moisture Content
- Quantitation Limits and Data Assessment
- Sample Quantitation and Compound Identification

Overall Evaluation of Data and Potential Usability Issues

All results are usable as reported or usable with minor qualification due to laboratory quality control outliers.

The validation findings were based on the following information.

Data Completeness

The data package was complete as defined under the requirements for the NYSDEC ASP category B laboratory deliverables.

Holding Times and Sample Preservation

All criteria were met.

GC/MS Tunes

All criteria were met.

Initial and Continuing Calibrations

Initial Calibration:

All criteria were met.

Continuing calibration:

Compounds that did not meet criteria are summarized in the following table.

Date	Standard ID	Compound	CC %D	Associated Samples		Validation Action
11/17/20	B65940	Trichlorofluoromethane	30.0	B1 (10-15)	XX	UJ nondetects
		Carbon tetrachloride	22.4	B4 (0-5)	XX	UJ nondetects
11/18/20	T42252	Bromomethane	45.2	Trip Blank	XX	UJ nondetects
		1,1,2,2-Tetrachloroethane	29.2		XX	UJ nondetects

X = Initial calibration (IC) relative standard deviation (%RSD) > 20; estimate (J/UJ) positive and nondetect results.
XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ) positive and nondetect results.
SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.
+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The trichlorofluoromethane, carbon tetrachloride, bromomethane, and 1,1,2,2-tetrachloroethane results were estimated due to continuing calibration exceedances. The bias cannot be determined. The results can be used for project objectives as nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Blanks

Contamination was not detected in the method blanks.

Contamination was detected in the trip blank sample Trip Blank for VOC analysis. The presence of blank contamination indicates that false positives may exist for these compounds in the associated samples. Action Levels (ALs) were established at <2x reporting limits (RL) (for common contaminants) and <RL (for other contaminants) of the concentrations detected. The following table summarizes the contamination detected.

Field Blank ID	Compound	Level Detected	Action Level	Associated Samples
Trip Blank	Methylene chloride	0.33 ug/L	2xRL	B1 (10-15) B4 (0-5)

Sample results were qualified as follows:

- If sample concentration was < the reporting limit (RL) and ≤ the Action Level, qualify the result as a nondetect (U) at the RL.
- If sample concentration was > the RL and ≤ the Action Level, qualify the result as not detected (U) at the reported concentration.

No samples were qualified since the associated sample results were nondetect.

Surrogate Recoveries

All criteria were met.

MS/MSD Results

MS/MSD analyses were performed for sample SW-2 for VOC analysis. All criteria were met.

LCS Results

All criteria were met.

Internal Standards

All criteria were met.

Field Duplicate Results

A field duplicate pair was not associated with this sample set. Validation action was not required on this basis.

Moisture Content

All criteria were met.

Quantitation Limits and Data Assessment

Results were reported which were below the reporting limit (RL) and above the method detection limit (MDL) in the VOC analysis. These results were qualified as estimated (J) by the laboratory.

Dilutions were not required for VOC analysis.

Sample Quantitation and Compound Identification

Calculations were spot-checked; no discrepancies were noted.

DATA VALIDATION QUALIFIERS

U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.

J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.

JN - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.

R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

LDC #: 49880B1a
SDG #: 460-222776-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Category B

Date: 12/21/20
Page: 1 of 1
Reviewer: JVG
2nd Reviewer: [signature]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A, A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A, A	ICAL ≤ 20% r ICV ≤ 30%.
IV.	Continuing calibration	SW	CCV ≤ 20%
V.	Laboratory Blanks	A	
VI.	Field blanks	SW	TB = 7
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	SW	%R NR - no associated sample
IX.	Laboratory control samples	A	LCS/D
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	Result <RL > MDL = J dets
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	B1 (10-15)	460-222776-1	Soil	11/13/20
2	B4 (0-5)	460-222776-2	Soil	11/13/20
3	~~SW-2~~	~~460-222776-3~~	~~Soil~~	~~11/13/20~~
4	SW-3	460-222776-4	Soil	11/13/20
5	DUP20201113	460-222776-5	Soil	11/13/20
6	~~EB20201113~~	~~460-222776-6~~	Water	~~11/13/20~~
7	Trip Blank	460-222776-7	Water	11/13/20
8	~~SW-2MS~~	~~460-222776-3MS~~	~~Soil~~	~~11/13/20~~
9	~~SW-2MSD~~	~~460-222776-~~3MSD	~~Soil~~	~~11/13/20~~
10				

Notes:

1	MB 460-740437/8						
	1 -740725/7						

LDC #: 49880 B1a

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20% and relative response factors (RRF) within method criteria?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 30%?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 20% and relative response factors (RRF) within method criteria?		✓		
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks were identified in this SDG?	✓			
Were target compounds detected in the field blanks?	✓			
VII. Surrogate spikes				
Were all surrogate percent recovery (%R) within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		✓		

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
X. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds detected in the field duplicates?			✓	
XI. Internal standards				
Were internal standard area counts within -50% to +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XII. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	AA. Tetrachloroethene	AAA. 1,3,5-Trimethylbenzene	AAAA. Ethyl tert-butyl ether	A1. 1,3-Butadiene	A2.
B. Bromomethane	BB. 1,1,2,2-Tetrachloroethane	BBB. 4-Chlorotoluene	BBBB. tert-Amyl methyl ether	B1. Hexane	B2.
C. Vinyl choride	CC. Toluene	CCC. tert-Butylbenzene	CCCC. 1-Chlorohexane	C1. Heptane	C2.
D. Chloroethane	DD. Chlorobenzene	DDD. 1,2,4-Trimethylbenzene	DDDD. Isopropyl alcohol	D1. Propylene	D2.
E. Methylene chloride	EE. Ethylbenzene	EEE. sec-Butylbenzene	EEEE. Acetonitrile	E1. Freon 11	E2.
F. Acetone	FF. Styrene	FFF. 1,3-Dichlorobenzene	FFFF. Acrolein	F1. Freon 12	F2.
G. Carbon disulfide	GG. Xylenes, total	GGG. p-Isopropyltoluene	GGGG. Acrylonitrile	G1. Freon 113	G2.
H. 1,1-Dichloroethene	HH. Vinyl acetate	HHH. 1,4-Dichlorobenzene	HHHH. 1,4-Dioxane	H1. Freon 114	H2.
I. 1,1-Dichloroethane	II. 2-Chloroethylvinyl ether	III. n-Butylbenzene	IIII. Isobutyl alcohol	I1. 2-Nitropropane	I2.
J. 1,2-Dichloroethene, total	JJ. Dichlorodifluoromethane	JJJ. 1,2-Dichlorobenzene	JJJJ. Methacrylonitrile	J1. Dimethyl disulfide	J2.
K. Chloroform	KK. Trichlorofluoromethane	KKK. 1,2,4-Trichlorobenzene	KKKK. Propionitrile	K1. 2,3-Dimethyl pentane	K2.
L. 1,2-Dichloroethane	LL. Methyl-tert-butyl ether	LLL. Hexachlorobutadiene	LLLL. Ethyl ether	L1. 2,4-Dimethyl pentane	L2.
M. 2-Butanone	MM. 1,2-Dibromo-3-chloropropane	MMM. Naphthalene	MMMM. Benzyl chloride	M1. 3,3-Dimethyl pentane	M2.
N. 1,1,1-Trichloroethane	NN. Methyl ethyl ketone	NNN. 1,2,3-Trichlorobenzene	NNNN. Iodomethane	N1. 2-Methylpentane	N2.
O. Carbon tetrachloride	OO. 2,2-Dichloropropane	OOO. 1,3,5-Trichlorobenzene	OOOO.1,1-Difluoroethane	O1. 3-Methylpentane	O2.
P. Bromodichloromethane	PP. Bromochloromethane	PPP. trans-1,2-Dichloroethene	PPPP. Tetrahydrofuran	P1. 3-Ethylpentane	P2.
Q. 1,2-Dichloropropane	QQ. 1,1-Dichloropropene	QQQ. cis-1,2-Dichloroethene	QQQQ. Methyl acetate	Q1. 2,2-Dimethylpentane	Q2.
R. cis-1,3-Dichloropropene	RR. Dibromomethane	RRR. m,p-Xylenes	RRRR. Ethyl acetate	R1. 2,2,3- Trimethylbutane	R2.
S. Trichloroethene	SS. 1,3-Dichloropropane	SSS. o-Xylene	SSSS. Cyclohexane	S1. 2,2,4-Trimethylpentane	S2.
T. Chlorodibromomethane	TT. 1,2-Dibromoethane	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	TTTT. Methylcyclohexane	T1. 2-Methylhexane	T2.
U. 1,1,2-Trichloroethane	UU. 1,1,1,2-Tetrachloroethane	UUU. 1,2-Dichlorotetrafluoroethane	UUUU. Allyl chloride	U1. Nonanal	U2.
V. Benzene	VV. Isopropylbenzene	VVV. 4-Ethyltoluene	VVVV. Methyl methacrylate	V1. 2-Methylnaphthalene	V2.
W. trans-1,3-Dichloropropene	WW. Bromobenzene	WWW. Ethanol	WWWW. Ethyl methacrylate	W1. Methanol	W2.
X. Bromoform	XX. 1,2,3-Trichloropropane	XXX. Di-isopropyl ether	XXXX. cis-1,4-Dichloro-2-butene	X1. 1,2,3-Trimethylbenzene	X2.
Y. 4-Methyl-2-pentanone	YY. n-Propylbenzene	YYY. tert-Butanol	YYYY. trans-1,4-Dichloro-2-butene	Y1. 2-Propanol	Y2.
Z. 2-Hexanone	ZZ. 2-Chlorotoluene	ZZZ. tert-Butyl alcohol	ZZZZ. Pentachloroethane	Z1.	Z2.

LDC #: 49880 B1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y (N) N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Y (N) N/A Were percent differences (%D) ≤20 % and relative response factors (RRF) within the method criteria?

#	Date	Standard ID	Compound	Finding %D (Limit: <20.0%)	Finding RRF (Limit)	Associated Samples	Qualifications
	11/17/20	B65940	KK	30.0		1,2, MB1 (ND)	J/UJ/A
			O	22.4			
	11/18/20	T4252	B	45.2		7, MB2 (ND)	
			BB	29.2			

Note: * = Ave RRF failed method criteria but within validation criteria

LDC #: 49880B1a

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?
Blank units: ug/L **Associated sample units:** mg/kg
Sampling date: 11/13/20
Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: _____ Associated Samples: All except 7 (ND)

Compound	Blank ID	Sample Identification								
	7									
E	0.33									

Blank units: _____ **Associated sample units:** _____
Sampling date: _____
Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: _____ Associated Samples: _____

Compound	Blank ID	Sample Identification								

Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

LDC #: 49880B1a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound
S= Standard deviation of the RRFs

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 50 std)	Recalculated RRF (RRF 50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL CVOAMS2	10/15/2020	2-Butanone (BUT)	0.3717	0.3717	0.4022	0.4022	5.2	5.2
			cis-1,2-DCE (FBZ)	0.4071	0.4071	0.4136	0.4137	7.1	7.1
			1,4-Dioxane (DXE)	1.6063	1.6063	1.4751	1.4751	18.6	18.6
			Tetrachloroethene (CBZ)	0.5483	0.5483	0.5409	0.5409	11.9	11.9
			1,4-DCB (DCB)	1.8936	1.8936	1.9749	1.9749	5.8	5.8
2	ICAL CVOAMS15	9/25/2020	2-Butanone (BUT)	0.9109	0.9109	0.8712	0.8712	8.1	8.1
			cis-1,2-DCE (FBZ)	0.3060	0.3060	0.3123	0.3123	3.8	3.8
			1,4-Dioxane (DXE)	1.0598	1.0598	1.0128	1.0128	8.6	8.6
			Tetrachloroethene (CBZ)	0.3976	0.3976	0.3998	0.3998	3.6	3.6
			1,4-DCB (DCB)	1.4170	1.4170	1.4491	1.4491	3.5	3.5

LDC # 49880B1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CCV)	Recalculated RRF (CCV)	Reported % D	Recalculated %D
1	B65940	11/17/2020	2-Butanone (BUT)	0.4022	0.3920	0.3920	2.5	2.5
			cis-1,2-DCE (FBZ)	0.4136	0.4039	0.4039	2.4	2.3
			1,4-Dioxane (DXE)	1.4751	1.5520	1.5520	5.2	5.2
			Tetrachloroethene (CBZ)	0.5409	0.6306	0.6306	16.6	16.6
			1,4-DCB (DCB)	1.9749	1.9740	1.9740	0.0	0.0
2	T42252	11/18/2020	2-Butanone (BUT)	0.8712	1.0040	1.0040	15.3	15.2
			cis-1,2-DCE (FBZ)	0.3123	0.3333	0.3333	6.7	6.7
			1,4-Dioxane (DXE)	1.0128	1.1560	1.1560	14.2	14.1
			Tetrachloroethene (CBZ)	0.3998	0.3928	0.3928	1.8	1.8
			1,4-DCB (DCB)	1.4491	1.5420	1.5420	6.4	6.4

LDC #: 49580B1a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	50.0	63.5	127	127	0
1,2-Dichloroethane-d4		62.4	125	125	
Toluene-d8		53.7	107	107	
Bromofluorobenzene		58.5	117	117	

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 49880B1a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration; SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: LCS ID 460-740437/4,5

Compound	Spike Added (mg/kg)		Spiked Sample Concentration (mg/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
1,1-Dichloroethene	0.020	0.020	0.0219	0.0233	109	109	116	116	6	6
Trichloroethene			0.0190	0.0211	95	95	115	105	10	10
Benzene			0.0167	0.0187	84	84	93	93	11	11
Toluene			0.0175	0.0194	88	88	97	97	10	10
Chlorobenzene	✓	✓	0.0193	0.0208	96	96	109	104	8	7.5

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 49880B1a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260~~B~~)

The concentration of the sample was calculated for the compound identified below using the following calculation:

$$\text{Concentration} = \frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 1, PCE

$$\text{Conc.} = \frac{(15799)(50.0)\ (5\ mL)}{(340909)(0.5409)\ (5.63g)\ (0.85)\ (1000)}$$

$$= 0.0043\ mg/kg$$

#	Sample ID	Compound	Reported Concentration (~~ug/L~~ mg/kg)	Calculated Concentration (~~ug/L~~ mg/kg)	Qualification
	1	PCE	0.0043	0.0043	-

Site: Long Island City, 30th Street
Laboratory: Eurofins
Report No.: 460-223175-1
Reviewer: Josephine Go and Christina Rink/Laboratory Data Consultants for GEI Consultants, Inc. – Huntington Station, NY
Date: December 23, 2020

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
UST-1	460-223175-1	VOC, PAH
UST-2	460-223175-2	VOC, PAH
UST-3	460-223175-3	VOC, PAH
UST-4	460-223175-4	VOC, PAH, EPH

Associated QC Samples(s):
Field/Trip Blanks: None Associated
Field Duplicate pair: None Associated

The above-listed soil samples were collected on November 19, 2020 and were analyzed for volatile organic compounds (VOCs) by SW-846 method 8260C, polynuclear aromatic hydrocarbons (PAHs) by SW-846 method 8270E, and extractable petroleum hydrocarbons (EPHs) by method NJDEP. The data validation was performed in accordance with the USEPA Region 2 *Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-Method 8260B and 8260C,* SOP HW-24, Revision 4 (October 2014), the USEPA Region 2 *Standard Operating Procedure for Semivolatile Data Validation SW-846 Method 8270D,* SOP HW-35A, Revision 0 (June 2015), and the USEPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,* EPA 540-R-2017-002 (January 2017), modified as necessary to accommodate the non-CLP methodologies used.

The organic data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) Tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Control Sample (LCS) Results
- Internal Standards
- Field Duplicate Results
- Moisture Content
- Quantitation Limits and Data Assessment
- Sample Quantitation and Compound Identification

Overall Evaluation of Data and Potential Usability Issues

All results are usable as reported or usable with minor qualification due to laboratory quality control outliers.

The validation findings were based on the following information.

Data Completeness

The data package was complete as defined under the requirements for the NYSDEC ASP category B laboratory deliverables.

Holding Times and Sample Preservation

All criteria were met.

GC/MS Tunes

VOC and PAH

All criteria were met.

Initial and Continuing Calibrations

VOC and EPH

All criteria were met.

PAH

Initial Calibration:

All criteria were met.

Continuing calibration:

Compounds that did not meet criteria are summarized in the following table.

Date	Standard ID	Compound	CC %D	Associated Samples		Validation Action
11/20/20	F4518491	Dibenzo(a,h)anthracene	21.3	UST-1 UST-2 UST-3 UST-4	XX	J detects/UJ nondetects

X = Initial calibration (IC) relative standard deviation (%RSD) > 20; estimate (J/UJ) positive and nondetect results.
XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ) positive and nondetect results.
SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.
+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The dibenzo(a,h)anthracene results were estimated due to continuing calibration exceedance. The bias cannot be determined. The results can be used for project objectives as detects with estimated values (J) or nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Blanks

Contamination was not detected in the method blanks.

A field blank was not associated with this sample set. Validation action was not required on this basis.

Surrogate Recoveries

All criteria were met.

MS/MSD Results

MS/MSD analyses were not associated with this sample set. Validation action was not required on this basis.

LCS Results

All criteria were met.

Internal Standards

All criteria were met.

Field Duplicate Results

A field duplicate pair was not associated with this sample set. Validation action was not required on this basis.

Moisture Content

All criteria were met.

Quantitation Limits and Data Assessment

Results were reported which were below the reporting limit (RL) and above the method detection limit (MDL) in the PAH analysis. These results were qualified as estimated (J) by the laboratory.

Dilutions were not required for VOC and EPH analyses.

Sample Quantitation and Compound Identification

Calculations were spot-checked; no discrepancies were noted.

DATA VALIDATION QUALIFIERS

U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.

J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.

JN - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.

R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

LDC #: 49880C1a
SDG #: 460-223175-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Category B

Date: 12/21/20
Page: 1 of 1
Reviewer: SVG
2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	ICAL ≤ 20%, ICV ≤ 30%
IV.	Continuing calibration	A	CCV ≤ 20%
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	A	LCS/D
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	no result < RL
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	UST-1	460-223175-1	Soil	11/19/20
2	UST-2	460-223175-2	Soil	11/19/20
3	UST-3	460-223175-3	Soil	11/19/20
4	UST-4	460-223175-4	Soil	11/19/20
5				
6				
7				
8				
9				

Notes:

	MB 460-741924/8						
	↓ - 742518/7						
-	LB3 460-741513/1-A						

(short list)

LDC #: 49880 C1a

VALIDATION FINDINGS CHECKLIST

Method: Volatiles (EPA SW 846 Method 8260C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20% and relative response factors (RRF) within method criteria?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 30%?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 20% and relative response factors (RRF) within method criteria?	✓			
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks were identified in this SDG?			✓	
Were target compounds detected in the field blanks?				✓
VII. Surrogate spikes				
Were all surrogate percent recovery (%R) within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
X. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds detected in the field duplicates?			✓	
XI. Internal standards				
Were internal standard area counts within -50% to +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XII. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

LDC #: 49880C1a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound
S= Standard deviation of the RRFs

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 50 std)	Recalculated RRF (RRF 50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL CVOAMS4	9/16/2020	MTBE (FBZ)	0.7789	0.7789	0.7668	0.7668	5.5	5.5
			Benzene (CBZ)	2.0940	2.0940	2.0009	2.0009	8.6	8.6
			1,2,4-TMB (DCB)	3.5172	3.5172	3.3900	3.3900	12.4	12.4

LDC # 49880C1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound	(IS)	Average RRF (Initial)	Reported RRF (CCV)	Recalculated RRF (CCV)	Reported % D	Recalculated %D
1	D75191	11/23/2020	MTBE	(FBZ)	0.7668	0.7878	0.7878	2.7	2.7
			Benzene	(CBZ)	2.0009	2.0550	2.0550	2.7	2.7
			1,2,4-TMB	(DCB)	3.3900	3.3380	3.3380	1.5	1.5
2	D75268	11/25/2020	MTBE	(FBZ)	0.7668	0.7207	0.7207	6.0	6.0
			Benzene	(CBZ)	2.0009	1.7290	1.7290	13.6	13.6
			1,2,4-TMB	(DCB)	3.3900	2.9320	2.9320	13.5	13.5

LDC #: 49880 C1a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 01

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	50.0	52.6	105	105	
1,2-Dichloroethane-d4		45.1	90	90	
Toluene-d8		43.9	88	88	
Bromofluorobenzene		48.6	97	97	

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 49880 C1a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration
SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: LCSD 468-741924/4,5

Compound	Spike Added (mg/kg)		Spiked Sample Concentration (mg/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
1,1-Dichloroethene										
Trichloroethene										
Benzene			~~0.0199~~ ~~0.0205~~	0.0205	100	100	103	103	3	3
Toluene			0.0200	0.0212	100	100	106	106	5	5
Chlorobenzene										

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 49680Ga

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The concentration of the sample was calculated for the compound identified below using the following calculation:

$$\text{Concentration} = \frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. ND , Benzene (LCS)

$$\text{Conc.} = \frac{(253603)(50)}{(\cancel{450142}\ 318008)(2.0009)(1000)}$$

$$= 0.01985$$

$$\approx 0.0199 \text{ mg/kg}$$

#	Sample ID	Compound	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Qualification
	LCS - 74192/4	Benzene	0.0199	0.0199	—

LDC #: 49880C2a

SDG #: 460-223175-1

Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET

Category B

Date: 12/21/20

Page: 1 of 1

Reviewer: DVL

2nd Reviewer:

METHOD: GC/MS ~~Semivolatiles~~ PAH (EPA SW 846 Method 8270E)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	ICAL ≤ 20% ICV ≤ 30%
IV.	Continuing calibration	SW	CCV ≤ 20%
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	A	LCS/D
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	Results <RL > MDL = J dets
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	UST-1	460-223175-1	Soil	11/19/20
2	UST-2	460-223175-2	Soil	11/19/20
3	UST-3	460-223175-3	Soil	11/19/20
4	UST-4	460-223175-4	Soil	11/19/20
5				
6				
7				
8				
9				

Notes:

	MB 460-741505/1-A						

LDC #: 49880C2a

VALIDATION FINDINGS CHECKLIST

Method: Semivolatiles (EPA SW 846 Method 8270D/E)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. GC/MS Instrument performance check				
Were the DFTPP performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20% and relative response factors (RRF) within method criteria?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 30%?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 20% and relative response factors (RRF) within method criteria?	✓	✓		
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks? If yes, please see the blanks validation findings worksheet.		✓		
VI. Field blanks				
Were field blanks were identified in this SDG?		✓		
Were target compounds detected in the field blanks?			✓	
VII. Surrogate spikes				
Were all surrogate percent recovery (%R) within QC limits?	✓			
If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any percent recoveries (%R) was less than 10%, was a reanalysis performed to confirm %R ?			✓	
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
X. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds detected in the field duplicates?			✓	
XI. Internal standards				
Were internal standard area counts within -50% to +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XII. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS SVOA

A. Phenol	GG. Acenaphthene	MMM. Bis(2-Chloroisopropyl)ether	SSSS. 2/3-Dimethyldibenzothiophene (4MDT)	Y1. 3,3'-Dimethylbenzidine
B. Bis (2-chloroethyl) ether	HH. 2,4-Dinitrophenol	NNN. Aniline	TTTT. 1-Methyldibenzothiophene (1MDT)	Z1. o-Toluidine
C. 2-Chlorophenol	II. 4-Nitrophenol	OOO. N-Nitrosodimethylamine	UUUU.. 2,3,4,6-Tetrachlorophenol	A2. Benzo(j)fluoranthene
D. 1,3-Dichlorobenzene	JJ. Dibenzofuran	PPP. Benzoic Acid	VVVV. 1,2,4,5-Tetrachlorobenzene	B2. Benzofluoranthenes, total
E. 1,4-Dichlorobenzene	KK. 2,4-Dinitrotoluene	QQQ. Benzyl alcohol	WWWW.. 2-Picoline	C2. trans-Decalin
F. 1,2-Dichlorobenzene	LL. Diethylphthalate	RRR. Pyridine	XXXX. 3-Methylcholanthrene	D2. cis-Decalin
G. 2-Methylphenol	MM. 4-Chlorophenyl-phenyl ether	SSS. Benzidine	YYYY. a,a-Dimethylphenethylamine	E2.
H. 2,2'-Oxybis(1-chloropropane)	NN. Fluorene	TTT. 1-Methylnaphthalene	ZZZZ. Hexachloropropene	F2.
I. 4-Methylphenol	OO. 4-Nitroaniline	UUU.Benzo(b)thiophene	A1. N-Nitrosodiethylamine	G2.
J. N-Nitroso-di-n-propylamine	PP. 4,6-Dinitro-2-methylphenol	VVV.Benzonaphthothiophene	B1. N-Nitrosodi-n-butylamine	H2.
K. Hexachloroethane	QQ. N-Nitrosodiphenylamine	WWW.Benzo(e)pyrene	C1. N-Nitrosomethylethylamine	I2.
L. Nitrobenzene	RR. 4-Bromophenyl-phenylether	XXX. 2,6-Dimethylnaphthalene	D1. N-Nitrosomorpholine	J2.
M. Isophorone	SS. Hexachlorobenzene	YYY. 2,3,5-Trimethylnaphthalene	E1. N-Nitrosopyrrolidine	K2.
N. 2-Nitrophenol	TT. Pentachlorophenol	ZZZ. Perylene	F1. Phenacetin	L2.
O. 2,4-Dimethylphenol	UU. Phenanthrene	AAAA. Dibenzothiophene	G1. 2-Acetylaminofluorene	M2.
P. Bis(2-chloroethoxy)methane	VV. Anthracene	BBBB. Benzo(a)fluoranthene	H1. Pronamide	N2.
Q. 2,4-Dichlorophenol	WW. Carbazole	CCCC. Benzo(b)fluorene	I1. Methyl methanesulfonate	O2.
R. 1,2,4-Trichlorobenzene	XX. Di-n-butylphthalate	DDDD. cis/trans-Decalin	J1. Ethyl methanesulfonate	P2.
S. Naphthalene	YY. Fluoranthene	EEEE. Biphenyl	K1. o,o',o''-Triethylphosphorothioate	Q2.
T. 4-Chloroaniline	ZZ. Pyrene	FFFF. Retene	L1. n-Phenylene diamine	R2.
U. Hexachlorobutadiene	AAA. Butylbenzylphthalate	GGGG. C30-Hopane	M1. 1,4-Naphthoquinone	S2.
V. 4-Chloro-3-methylphenol	BBB. 3,3'-Dichlorobenzidine	HHHH. 1-Methylphenanthrene	N1. N-Nitro-o-toluidine	T2.
W. 2-Methylnaphthalene	CCC. Benzo(a)anthracene	IIII. 1,4-Dioxane	O1. 1,3,5-Trinitrobenzene	U2.
X. Hexachlorocyclopentadiene	DDD. Chrysene	JJJJ. Acetophenone	P1. Pentachlorobenzene	V2..
Y. 2,4,6-Trichlorophenol	EEE. Bis(2-ethylhexyl)phthalate	KKKK. Atrazine	Q1. 4-Aminobiphenyl	W2
Z. 2,4,5-Trichlorophenol	FFF. Di-n-octylphthalate	LLLL. Benzaldehyde	R1. 2-Naphthylamine	X2..
AA. 2-Chloronaphthalene	GGG. Benzo(b)fluoranthene	MMMM. Caprolactam	S1. Triphenylene	Y2.
BB. 2-Nitroaniline	HHH. Benzo(k)fluoranthene	NNNN. 2,6-Dichlorophenol	T1. Octachlorostyrene	Z2.
CC. Dimethylphthalate	III. Benzo(a)pyrene	OOOO. 1,2-Diphenylhydrazine	U1. Famphur	
DD. Acenaphthylene	JJJ. Indeno(1,2,3-cd)pyrene	PPPP. 3-Methylphenol	V1. 1,4-phenylenediamine	
EE. 2,6-Dinitrotoluene	KKK. Dibenz(a,h)anthracene	QQQQ. 3&4-Methylphenol	W1. Methapyrilene	
FF. 3-Nitroaniline	LLL. Benzo(g,h,i)perylene	RRRR. 4-Dimethyldibenzothiophene	X1. Pentachloroethane	

LDC #: 49880 C2a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Reviewer: JVG

METHOD: GC/MS BNA (EPA SW 846 Method 8270 B)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?
Y (N) N/A Were percent differences (%D) ≤20 % and relative response factors (RRF) within the method criteria?

#	Date	Standard ID	Compound	Finding %D (Limit: <20.0%)	Finding RRF (Limit)	Associated Samples	Qualifications
	11/20/20	F4518491	KKK	21.3		All (ND + Det)	J/UJ/A

LDC #: 49880C2a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: JVG

METHOD: GC/MS SVOA (EPA SW 846 Method 8270E)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound,
S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 40 Std)	Recalculated RRF (RRF 40 Std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL MS15	11/10/20	Naphthalene (NPT)	1.0864	1.0864	1.0576	1.0577	4.6	4.6
			Fluorene (ANT)	1.4681	1.4681	1.4456	1.4456	4.2	4.2
			Phenanthrene (PHN)	1.1434	1.1434	1.1620	1.1620	4.7	4.7
			Chrysene (CRY)	1.3173	1.3173	1.3589	1.3589	5.2	5.2
			Benzo(a)pyrene (PRY)	1.1447	1.1447	0.9869	0.9869	13.2	13.2

LDC # _49880C2a_

VALIDATION FINDINGS WORSHEET
Continuing Calibration Calculation Verification

Reviewer: __JVG__

METHOD: GC/MS SVOA (EPA SW 846 Method 8270E)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound,
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CCV)	Recalculated RRF (CCV)	Reported % D	Recalculated %D
1	f4518491	11/20/20	Naphthalene (NPT)	1.0576	1.1009	1.1009	4.1	4.1
			Fluorene (ANT)	1.4456	1.4952	1.4952	3.4	3.4
			Phenanthrene (PHN)	1.1620	1.1463	1.1463	1.4	1.4
			Chrysene (CRY)	1.3589	1.3282	1.3282	2.3	2.3
			Benzo(a)pyrene (PRY)	0.9869	1.1603	1.1603	17.6	17.6

LDC #: 49880L2a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: JVG

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270~~D~~ E)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5	50.0	31.0	62	62	0
2-Fluorobiphenyl	↓	29.7	59	59	↓
Terphenyl-d14	↓	34.8	68	68	↓
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

LDC #: 49880C2a

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: JVG

METHOD: GC/MS BNA (EPA SW 846 Method 8270D) E

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA Where: SSC = Spike concentration
SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: LCS/D 460-74150 5/2, 3-A

Compound	Spike Added (mg/kg)		Spike Concentration (mg/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
Phenol										
N-Nitroso-di-n-propylamine										
4-Chloro-3-methylphenol										
Acenaphthene	3.33	3.33	2.93	2.97	88	88	89	89	1	1
Pentachlorophenol										
Pyrene	3.33	3.33	2.85	2.96	85	85	89	89	5	5

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 49880C2a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: JVG

METHOD: GC/MS SVOA (EPA SW 846 Method 8270E)

The concentration of the sample was calculated for the compound identified below using the following calculation:

$$\text{Concentration} = \frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

V_o = Volume or weight of sample extract in milliliters (ml) or grams (g).

V_i = Volume of extract injected in microliters (ul)

V_t = Volume of the concentrated extract in microliters (ul)

Df = Dilution Factor.

%S = Percent solids, applicable to soil and solid matrices only.

2.0 = Factor of 2 to account for GPC cleanup

Example:

Sample I.D. #1 , _____

$$\text{Conc} = \frac{(6966)(40)(1\text{mL})}{(185766)(0.9869)(15.0\text{g})(0.858)}$$

$$= 0.018$$

$$\approx 0.12 \text{ mg/kg}$$

#	Sample ID	Compound	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Qualification
	1	Benzo(a)pyrene	0.12	0.12	—

LDC #: 49880C8
SDG #: 460-223175-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Category B

Date: 12/21/20
Page: 1 of 1
Reviewer: JVC
2nd Reviewer:

METHOD: GC Extractable Petroleum Hydrocarbons (Method NJDEP)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	Initial calibration/ICV	A / N	ICAL ≤ 25% ~~ICV ≤ 25%~~
III.	Continuing calibration	A	CCV ≤ 25%
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	A	LCS/D
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	A	no result < RL
XI.	Target compound identification	A	
XII	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	UST-4	460-223175-4	Soil	11/19/20
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				

Notes:

	MB 460-741472/1-A						

LDC #: 49880 C8 **VALIDATION FINDINGS CHECKLIST** Page: 1 of 2
Reviewer: JVG

Method: / GC ___ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	/			
Was cooler temperature criteria met?	/			
IIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	/			
Were all percent relative standard deviations (%RSD) ≤ ~~20~~ 25%?	/			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			/	
Were the RT windows properly established?	/			
IIb. Initial calibration verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?			/	
Were all percent differences (%D) ≤ 20%?			/	
III. Continuing calibration				
Was a continuing calibration analyzed daily?	/			
Were all percent differences (%D) ≤ ~~20~~ 25%?	/			
Were all the retention times within the acceptance windows?	/			
IV. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	/			
Was a laboratory blank analyzed for each matrix and concentration?	/			
Was there contamination in the laboratory blanks?		/		
V. Field Blanks				
Were field blanks identified in this SDG?		/		
Were target compounds detected in the field blanks?			/	
VI. Surrogate spikes				
Were all surrogate percent recovery (%R) within the QC limits?	/			
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			/	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			/	
VII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?		/		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			/	
VIII. Laboratory control samples				
Was an LCS analyzed per analytical or extraction batch?	/			

Validation Area	Yes	No	NA	Findings/Comments
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds detected in the field duplicates?			✓	
X. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XI. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

LDC #: 49880C8

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: JVG

METHOD: GC EPH (Method NJDEP)

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculatior

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where:
A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported CF (1000 std)	Recalculated CF (1000 std)	Reported Average CF (Initial)	Recalculated Average CF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL GC1	10/27/20	Total EPH (C9-C40)	66061.0000	66061.3270	64337.2000	64337.2000	4.0	4.0

LDC#: 49880C8

VALIDATION FINDINGS WORSHEET
Continuing Calibration Results Verification

Reviewer: JVG

METHOD: GC EPH (Method NJDEP)

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration percent difference (%D) values were recalculated for the compounds identified below using the following calculation:

Percent difference (%D) = 100 * (N - C)/N

Where:
N = Initial Calibration Factor or Nominal Amount
C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	Average CF	Reported (CF)	Recalculated (CF)	Reported %D	Recalculated %D
1	1F179619	11/21/20	Total EPH (C9-C40)	64337.2000	57000.5590	57000.5590	11.4	11.4

LDC #: 49880C8

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: JVG

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
H		50.0	42.3	85	85	0
AA		↓	42.9	86	86	↓

Sample ID:

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

	Surrogate Compound		Surrogate Compound		Surrogate Compound		Surrogate Compound		Surrogate Compound
A	Chlorobenzene (CBZ)	I	Fluorobenzene (FBZ)	Q	Dichlorophenyl Acetic Acid (DCAA)	Y	Tetrachloro-m- xylene	GG	2-Nitro-m-xylene
B	4-Bromofluorobenzene (BFB)	J	n-Triacontane	R	4-Nitrophenol	Z	2-Bromonaphthalene	HH	p-Terphenyl
C	a,a,a-Trifluorotoluene	K	Hexacosane	S	1-Chloro-3-Nitrobenzene	AA	1-Chlorooctadecane	II	Tripropylphosphate
D	Bromochlorobenene	L	Bromobenzene	T	3,4-Dinitrotoluene	BB	2,4-Dichlorophenylacetic acid	JJ	2,3-Dibromopropionic acid
E	1,4-Dichlorobutane	M	Benzo(e)Pyrene	U	Tripentyltin	CC	2,5-Dibromotoluene	KK	Pentachloroethane
F	1,4-Difluorobenzene (DFB)	N	Terphenyl-D14	V	Tri-n-propyltin	DD	n-Nonatriacontane	LL	1,1,1,2-Tetrachloroethane
G	Octacosane	O	Decachlorobiphenyl (DCB)	W	Tributyl Phosphate	EE	1,2-Dibromopropane	MM	5a-Androstane
H	Ortho-Terphenyl	P	1-methylnaphthalene	X	Triphenyl Phosphate	FF	1,2-Dinitrobenzene	NN	2-Fluorobiphenyl

LDC #: 49880C8

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: JVG

METHOD: /GC __HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC/SA)
RPD =(({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100

Where SSC = Spiked sample concentration
LCS = Laboratory Control Sample
SA = Spike added
LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: LCSD 460-74147 2/2, 3-A

Compound	Spike Added (mg/kg)		Spike Sample Concentration (mg/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)										
Diesel (8015)										
Benzene (8021B)										
Methane (RSK-175)										
2,4-D (8151)										
Dinoseb (8151)										
Naphthalene (8310)										
Anthracene (8310)										
HMX (8330)										
2,4,6-Trinitrotoluene (8330)										
Phorate (8141A)										
Malathion (8141A)										
Formaldehyde (8315A)										
Total EPH (C_9-C_{40})	133	133	122	124	92	92	93	93	1	1

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 49880C8

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: JVG

METHOD: / **GC** __ **HPLC**

The concentration of the sample was calculated for the compound identified below using the following calculation:

Concentration= $\frac{(A)(Fv)(Df)}{(RF)(Vs \text{ or } Ws)(\%S/100)}$

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. MD Compound Name Total EPH (C9-C40) LCS

Concentration = $\frac{(59081690)\ (2\ mL)}{(64337.3324)\ (15.09)}$ = 122.4 mg/kg

#	Sample ID	Compound	Reported Concentrations (mg/kg)	Recalculated Results Concentrations (mg/kg)	Qualifications
	LCS	Total EPH (C9-C40)	122	122	—

Comments: _____

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

GEI Consultants
110 Walt Whitman Road, Suite 204
Huntington Station, NY 11746
ATTN: Mr. Bill Fitchett
Wfitchett@geiconsultants.com

December 24, 2020

SUBJECT: Long Island City, 30th Street, Data Usability Summary Report.

Dear Mr. Fitchett,

Enclosed is the final validation report for the fraction listed below. This SDG was received on December 7, 2020. Attachment 1 is a summary of the samples that were reviewed for analysis.

LDC Project #49899:

SDG #	**Fraction**
460-223594-1	Volatiles

The data validation was performed under modified Category B guidelines using quality control summaries provided by the laboratory. The analyses were validated using the following documents, as applicable to each method:

- USEPA Region 2 Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-Method 8260B and 8260C, SOP HW-24, Revision 4; October 2014
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, EPA 540-R-2017-002; January 2017
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Christina Rink

Christina Rink
crink@lab-data.com
Project Manager/Senior Chemist

21 pages-ADV EQUIS EDD/ NYDUSR Attachment 1

Category B **LDC #49899 (GEI Consultants, Inc. - Huntington Station, NY / 30th Street, Long Island City, Site No. C241214)**

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260D)																															
Matrix: Water/Soil				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	460-223594-1	12/07/20	12/29/20	0	2																														

Site: Long Island City, 30th Street
Laboratory: Eurofins
Report No.: 460-223594-1
Reviewer: Josephine Go and Christina Rink/Laboratory Data Consultants for GEI Consultants, Inc. – Huntington Station, NY
Date: December 23, 2020

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
B-2 (10-15)	460-223594-1	VOC
B-3 (10-15)	460-223594-2	VOC

Associated QC Samples(s):
Field/Trip Blanks: None Associated
Field Duplicate pair: None Associated

The above-listed soil samples were collected on November 25, 2020 and were analyzed for volatile organic compounds (VOCs) by SW-846 method 8260D. The data validation was performed in accordance with the USEPA Region 2 *Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-Method 8260B and 8260C,* SOP HW-24, Revision 4 (October 2014) and the USEPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,* EPA 540-R-2017-002 (January 2017), modified as necessary to accommodate the non-CLP methodologies used.

The organic data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) Tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Control Sample (LCS) Results
- Internal Standards
- Field Duplicate Results
- Moisture Content
- Quantitation Limits and Data Assessment
- Sample Quantitation and Compound Identification

Overall Evaluation of Data and Potential Usability Issues

All results are usable as reported or usable with minor qualification due to laboratory quality control outliers.

The validation findings were based on the following information.

Data Completeness

The data package was complete as defined under the requirements for the NYSDEC ASP category B laboratory deliverables.

Holding Times and Sample Preservation

All criteria were met.

GC/MS Tunes

All criteria were met.

Initial and Continuing Calibrations

Initial Calibration:

Compounds that did not meet criteria are summarized in the following table.

Date	Instrument ID	Compound	IC %D	Associated Samples		Validation Action
11/26/20	D75342	1,2,3-Trichlorobenzene	96.3	B-2 (10-15) B-3 (10-15)	SS	UJ nondetects

X = Initial calibration (IC) relative standard deviation (%RSD) > 20; estimate (J/UJ) positive and nondetect results.
XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ) positive and nondetect results.
SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.
+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The 1,2,3-trichlorobenzene result was estimated due to second source calibration exceedance. The bias cannot be determined. The result can be used for project objectives as nondetect with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Continuing calibration:

Compounds that did not meet criteria are summarized in the following table.

Date	Standard ID	Compound	CC %D	Associated Samples		Validation Action
12/02/20	D75538	Bromomethane	35.5	B-2 (10-15)	XX	UJ nondetects
		1,2,3-Trichlorobenzene	37.0	B-3 (10-15)	XX	UJ nondetects

X = Initial calibration (IC) relative standard deviation (%RSD) > 20; estimate (J/UJ) positive and nondetect results.
XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ) positive and nondetect results.
SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.
+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The bromomethane and 1,2,3-trichlorobenzene results were estimated due to continuing calibration exceedances. The bias cannot be determined. The results can be used for project objectives as nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Blanks

Contamination was not detected in the method blanks.

A field blank was not associated with this sample set. Validation action was not required on this basis.

Surrogate Recoveries

All criteria were met.

MS/MSD Results

MS/MSD analyses were not associated with this sample set. Validation action was not required on this basis.

LCS Results

The following table lists the LCS/LCSD percent recoveries (%R) outside of control limits in the VOC analysis and the resulting validation actions.

LCS ID	Compound	LCS %R (Limits)	LCS/D %R (Limits)	Affected Sample	Validation Action
LCS/LCSD 460-743927/5,8	1,2,3-Trichlorobenzene	135 (77-120)	130 (77-120)	B-2 (10-15) B-3 (10-15)	None
LCS/LCSD 460-743927/5,8	Bromomethane	64 (68-136)	66 (68-136)	B-2 (10-15) B-3 (10-15)	UJ nondetects

- Within control limits

Validation action was not required for 1,2,3-trichlorobenzene due to high LCS/LCSD recoveries as positive results only are affected and this compound was not detected in the associated samples.

The bromomethane result may be biased low due to low LCS/LCSD percent recoveries. The result can be used for project objectives as nondetect with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Internal Standards

All criteria were met.

Field Duplicate Results

A field duplicate pair was not associated with this sample set. Validation action was not required on this basis.

Moisture Content

All criteria were met.

Quantitation Limits and Data Assessment

Results were reported which were below the reporting limit (RL) and above the method detection limit (MDL) in the VOC analysis. These results were qualified as estimated (J) by the laboratory.

Dilutions were not required for VOC analysis.

Sample Quantitation and Compound Identification

Calculations were spot-checked; no discrepancies were noted.

DATA VALIDATION QUALIFIERS

U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.

J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.

JN - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.

R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

LDC #: 49899A1a
SDG #: 460-223594-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Category B

Date: 12/18/20
Page: 1 of 1
Reviewer: SM
2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / SW	ICAL ≤ 20% r ICV ≤ 30%
IV.	Continuing calibration	SW	CCV ≤ 20%
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	SW	LCS/D
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	Results <RL >MDL = J dets
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	B-2 (10-15)	460-223594-1	Soil	11/25/20
2	B-3 (10-15)	460-223594-2	Soil	11/25/20
3				
4				
5				
6				
7				
8				
9				

Notes:

	MB 460-743927/10						

LDC #: 49899A1a

VALIDATION FINDINGS CHECKLIST

Method: Volatiles (EPA SW 846 Method 8260D)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20% and relative response factors (RRF) within method criteria?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 30%?		✓		
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 20% and relative response factors (RRF) within method criteria?		✓		
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks were identified in this SDG?		✓		
Were target compounds detected in the field blanks?			✓	
VII. Surrogate spikes				
Were all surrogate percent recovery (%R) within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?		✓		
X. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds detected in the field duplicates?			✓	
XI. Internal standards				
Were internal standard area counts within -50% to +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XII. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	AA. Tetrachloroethene	AAA. 1,3,5-Trimethylbenzene	AAAA. Ethyl tert-butyl ether	A1. 1,3-Butadiene	A2.
B. Bromomethane	BB. 1,1,2,2-Tetrachloroethane	BBB. 4-Chlorotoluene	BBBB. tert-Amyl methyl ether	B1. Hexane	B2.
C. Vinyl choride	CC. Toluene	CCC. tert-Butylbenzene	CCCC. 1-Chlorohexane	C1. Heptane	C2.
D. Chloroethane	DD. Chlorobenzene	DDD. 1,2,4-Trimethylbenzene	DDDD. Isopropyl alcohol	D1. Propylene	D2.
E. Methylene chloride	EE. Ethylbenzene	EEE. sec-Butylbenzene	EEEE. Acetonitrile	E1. Freon 11	E2.
F. Acetone	FF. Styrene	FFF. 1,3-Dichlorobenzene	FFFF. Acrolein	F1. Freon 12	F2.
G. Carbon disulfide	GG. Xylenes, total	GGG. p-Isopropyltoluene	GGGG. Acrylonitrile	G1. Freon 113	G2.
H. 1,1-Dichloroethene	HH. Vinyl acetate	HHH. 1,4-Dichlorobenzene	HHHH. 1,4-Dioxane	H1. Freon 114	H2.
I. 1,1-Dichloroethane	II. 2-Chloroethylvinyl ether	III. n-Butylbenzene	IIII. Isobutyl alcohol	I1. 2-Nitropropane	I2.
J. 1,2-Dichloroethene, total	JJ. Dichlorodifluoromethane	JJJ. 1,2-Dichlorobenzene	JJJJ. Methacrylonitrile	J1. Dimethyl disulfide	J2.
K. Chloroform	KK. Trichlorofluoromethane	KKK. 1,2,4-Trichlorobenzene	KKKK. Propionitrile	K1. 2,3-Dimethyl pentane	K2.
L. 1,2-Dichloroethane	LL. Methyl-tert-butyl ether	LLL. Hexachlorobutadiene	LLLL. Ethyl ether	L1. 2,4-Dimethyl pentane	L2.
M. 2-Butanone	MM. 1,2-Dibromo-3-chloropropane	MMM. Naphthalene	MMMM. Benzyl chloride	M1. 3,3-Dimethyl pentane	M2.
N. 1,1,1-Trichloroethane	NN. Methyl ethyl ketone	NNN. 1,2,3-Trichlorobenzene	NNNN. Iodomethane	N1. 2-Methylpentane	N2.
O. Carbon tetrachloride	OO. 2,2-Dichloropropane	OOO. 1,3,5-Trichlorobenzene	OOOO.1,1-Difluoroethane	O1. 3-Methylpentane	O2.
P. Bromodichloromethane	PP. Bromochloromethane	PPP. trans-1,2-Dichloroethene	PPPP. Tetrahydrofuran	P1. 3-Ethylpentane	P2.
Q. 1,2-Dichloropropane	QQ. 1,1-Dichloropropene	QQQ. cis-1,2-Dichloroethene	QQQQ. Methyl acetate	Q1. 2,2-Dimethylpentane	Q2.
R. cis-1,3-Dichloropropene	RR. Dibromomethane	RRR. m,p-Xylenes	RRRR. Ethyl acetate	R1. 2,2,3- Trimethylbutane	R2.
S. Trichloroethene	SS. 1,3-Dichloropropane	SSS. o-Xylene	SSSS. Cyclohexane	S1. 2,2,4-Trimethylpentane	S2.
T. Dibromochloromethane	TT. 1,2-Dibromoethane	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	TTTT. Methylcyclohexane	T1. 2-Methylhexane	T2.
U. 1,1,2-Trichloroethane	UU. 1,1,1,2-Tetrachloroethane	UUU. 1,2-Dichlorotetrafluoroethane	UUUU. Allyl chloride	U1. Nonanal	U2.
V. Benzene	VV. Isopropylbenzene	VVV. 4-Ethyltoluene	VVVV. Methyl methacrylate	V1. 2-Methylnaphthalene	V2.
W. trans-1,3-Dichloropropene	WW. Bromobenzene	WWW. Ethanol	WWWW. Ethyl methacrylate	W1. Methanol	W2.
X. Bromoform	XX. 1,2,3-Trichloropropane	XXX. Di-isopropyl ether	XXXX. cis-1,4-Dichloro-2-butene	X1. 1,2,3-Trimethylbenzene	X2.
Y. 4-Methyl-2-pentanone	YY. n-Propylbenzene	YYY. tert-Butanol	YYYY. trans-1,4-Dichloro-2-butene	Y1. 2-Propanol	Y2.
Z. 2-Hexanone	ZZ. 2-Chlorotoluene	ZZZ. tert-Butyl alcohol	ZZZZ. Pentachloroethane	Z1.	Z2.

LDC #: 49899A1a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was an initial calibration verification standard analyzed after each ICAL for each instrument?

Y N N/A Were all %D within the validation criteria of ≤20/30%D?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤ 20/30.0%)	Associated Samples	Qualifications
	11/26/20	D75342	NNN	96.3	All (ND)	J/UJ/A

LDC #: 49899A1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y (N) N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Y (N) N/A Were percent differences (%D) ≤20 % and relative response factors (RRF) within the method criteria?

#	Date	Standard ID	Compound	Finding %D (Limit: <20.0%)	Finding RRF (Limit)	Associated Samples	Qualifications
	12/02/20	D75598	B	35.5		All (ND)	J/UJ/A
			NNN	37.0		↓ L	↓

Note: * = Ave RRF failed method criteria but within validation criteria

LDC #: 49899 A1a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y (N) N/A Was a LCS required?

Y (N) N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	LCS/D 460-743927/5,8	NNN	135 (77-120)	130 (77-120)	( )	All (ND)	J dets / P
		B	64 (68-136)	66 (68-136)	( )	↓ ↓	J/UJ/P
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
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			( )	( )	( )		
			( )	( )	( )		

LDC #: 49899A1a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound
S= Standard deviation of the RRFs

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 50 std)	Recalculated RRF (RRF 50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL CVOAMS4	11/26/2020	2-Butanone (BUT)	0.4601	0.4601	0.4775	0.4775	6.9	6.9
			cis-1,2-DCE (FBZ)	0.4350	0.4350	0.4643	0.4643	5.0	5.0
			1,4-Dioxane (DXE)	see r2 calc					
			Tetrachloroethene (CBZ)	0.5443	0.5443	0.6829	0.6829	15.9	15.9
			1,4-DCB (DCB)	1.9912	1.9912	2.3300	2.3300	11.7	11.7

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GCMS Volatiles (EPA SW 846 Method 8260D)

Parameter: 1,4-Dioxane

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Concentration ratio
11/26/2020	VOAMS4	1,4-Dioxane	20	0.014715	0.020
			100	0.180556	0.100
			400	0.674116	0.400
			1000	1.650374	1.000
			4000	8.235466	4.000

Regression Output	*Calculated*	*Reported*
Constant	*-0.142057*	*-22.270000*
R Squared	*0.9975*	*0.9900*
X Coefficient(s)	*2.07709*	*1.87110*
Correlation Coefficient	*0.998749*	
Coefficient of Determination (r^2)	*0.997500*	*0.990000*

LDC # 49899A1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CCV)	Recalculated RRF (CCV)	Reported % D	Recalculated %D
1	D72644	12/2/2020	2-Butanone (BUT)	0.4775	0.4432	0.4432	7.2	7.2
			cis-1,2-DCE (FBZ)	0.4643	0.4511	0.4511	2.8	2.8
			1,4-Dioxane (DXE)	400.0000	376.0000	375.9808	6.0	6.0
			Tetrachloroethene (CBZ)	0.6829	0.5655	0.5655	17.2	17.2
			1,4-DCB (DCB)	2.3300	2.0110	2.0110	13.8	13.7

LDC #: 44899 A1A

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	50	54.0	108	108	0
1,2-Dichloroethane-d4		56.8	114	114	
Toluene-d8		47.1	94	94	
Bromofluorobenzene		47.9	96	96	

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 49899A1a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration; SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: LCSID 460-74392/1-A,6

Compound	Spike Added (mg/kg)		Spiked Sample Concentration (mg/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
1,1-Dichloroethene	0.0200	0.0200	0.0172	0.0185	86	86	92	92	7	7
Trichloroethene	|	|	0.0183	0.0191	92	92	96	96	4	4
Benzene	|	|	0.0175	0.0177	88	88	88	88	1	1
Toluene	|	|	0.0170	0.0175	85	85	88	88	3	3
Chlorobenzene	✓	✓	0.0184	0.0186	92	92	93	93	1	1

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 49896A1a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The concentration of the sample was calculated for the compound identified below using the following calculation:

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 1, PCE

Conc. = $\frac{(20618)(50)\ (5\ mL)}{(323892)(0.6829)(4.44\ g)(0.938)(1000)}$

= 0.00559

≈ 0.0056 mg/kg

#	Sample ID	Compound	Reported Concentration ~~(ug/L)~~ (mg/kg)	Calculated Concentration ~~(ug/L)~~ (mg/kg)	Qualification
	1	PCE	0.0056	0.0056	—

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

GEI Consultants
110 Walt Whitman Road, Suite 204
Huntington Station, NY 11746
ATTN: Mr. Bill Fitchett
Wfitchett@geiconsultants.com

January 5, 2021

SUBJECT: Long Island City, 30th Street, Data Usability Summary Report.

Dear Mr. Fitchett,

Enclosed is the final validation report for the fraction listed below. This SDG was received on December 11, 2020. Attachment 1 is a summary of the samples that were reviewed for analysis.

LDC Project #49975:

SDG #	Fraction
460-224069-1	Volatiles

The data validation was performed under modified Category B guidelines using quality control summaries provided by the laboratory. The analyses were validated using the following documents, as applicable to each method:

- USEPA Region 2 Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-Method 8260B and 8260C, SOP HW-24, Revision 4; October 2014
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, EPA 540-R-2017-002; January 2017
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Christina Rink

Christina Rink
crink@lab-data.com
Project Manager/Senior Chemist

42 pages-ADV EQUIS EDD/ NYDUSR R1 (removed SW samples) Attachment 1

Category B **LDC #49975 (GEI Consultants, Inc. - Huntington Station, NY / 30th Street, Long Island City, Site No. C241214)**

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260D)																															
Matrix: Water/Soil				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	460-224069-1	12/11/20	01/05/21	2	2																														
Total	T/CR			2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4

Shaded cells indicate Category B validation (all other cells are Category A validation). These sample counts do not include MS/MSD, and DUPs

Site: Long Island City, 30th Street
Laboratory: Eurofins
Report No.: 460-224069-1
Reviewer: Josephine Go and Christina Rink/Laboratory Data Consultants for GEI Consultants, Inc. – Huntington Station, NY
Date: December 30, 2020

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
B4(5-10)	460-224069-5	VOC
B4(10-15)	460-224069-6	VOC
Trip Blank	460-224069-8	VOC

Associated QC Samples(s):
Field/Trip Blanks: Trip Blank
Field Duplicate pair: None Associated

The above-listed soil and water samples were collected on December 4, 2020 and were analyzed for volatile organic compounds (VOCs) by SW-846 method 8260D. The data validation was performed in accordance with the USEPA Region 2 *Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-Method 8260B and 8260C,* SOP HW-24, Revision 4 (October 2014) and the USEPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,* EPA 540-R-2017-002 (January 2017), modified as necessary to accommodate the non-CLP methodologies used.

The organic data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) Tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Control Sample (LCS) Results
- Internal Standards
- Field Duplicate Results
- Moisture Content
- Quantitation Limits and Data Assessment
- Sample Quantitation and Compound Identification

Overall Evaluation of Data and Potential Usability Issues

All results are usable as reported or usable with minor qualification due to laboratory quality control outliers.

The validation findings were based on the following information.

Data Completeness

The data package was complete as defined under the requirements for the NYSDEC ASP category B laboratory deliverables.

Holding Times and Sample Preservation

All criteria were met.

GC/MS Tunes

All criteria were met.

Initial and Continuing Calibrations

Initial Calibration:

Compounds that did not meet criteria are summarized in the following table.

Date	Instrument ID	Compound	IC %D	Associated Samples		Validation Action
11/17/20	065936	4-Methyl-2-pentanone	33.3	Trip Blank	SS	UJ nondetects
		2-Hexanone	41.9		SS	UJ nondetects

X = Initial calibration (IC) relative standard deviation (%RSD) > 20; estimate (J/UJ) positive and nondetect results.
XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ) positive and nondetect results.
SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.
+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The 4-methyl-2-pentanone and 2-hexanone results were estimated due to second source calibration exceedances. The bias cannot be determined. The results can be used for project objectives as nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Continuing calibration:

Compounds that did not meet criteria are summarized in the following table.

Date	Standard ID	Compound	CC %D	Associated Samples		Validation Action
12/07/20	066660	Bromomethane	28.5	Trip Blank	XX	UJ nondetects
		Trichlorofluoromethane	24.2		XX	UJ nondetects
		1,1-Dichloroethene	24.5		XX	UJ nondetects
		Acetone	30.1		XX	UJ nondetects
		Methyl acetate	33.4		XX	UJ nondetects
		1,1,1-Trichloroethane	22.7		XX	UJ nondetects
12/08/20	K20632	Bromomethane	25.9	B4(5-10)	XX	UJ nondetects
		Trichlorofluoromethane	39.8	B4(10-15)	XX	UJ nondetects

X = Initial calibration (IC) relative standard deviation (%RSD) > 20; estimate (J/UJ) positive and nondetect results.
XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ) positive and nondetect results.
SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.
+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The bromomethane, trichlorofluoromethane, 1,1-dichloroethene, acetone, methyl acetate, and 1,1,1-trichloroethane results were estimated due to continuing calibration exceedances. The bias cannot be determined. The results can be used for project objectives as nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Blanks

Contamination was not detected in the method blanks.

Contamination was detected in the trip blank sample Trip Blank for VOC analysis. The presence of blank contamination indicates that false positives may exist for these compounds in the associated samples. Action Levels (ALs) were established at <2x reporting limits (RL) (for common contaminants) and <RL (for other contaminants) of the concentrations detected. The following table summarizes the contamination detected.

Field Blank ID	Compound	Level Detected	Action Level	Associated Samples
Trip Blank	Methylene chloride	0.43 ug/L	2xRL	B4(5-10) B4(10-15)

Sample results were qualified as follows:

- If sample concentration was < the reporting limit (RL) and ≤ the Action Level, qualify the result as a nondetect (U) at the RL.
- If sample concentration was > the RL and ≤ the Action Level, qualify the result as not detected (U) at the reported concentration.
- If the sample concentration was > the RL and > the Action Level, qualification of the data was not required.

No samples were qualified since the associated sample results were nondetect.

Surrogate Recoveries

All criteria were met.

MS/MSD Results

MS/MSD analyses were not associated with this sample set. Validation action was not required on this basis.

LCS Results

The following table lists the LCS/LCSD percent recoveries (%R) outside of control limits in the VOC analysis and the resulting validation actions.

LCS ID	Compound	LCS %R (Limits)	LCS/D %R (Limits)	Affected Sample	Validation Action
LCS/LCSD 460-745157/4,5	Methyl acetate	66 (70-127)	-	Trip Blank	UJ nondetects
LCS/LCSD 460-745199/3,4	Trichlorofluoromethane	-	146 (67-142)	B4(5-10) B4(10-15)	None

- Within control limits

The methyl acetate result may be biased low due to low LCS/LCSD percent recovery. The result can be used for project objectives as nondetect with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Validation action was not required for trichlorofluoromethane due to high LCS/LCSD recovery as positive results only are affected and this compound was not detected in the associated samples.

Internal Standards

All criteria were met.

Field Duplicate Results

A field duplicate pair was not associated with this sample set. Validation action was not required on this basis.

Moisture Content

All criteria were met.

Quantitation Limits and Data Assessment

Results were reported which were below the reporting limit (RL) and above the method detection limit (MDL) in the VOC analysis. These results were qualified as estimated (J) by the laboratory.

Dilutions were not required for VOC analysis.

Sample Quantitation and Compound Identification

Calculations were spot-checked; no discrepancies were noted.

DATA VALIDATION QUALIFIERS

U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.

J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.

JN - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.

R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

LDC #: 49975A1a
SDG #: 460-224069-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Category B

Date: 12/21/20
Page: 1 of 1
Reviewer: SM
2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A SW	ICAL ≤ 20% r ICV ≤ 30%
IV.	Continuing calibration	SW	CCV ≤ 20%
V.	Laboratory Blanks	A	
VI.	Field blanks	SW	TB = 4
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	SW	LCS
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	Result < RL > MDL = J dets
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	B4(5-10)	460-224069-5	Soil	12/04/20
2	B4(10-15)	460-224069-6	Soil	12/04/20
3	~~FB20201204~~	~~460-224069-7~~	~~Water~~	~~12/04/20~~
4	Trip Blank	460-224069-8	Water	12/04/20
5				
6				
7				
8				
9				

Notes:

1	MB460-745199/7						
2	" -745157/8						

LDC #: 49975 A1a

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG

Method: Volatiles (EPA SW 846 Method 8260C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20% and relative response factors (RRF) within method criteria?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 30%?		✓		
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 20% and relative response factors (RRF) within method criteria?		✓		
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks were identified in this SDG?	✓			
Were target compounds detected in the field blanks?	✓			
VII. Surrogate spikes				
Were all surrogate percent recovery (%R) within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?		✓		
X. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds detected in the field duplicates?			✓	
XI. Internal standards				
Were internal standard area counts within -50% to +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XII. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	AA. Tetrachloroethene	AAA. 1,3,5-Trimethylbenzene	AAAA. Ethyl tert-butyl ether	A1. 1,3-Butadiene	A2.
B. Bromomethane	BB. 1,1,2,2-Tetrachloroethane	BBB. 4-Chlorotoluene	BBBB. tert-Amyl methyl ether	B1. Hexane	B2.
C. Vinyl choride	CC. Toluene	CCC. tert-Butylbenzene	CCCC. 1-Chlorohexane	C1. Heptane	C2.
D. Chloroethane	DD. Chlorobenzene	DDD. 1,2,4-Trimethylbenzene	DDDD. Isopropyl alcohol	D1. Propylene	D2.
E. Methylene chloride	EE. Ethylbenzene	EEE. sec-Butylbenzene	EEEE. Acetonitrile	E1. Freon 11	E2.
F. Acetone	FF. Styrene	FFF. 1,3-Dichlorobenzene	FFFF. Acrolein	F1. Freon 12	F2.
G. Carbon disulfide	GG. Xylenes, total	GGG. p-Isopropyltoluene	GGGG. Acrylonitrile	G1. Freon 113	G2.
H. 1,1-Dichloroethene	HH. Vinyl acetate	HHH. 1,4-Dichlorobenzene	HHHH. 1,4-Dioxane	H1. Freon 114	H2.
I. 1,1-Dichloroethane	II. 2-Chloroethylvinyl ether	III. n-Butylbenzene	IIII. Isobutyl alcohol	I1. 2-Nitropropane	I2.
J. 1,2-Dichloroethene, total	JJ. Dichlorodifluoromethane	JJJ. 1,2-Dichlorobenzene	JJJJ. Methacrylonitrile	J1. Dimethyl disulfide	J2.
K. Chloroform	KK. Trichlorofluoromethane	KKK. 1,2,4-Trichlorobenzene	KKKK. Propionitrile	K1. 2,3-Dimethyl pentane	K2.
L. 1,2-Dichloroethane	LL. Methyl-tert-butyl ether	LLL. Hexachlorobutadiene	LLLL. Ethyl ether	L1. 2,4-Dimethyl pentane	L2.
M. 2-Butanone	MM. 1,2-Dibromo-3-chloropropane	MMM. Naphthalene	MMMM. Benzyl chloride	M1. 3,3-Dimethyl pentane	M2.
N. 1,1,1-Trichloroethane	NN. Methyl ethyl ketone	NNN. 1,2,3-Trichlorobenzene	NNNN. Iodomethane	N1. 2-Methylpentane	N2.
O. Carbon tetrachloride	OO. 2,2-Dichloropropane	OOO. 1,3,5-Trichlorobenzene	OOOO.1,1-Difluoroethane	O1. 3-Methylpentane	O2.
P. Bromodichloromethane	PP. Bromochloromethane	PPP. trans-1,2-Dichloroethene	PPPP. Tetrahydrofuran	P1. 3-Ethylpentane	P2.
Q. 1,2-Dichloropropane	QQ. 1,1-Dichloropropene	QQQ. cis-1,2-Dichloroethene	QQQQ. Methyl acetate	Q1. 2,2-Dimethylpentane	Q2.
R. cis-1,3-Dichloropropene	RR. Dibromomethane	RRR. m,p-Xylenes	RRRR. Ethyl acetate	R1. 2,2,3- Trimethylbutane	R2.
S. Trichloroethene	SS. 1,3-Dichloropropane	SSS. o-Xylene	SSSS. Cyclohexane	S1. 2,2,4-Trimethylpentane	S2.
T. Dibromochloromethane	TT. 1,2-Dibromoethane	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	TTTT. Methylcyclohexane	T1. 2-Methylhexane	T2.
U. 1,1,2-Trichloroethane	UU. 1,1,1,2-Tetrachloroethane	UUU. 1,2-Dichlorotetrafluoroethane	UUUU. Allyl chloride	U1. Nonanal	U2.
V. Benzene	VV. Isopropylbenzene	VVV. 4-Ethyltoluene	VVVV. Methyl methacrylate	V1. 2-Methylnaphthalene	V2.
W. trans-1,3-Dichloropropene	WW. Bromobenzene	WWW. Ethanol	WWWW. Ethyl methacrylate	W1. Methanol	W2.
X. Bromoform	XX. 1,2,3-Trichloropropane	XXX. Di-isopropyl ether	XXXX. cis-1,4-Dichloro-2-butene	X1. 1,2,3-Trimethylbenzene	X2.
Y. 4-Methyl-2-pentanone	YY. n-Propylbenzene	YYY. tert-Butanol	YYYY. trans-1,4-Dichloro-2-butene	Y1. 2-Propanol	Y2.
Z. 2-Hexanone	ZZ. 2-Chlorotoluene	ZZZ. tert-Butyl alcohol	ZZZZ. Pentachloroethane	Z1.	Z2.

LDC #: 99975 A1a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was an initial calibration verification standard analyzed after each ICAL for each instrument?

Y (N) N/A Were all %D within the validation criteria of ≤20/30%D?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤ ~~20~~/30.0%)	Associated Samples	Qualifications
	11/17/20	0659361	Y	33.3	4, MB 2 (ND)	J / UJ / A
			Z	41.9		J

LDC #: 49975 A1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y (N) N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Y (N) N/A Were percent differences (%D) ≤20 % and relative response factors (RRF) within the method criteria?

#	Date	Standard ID	Compound	Finding %D (Limit: <20.0%)	Finding RRF (Limit)	Associated Samples	Qualifications
	12/07/20	066660	B	28.5		4, MB 1 (ND)	J/UJ/A
			KK	24.2			
			H	24.5			
			F	30.1			
			QQQQ	33.4			
			NNN	22.7			
	12/08/20	K20632	B	25.9		1, 2, MB 1 (ND)	
			KK	39.8			

Note: * = Ave RRF failed method criteria but within validation criteria

LDC #: 49975 A1a

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?

Blank units: ug/L **Associated sample units:** ug/kg
Sampling date: 12/04/20
Field blank type: (circle one) Field Blank / Rinsate / (Trip Blank) / Other: _____ Associated Samples: All S (ND)

Compound	Blank ID	Sample Identification								
	4									
E	0.43									

Blank units: _____ **Associated sample units:** _____
Sampling date: _____
Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: _____ Associated Samples: _____

Compound	Blank ID	Sample Identification								

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

LDC #: 49975A1a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was a LCS required?

Y (N) N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	LCSD 460-745157/4,5	QQQQ	66 (70-127)	( )	( )	4, MB 2 (ND)	J/UJ/P
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
	LCSD 460-745199/3,4	KK	( )	146 (67-142)	( )	1, 2, MB 1 (ND)	J dets / P
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
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			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		

LDC #: 49975A1a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$ — A_x = Area of Compound — A_{is} = Area of associated internal standard

average RRF = sum of the RRFs/number of standards — C_x = Concentration of compound — C_{is} = Concentration of internal standard

%RSD = 100 * (S/X) — S= Standard deviation of the RRFs — X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 50 std)	Recalculated RRF (RRF 50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL CVOAMS12	11/17/20	2-Butanone (BUT)	0.2939	0.2939	0.2875	0.2875	3.1	3.1
			cis-1,2-DCE (FBZ)	0.2142	0.2142	0.2139	0.2140	16.1	16.1
			1,4-Dioxane (DXE)	1.0624	1.0624	0.9817	0.9817	6.5	6.5
			Tetrachloroethene (CBZ)	0.3367	0.3367	0.3287	0.3287	7.2	7.2
			1,4-DCB (DCB)	1.2957	1.2957	1.2680	1.2681	3.4	3.4
2	ICAL CVOAMS9	12/05/20	2-Butanone (BUT)	0.2490	0.2490	0.2802	0.2802	14.4	14.4
			cis-1,2-DCE (FBZ)	0.3199	0.3199	0.3249	0.3249	6.6	6.6
			1,4-Dioxane (DXE)	see r2 calc					
			Tetrachloroethene (CBZ)	0.3568	0.3568	0.3564	0.3564	3.8	3.8
			1,4-DCB (DCB)	1.2844	1.2844	1.3365	1.3365	5.8	5.8

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Method: (EPA SW 846 Method 8260C)

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Conc ratio	(X^2) Conc ratio
12/5/2020	VOAMS9	1,4-Dioxane	20	0.0137	0.02	0.00040
			100	0.1341	0.10	0.0100
		IS = 1,4-Dioxane-d8	400	0.4473	0.40	0.1600
			1000	1.1686	1.00	1.0000
			4000	4.4840	4.00	16.0000
			10000	9.6250	10.00	100.0000

Regression Output	Calculated		*Reported WQR*	
Constant	*c*	*0.00000*	*c*	*0.00000*
Std Err of Y Est				
R Squared		*0.9999780*		*0.9910000*
Degrees of Freedom				
	m1	*m2*	*m1*	*m2*
X Coefficient(s)	*1.22022E+00*	*-2.5751E-02*	*1.22020E+00*	*-2.6000E-05*
Std Err of Coef.				
Correlation Coefficient		*0.999989*		
Coefficient of Determination (r^2)		*0.999978*		

LDC # 49975A1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CCV)	Recalculated RRF (CCV)	Reported % D	Recalculated %D
1	O66660	12/07/20	2-Butanone (BUT)	0.2875	0.2606	0.2606	9.4	9.4
			cis-1,2-DCE (FBZ)	0.2139	0.1754	0.1754	18.0	18.0
			1,4-Dioxane (DXE)	0.9817	1.0015	1.0015	2.0	2.0
			Tetrachloroethene (CBZ)	0.3287	0.3028	0.3028	7.9	7.9
			1,4-DCB (DCB)	1.2680	1.2117	1.2117	4.4	4.4
2	K20632	12/08/20	2-Butanone (BUT)	0.2802	0.2873	0.2873	2.6	2.6
			cis-1,2-DCE (FBZ)	0.3249	0.3479	0.3479	7.1	7.1
			1,4-Dioxane (DXE)	400.0000	431.0000	430.5183	7.6	7.6
			Tetrachloroethene (CBZ)	0.3564	0.4068	0.4068	14.2	14.2
			1,4-DCB (DCB)	1.3365	1.3667	1.3667	2.3	2.3

LDC #: 49975 A1a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	50.0	56.7	113	113	9
1,2-Dichloroethane-d4	↓	55.3	111	111	↓
Toluene-d8		52.8	106	106	
Bromofluorobenzene	↓	57.4	115	115	↓

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 49975 A1a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration; SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: LCSD 460-745196/3,4

Compound	Spike Added (mg/kg)		Spiked Sample Concentration (mg/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
1,1-Dichloroethene	0.0200	0.0200	0.0223	0.0237	112	112	119	119	6	6
Trichloroethene	|	|	0.0211	0.0219	106	106	110	110	4	4
Benzene	|	|	0.0220	0.0229	110	110	114	114	4	4
Toluene	|	|	0.0211	0.0218	106	106	109	109	3	3
Chlorobenzene	|	|	0.0209	0.0215	104	104	108	108	3	3

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 49975 A1w

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260~~C~~D)

The concentration of the sample was calculated for the compound identified below using the following calculation:

$$\text{Concentration} = \frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 1, PCE

$$\text{Conc.} = \frac{(7233)(50)(5\text{ mL})}{(233645)(0.7564)(5.94\text{g})(0.898)}$$

$$= 0.00407$$

$$\approx 0.0041 \text{ mg/kg}$$

#	Sample ID	Compound	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Qualification
	1	PCE	0.0041	0.0041	—

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

GEI Consultants
110 Walt Whitman Road, Suite 204
Huntington Station, NY 11746
ATTN: Mr. Bill Fitchett
Wfitchett@geiconsultants.com

January 22, 2021

SUBJECT: Long Island City, 30th Street, Data Usability Summary Report.

Dear Mr. Fitchett,

Enclosed is the final validation report for the fraction listed below. This SDG was received on December 28, 2020. Attachment 1 is a summary of the samples that were reviewed for analysis.

LDC Project #50102:

SDG #	**Fraction**
200-56465-1	Perfluoroalkyl & Polyfluoroalkyl Substances

The data validation was performed under modified Category B guidelines using quality control summaries provided by the laboratory. The analyses were validated using the following documents, as applicable to each method:

- USEPA Data Review and Validation Guidelines for Perfluoroalkyl Substances Analyzed Using EPA Method 537; November 2018
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, EPA 540-R-2017-002; January 2017

Please feel free to contact us if you have any questions.

Sincerely,

Christina Rink

Christina Rink
crink@lab-data.com
Project Manager/Senior Chemist

Category B **LDC #50102 (GEI Consultants, Inc. - Huntington Station, NY / 30th Street, Long Island City, Site No. C241214)**

LDC	SDG#	DATE REC'D	(3) DATE DUE	PFAs (537M)																															
Matrix: Water/Soil				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	200-56465-1	12/28/20	01/19/21	5	0																														
Total	T/CR			5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5

Shaded cells indicate Category B validation (all other cells are Category A validation). These sample counts do not include MS/MSD, and DUPs

Site: Long Island City, 30th Street
Laboratory: Eurofins
Report No.: 200-56465-1
Reviewer: Stella Cuenco and Christina Rink/Laboratory Data Consultants for GEI Consultants, Inc. – Huntington Station, NY
Date: January 19, 2021

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
EB20201209	200-56465-1	PFAS
FB20201209	200-56465-2	PFAS
DUP20201209	200-56465-3	PFAS
MW-P3	200-56465-4	PFAS
MW-P4	200-56465-5	PFAS

Associated QC Samples(s):
Field/Trip Blanks: EB20201209, FB20201209
Field Duplicate pair: DUP20201209 and MW-P3

The above-listed water samples were collected on December 9, 2020 and were analyzed for perfluoroalkyl and polyfluoroalkyl substances (PFAS) by method 537 modified. The data validation was performed in accordance with the USEPA Data Review and Validation Guidelines for Perfluoroalkyl Substances (PFAS) Analyzed Using EPA Method 537 (November 2018), the USEPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,* EPA 540-R-2017-002 (January 2017), and the Guidelines for Sampling and Analysis of PFAS under NYSDEC's Part 375 Remedial Programs (January 2020), modified as necessary to accommodate the non-CLP methodologies used.

The organic data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Liquid Chromatography/Mass Spectrometry (LC/MS) Tunes
- Initial and Continuing Calibrations
- Blanks
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Control Sample (LCS) Results
- Labeled Compounds
- Field Duplicate Results
- Quantitation Limits and Data Assessment
- Sample Quantitation and Compound Identification

Overall Evaluation of Data and Potential Usability Issues

All results are usable as reported or usable with minor qualification due to laboratory quality control outliers.

The validation findings were based on the following information.

Data Completeness

The data package was complete as defined under the requirements for the NYSDEC ASP category B laboratory deliverables.

Holding Times and Sample Preservation

All criteria were met.

LC/MS Tunes

All criteria were met.

Initial and Continuing Calibrations

All criteria were met.

Blanks

Contamination was not detected in the method blanks.

No positive results were found in the equipment blank sample EB20201209 and field blank sample FB20201209 for PFAS analysis.

MS/MSD Results

MS/MSD analyses were not associated with this sample set. Validation action was not required on this basis.

LCS Results

All criteria were met.

Labeled Compounds

All criteria were met.

Field Duplicate Results

Samples DUP20201209 and MW-P3 were submitted as the field duplicate pair with this sample group. The following table summarizes the concentrations.

Compound	Concentration (ng/L)		RPD
	DUP20201209	MW-P3	
Perfluorobutanoic acid	27.6	28.4	3
Perfluoropentanoic acid	41.4	41.5	0
Perfluorohexanoic acid	31.3	31.4	0
Perfluoroheptanoic acid	18.7	18.7	0
Perfluorooctanoic acid	28.7	29.8	4
Perfluorobutanesulfonic acid	11.5	10.9	5
Perfluorohexanesulfonic acid	6.12	6.18	1
Perfluorooctanesulfonic acid	3.51	3.64	4
Perfluorohexanesulfonic acid	0.67	4.27U	Not comparable

Quantitation Limits and Data Assessment

No results were reported below the RL and above the MDL in the VOC, SVOC, 1,4-dioxane, pesticide, and PCB analyses.

Dilutions were not required for VOC, SVOC, 1,4-dioxane, pesticide, and PCB analyses.

Sample Quantitation and Compound Identification

Calculations were spot-checked; no discrepancies were noted.

The following table lists target compound identifications that did not meet validation criteria and the resulting validating actions.

Sample	Compound	Ion Ratio (Limits)	Validation Action
MW-P4	Perfluoroheptanesulfonic acid	11.23 (3.42-10.26)	J detects

The perfluoroheptanesulfonic acid result was estimated due to ion ratio exceedance. The bias cannot be determined. The result can be used for project objectives as an estimated value (J) which may have a minor impact on the data usability.

DATA VALIDATION QUALIFIERS

U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.

J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.

JN - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.

R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

LDC #: 50102A96
SDG #: 200-56465-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Category B

Date: 1/14/21
Page: 1 of 1
Reviewer: PL
2nd Reviewer:

METHOD: LC/MS Perfluoroalkyl and Polyfluoroalkyl Substances (EPA Method 537M)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	LC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / A	RSD ≤ 20 %R ≤ 50/30 IC ≤ 30
IV.	Continuing calibration/ISC	A / A	D ≤ 30 ISC ≤ 50
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	EB = 1 FB = 2
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	A	LCSD
IX.	Field duplicates	SW	D = 3+4
X.	Labeled Compounds	A	
VI.	Compound quantitation RL/LOQ/LODs	A	<RL
XII.	Target compound identification	SW	
XIII.	System performance	A	
XIV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	EB20201209	200-56465-1	Water	12/09/20
2	FB20201209	200-56465-2	Water	12/09/20
3	DUP20201209	200-56465-3	Water	12/09/20
4	MW-P3	200-56465-4	Water	12/09/20
5	MW-P4	200-56465-5	Water	12/09/20
6				
7				
8				
9				
10				

Notes:

	162053						

LDC #: 50102A96 **VALIDATION FINDINGS CHECKLIST** Page: 1 of 2
Reviewer: JC

Method: LC/MS PFAS (EPA Method 537Mod)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	√			
Were cooler temperature criteria met?	√			
II. LC/MS Instrument performance check				
Were the instrument performance reviewed and found to be within the validation criteria?	√			
III. Initial calibration and Initial Calibration Verification				
Did the laboratory perform a 5-point calibration prior to sample analysis?	√			
Were all percent relative standard deviations (%RSD) ≤ 20%?	√			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit criteria of ≥ 0.990?			√	
Were all analytes within 70-130% or percent differences (%D) ≤30% of their true value for each calibration standard except the lowest point (50-150%)?	√			
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	√			
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	√			
Were all percent differences (%D) ≤ 30%?	√			
IV. Continuing calibration and Instrument Sensitivity Check				
Was a continuing calibration analyzed prior to sample analysis, after every 10 samples and at the end of the analytical sequence?	√			
Were all percent differences (%D) of the continuing calibration ≤ 30%?	√			
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	√			
Were all percent differences (%D) of the Instrument Sensitivity Check ≤ 50%?	√			
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	√			
Was a laboratory blank analyzed for each matrix and concentration?	√			
Was there contamination in the laboratory blanks?		√		
VI. Field blanks				
Were field blanks identified in this SDG?	√			
Were target compounds detected in the field blanks?		√		
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?		√		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			√	

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed per extraction batch for this SDG?	√			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	√			
X. Field duplicates				
Were field duplicate pairs identified in this SDG?	√			
Were target compounds detected in the field duplicates?	√			
XI. Labeled compounds				
Were labeled compound percent recoveries (%R) within the QC limits?	√			
XII. Compound quantitation				
Did the laboratory reporting limits (RL) meet the QAPP RLs?			√	
Did reported results include both branched and linear isomers?	√			
Were the correct ion transition, labeled compound and relative response factor (RRF) used to quantitate the compound?	√			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	√			
XIII. Target compound identification				
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	√			
Were two transitions and the ion transition ratio per analyte monitored and documented except for PFBA and PFPeA?	√			
Were ion ratios within QC limits?		√		
XIV. System performance				
System performance was found to be acceptable.	√			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	√			

TARGET COMPOUND WORKSHEET

METHOD: PFAS

	Associated Labeled Compound		
A. Perfluorobutanoic acid (PFBA)	MPFBA		
B. Perfluoropentanoic acid (PFPeA)	M5PFPEA		
C. Perfluorohexanoic acid (PFHxA)	M5PFHxA		
D. Perfluoroheptanoic acid (PFHpA)	M4PFHpA		
E. Perfluorooctanoic acid (PFOA)	M8PFOA		
F. Perfluorononanoic acid (PFNA)	M9PFNA		
G. Perfluorodecanoic acid (PFDA)	M8PFDA		
H. Perfluoroundecanoic acid (PFUnA)	M7PFUDA		
I. Perfluorododecanoic acid (PFDoA)	MPFDOA		
J. Perfluorotridecanoic acid (PFTriA)	MPFDOA		
K. Perfluorotetradecanoic acid (PFTeA)	M2PFTEDA		
L. Perfluorobutanesulfonic acid (PFBS)	M3PFBS		
M. Perfluorohexanesulfonic acid (PFHxS)	M3PFHxS		
N. Perfluoroheptanesulfonic acid (PFHpS)	M8PFOS		
O. Perfluorooctanesulfonic acid (PFOS)	M8PFOS		
P. Perfluorodecanesulfonic acid (PFDS)	M8PFOS		
Q. Perfluorooctanesulfonamide (FOSA)	M8FOSA		
R. N-Methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	d3-NMeFOSAA		
S. N-Ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	d5-NEtFOSAA		
T. 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2FTS)	M2-6:2FTS		
U. 1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2FTS)	M2-8:2FTS		
V. 9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)			
W. 11-Chloroeicosafluoro-3-Oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)			
X. Hexafluoropropylene oxide dimer acid (HFPO-DA)			
Y. 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2FTS)	M2-4:2FTS		
Z. Perfluorononanesulfonic acid (PFNS)	M8PFOS		

LDC #: 50102A96

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: SC

Method: LC/MS PFAS (EPA Method 537M)

Compound	Concentration (ng/L)		RPD	
	3	4		
A	27.6	28.4	3	
B	41.4	41.5	0	
C	31.3	31.4	0	
D	18.7	18.7	0	
E	28.7	29.8	4	
L	11.5	10.9	5	
M	6.12	6.18	1	
O	3.51	3.64	4	
T	0.67	4.27U	NC	

LDC #: 50102A96

VALIDATION FINDINGS WORKSHEET
Target Compound Identification

Reviewer: AC

METHOD: LC/MS PFAS (EPA Method 537M)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was the signal to noise (S/N) ratio for all compounds within the validation criteria?
Y (N) N/A Were two transitions and the ion transition ratio per analyte monitored and documented with the exception of PFBA and PFPeA?
Y (N) N/A Were ion ratios within QC limits?

#	Date	Sample ID	Compound	Ion ratio (Limits)	Qualifications
		5	4	11.23 (3.42 - 10.26)	J+ (a)

LDC #: 50102A96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Method: LC/MS PFAS (EPA Method 537M)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound
S = Standard deviation of the RRFs

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound	Reported RRF (RRF 1.0/0.928 std)	Recalculated RRF (RRF 1.0/0.928 std)	Reported Average RRF	Recalculated Average RRF	Reported %RSD	Recalculated %RSD
1	ICAL	11/5/2020	PFOA (13C4-PFOA)	1.0228	1.0228	1.0736	1.0736	15.0	#DIV/0!
	LC812		PFOS (13C4-PFOS)	1.0100	1.0100	1.0869	1.0869	11.5	#DIV/0!
2			PFOA (13C4-PFOA)						
			PFOS (13C4-PFOS)						

LDC #: 50102A96

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Method: LC/MS PFAS (EPA Method 537M)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (Actual Conc - Cx)/Actual Conc
Cx = (Ax)(Cis)/(Ais)(ave. RRF)

Where:
Ax = Area of compound
Ais = Area of associated internal standard
Cx = Concentration of compound
Cis = Concentration of internal standard
ave. RRF = initial calibration average RRF

#	Standard ID	Calibration Date	Compound	Average RRF	Reported RRF	Recalculated RRF	Reported %D	Recalculated %D
1	PA201216B01	12/16/2020	PFOA (13C4-PFOA)	1.0736	0.9645	0.9645	10.2	10.2
			PFOS (13C4-PFOS)	1.0869	1.0010	1.0009	7.9	7.9
2			PFOA (13C4-PFOA)					
			PFOS (13C4-PFOS)					
3			PFOA (13C4-PFOA)					
			PFOS (13C4-PFOS)					

LDC #: 50102A96

VALIDATION FINDINGS WORKSHEET
LCS Results Verification

Reviewer: SC
2nd Reviewer:

Method: LC/MS PFAS (EPA Method 537M)

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control duplicate were recalculated for the compounds identified below using the following calculation:

SSC = (Area spike) (Conc IS) / (Area IS) (average RRF spike)
%Recovery = 100 * SSC/SA

Where:
SSC = Spiked concentration
SA = Spike added
LCS = Laboratory control spike recovery
LCSD = Laboratory control spike duplicate recovery

RPD = | LCS - LCSD | * 2/(LCS + LCSD)

LCS/LCSD ID: LCS/D 200-162053

Compound	SA (ng/L)		SSC (ng/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
PFOA	40.0	40.0	36.10	38.86	90	90	97	97	7	7
PFOS	37.1	37.1	34.43	36.93	93	93	99	100	7	7

LDC #: 50102A96

VALIDATION FINDINGS WORKSHEET
Sample Results Verification

Reviewer: SC

Method: LC/MS PFAS (EPA Method 537M)

Compound results for all Level IV samples reported with a positive detect were recalculated and verified using the following equation:

$$\text{Concentration} = \frac{(Ax)\,(Cis)\,(Vt)\,(Df)}{(Ais)\,(RRF)\,(Vo)}$$

Where:

Ax = Area or height of the peak for the compound to be measured
Ais = Area or height of the peak for the internal standard
Cis = Concentration of the internal standard
DF = Dilution factor
Vt = Volume of extract in milliliters (mL)
RRF = Average relative response factor
Vo = Volums of sample in milliliters (mL)
%S = Percent solid

Sample #	Compound	Ax	Ais	Cis (ng/mL)	DF	RRF	Vt (mL)	Vo (mL)	%S	Calculated Concentration (ng/L)	Reported Concentration (ng/L)	% Diff
4	PFOS	27860	287801	1.20	1	1.0736	10	292.53		3.68	3.64	

30th Street, Long Island - LDC# 50102

SDG: 200564651

Analytical Method E537(M)

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
DUP2020	200-56465-3	PERFLUORODECANE SULFONIC ACID	12/16/2020		Y	N	U		U	1.67	0.40	ng/l
DUP2020	200-56465-3	PERFLUOROUNDECANOIC ACID (PFUnA)	12/16/2020		Y	N	U		U	1.67	0.61	ng/l
DUP2020	200-56465-3	1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	12/16/2020		Y	N	U		U	1.67	0.55	ng/l
DUP2020	200-56465-3	1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	12/16/2020	0.67	Y	Y	J		J	4.18	0.60	ng/l
DUP2020	200-56465-3	2-(N-methyl perfluorooctanesulfonamido) acetic acid	12/16/2020		Y	N	U		U	4.18	0.66	ng/l
DUP2020	200-56465-3	N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine	12/16/2020		Y	N	U		U	4.18	0.78	ng/l
DUP2020	200-56465-3	PERFLUOROBUTYRIC ACID (PFBA)	12/16/2020	27.6	Y	Y				4.18	0.95	ng/l
DUP2020	200-56465-3	PERFLUORODECANOIC ACID (PFDA)	12/16/2020		Y	N	U		U	1.67	0.39	ng/l
DUP2020	200-56465-3	PERFLUORODODECANOIC ACID (PFDoA)	12/16/2020		Y	N	U		U	1.67	0.39	ng/l
DUP2020	200-56465-3	PERFLUOROHEPTANE SULFONATE (PFHpS)	12/16/2020		Y	N	U		U	1.67	0.33	ng/l
DUP2020	200-56465-3	PERFLUOROPENTANOIC ACID (PFPeA)	12/16/2020	41.4	Y	Y				1.67	0.90	ng/l
DUP2020	200-56465-3	PERFLUOROTRIDECANOIC ACID (PFTriA)	12/16/2020		Y	N	U		U	1.67	0.36	ng/l
DUP2020	200-56465-3	PERFLUOROBUTANESULFONIC ACID	12/16/2020	11.5	Y	Y				1.67	0.53	ng/l
DUP2020	200-56465-3	PERFLUOROTETRADECANOIC ACID (PFTeA)	12/16/2020		Y	N	U		U	1.67	0.49	ng/l
DUP2020	200-56465-3	Perfluoroheptanoic Acid (PFHpA)	12/16/2020	18.7	Y	Y				1.67	0.39	ng/l
DUP2020	200-56465-3	Perfluorooctanoic acid (PFOA)	12/16/2020	28.7	Y	Y				1.67	0.82	ng/l
DUP2020	200-56465-3	PERFLUOROOCTANE SULFONIC ACID	12/16/2020	3.51	Y	Y				1.67	0.73	ng/l
DUP2020	200-56465-3	Perfluorooctane Sulfonamide (FOSA)	12/16/2020		Y	N	U		U	1.67	0.48	ng/l
DUP2020	200-56465-3	PERFLUORONONANOIC ACID	12/16/2020		Y	N	U		U	1.67	0.49	ng/l
DUP2020	200-56465-3	PERFLUOROHEXANOIC ACID (PFHxA)	12/16/2020	31.3	Y	Y				1.67	0.69	ng/l
DUP2020	200-56465-3	PERFLUOROHEXANESULFONIC ACID	12/16/2020	6.12	Y	Y				1.67	0.56	ng/l
EB20201	200-56465-1	PERFLUOROHEXANOIC ACID (PFHxA)	12/16/2020		Y	N	U		U	1.73	0.72	ng/l
EB20201	200-56465-1	PERFLUOROHEXANESULFONIC ACID	12/16/2020		Y	N	U		U	1.73	0.58	ng/l

SDG: 200564651

Analytical Method E537(M)

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EB20201	200-56465-1	PERFLUOROUNDECANOIC ACID (PFUnA)	12/16/2020		Y	N	U		U	1.73	0.63	ng/l
EB20201	200-56465-1	PERFLUOROTRIDECANOIC ACID (PFTriA)	12/16/2020		Y	N	U		U	1.73	0.37	ng/l
EB20201	200-56465-1	PERFLUOROTETRADECANOIC ACID (PFTeA)	12/16/2020		Y	N	U		U	1.73	0.51	ng/l
EB20201	200-56465-1	PERFLUOROPENTANOIC ACID (PFPeA)	12/16/2020		Y	N	U		U	1.73	0.93	ng/l
EB20201	200-56465-1	Perfluorooctanoic acid (PFOA)	12/16/2020		Y	N	U		U	1.73	0.85	ng/l
EB20201	200-56465-1	PERFLUOROOCTANE SULFONIC ACID	12/16/2020		Y	N	U		U	1.73	0.75	ng/l
EB20201	200-56465-1	Perfluorooctane Sulfonamide (FOSA)	12/16/2020		Y	N	U		U	1.73	0.49	ng/l
EB20201	200-56465-1	1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	12/16/2020		Y	N	U		U	1.73	0.57	ng/l
EB20201	200-56465-1	N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine	12/16/2020		Y	N	U		U	4.33	0.81	ng/l
EB20201	200-56465-1	Perfluoroheptanoic Acid (PFHpA)	12/16/2020		Y	N	U		U	1.73	0.40	ng/l
EB20201	200-56465-1	1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	12/16/2020		Y	N	U		U	4.33	0.62	ng/l
EB20201	200-56465-1	PERFLUOROHEPTANE SULFONATE (PFHpS)	12/16/2020		Y	N	U		U	1.73	0.34	ng/l
EB20201	200-56465-1	PERFLUORODODECANOIC ACID (PFDoA)	12/16/2020		Y	N	U		U	1.73	0.40	ng/l
EB20201	200-56465-1	PERFLUORODECANOIC ACID (PFDA)	12/16/2020		Y	N	U		U	1.73	0.40	ng/l
EB20201	200-56465-1	PERFLUORODECANE SULFONIC ACID	12/16/2020		Y	N	U		U	1.73	0.42	ng/l
EB20201	200-56465-1	PERFLUOROBUTYRIC ACID (PFBA)	12/16/2020		Y	N	U		U	4.33	0.98	ng/l
EB20201	200-56465-1	PERFLUOROBUTANESULFONIC ACID	12/16/2020		Y	N	U		U	1.73	0.55	ng/l
EB20201	200-56465-1	PERFLUORONONANOIC ACID	12/16/2020		Y	N	U		U	1.73	0.50	ng/l
EB20201	200-56465-1	2-(N-methyl perfluorooctanesulfonamido) acetic acid	12/16/2020		Y	N	U		U	4.33	0.68	ng/l
FB20201	200-56465-2	PERFLUOROHEXANESULFONIC ACID	12/16/2020		Y	N	U		U	1.69	0.56	ng/l
FB20201	200-56465-2	PERFLUOROHEXANOIC ACID (PFHxA)	12/16/2020		Y	N	U		U	1.69	0.70	ng/l
FB20201	200-56465-2	PERFLUORONONANOIC ACID	12/16/2020		Y	N	U		U	1.69	0.49	ng/l
FB20201	200-56465-2	Perfluorooctane Sulfonamide (FOSA)	12/16/2020		Y	N	U		U	1.69	0.48	ng/l
FB20201	200-56465-2	PERFLUOROOCTANE SULFONIC ACID	12/16/2020		Y	N	U		U	1.69	0.73	ng/l
FB20201	200-56465-2	Perfluorooctanoic acid (PFOA)	12/16/2020		Y	N	U		U	1.69	0.83	ng/l

SDG: 200564651

Analytical Method E537(M)

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
FB20201	200-56465-2	PERFLUOROTETRADECANOIC ACID (PFTeA)	12/16/2020		Y	N	U		U	1.69	0.50	ng/l
FB20201	200-56465-2	PERFLUOROBUTYRIC ACID (PFBA)	12/16/2020		Y	N	U		U	4.21	0.95	ng/l
FB20201	200-56465-2	PERFLUOROTRIDECANOIC ACID (PFTriA)	12/16/2020		Y	N	U		U	1.69	0.36	ng/l
FB20201	200-56465-2	PERFLUOROPENTANOIC ACID (PFPeA)	12/16/2020		Y	N	U		U	1.69	0.91	ng/l
FB20201	200-56465-2	Perfluoroheptanoic Acid (PFHpA)	12/16/2020		Y	N	U		U	1.69	0.39	ng/l
FB20201	200-56465-2	PERFLUOROHEPTANE SULFONATE (PFHpS)	12/16/2020		Y	N	U		U	1.69	0.33	ng/l
FB20201	200-56465-2	PERFLUORODODECANOIC ACID (PFDoA)	12/16/2020		Y	N	U		U	1.69	0.39	ng/l
FB20201	200-56465-2	PERFLUORODECANE SULFONIC ACID	12/16/2020		Y	N	U		U	1.69	0.40	ng/l
FB20201	200-56465-2	PERFLUOROBUTANESULFONIC ACID	12/16/2020		Y	N	U		U	1.69	0.53	ng/l
FB20201	200-56465-2	N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine	12/16/2020		Y	N	U		U	4.21	0.78	ng/l
FB20201	200-56465-2	2-(N-methyl perfluorooctanesulfonamido) acetic acid	12/16/2020		Y	N	U		U	4.21	0.67	ng/l
FB20201	200-56465-2	1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	12/16/2020		Y	N	U		U	4.21	0.61	ng/l
FB20201	200-56465-2	1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	12/16/2020		Y	N	U		U	1.69	0.56	ng/l
FB20201	200-56465-2	PERFLUOROUNDECANOIC ACID (PFUnA)	12/16/2020		Y	N	U		U	1.69	0.62	ng/l
FB20201	200-56465-2	PERFLUORODECANOIC ACID (PFDA)	12/16/2020		Y	N	U		U	1.69	0.39	ng/l
MW-P3-2	200-56465-4	PERFLUOROHEXANESULFONIC ACID	12/16/2020	6.18	Y	Y				1.71	0.57	ng/l
MW-P3-2	200-56465-4	Perfluorooctanoic acid (PFOA)	12/16/2020	29.8	Y	Y				1.71	0.84	ng/l
MW-P3-2	200-56465-4	PERFLUOROHEPTANE SULFONATE (PFHpS)	12/16/2020		Y	N	U		U	1.71	0.33	ng/l
MW-P3-2	200-56465-4	1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	12/16/2020		Y	N	U		U	1.71	0.56	ng/l
MW-P3-2	200-56465-4	PERFLUOROUNDECANOIC ACID (PFUnA)	12/16/2020		Y	N	U		U	1.71	0.62	ng/l
MW-P3-2	200-56465-4	PERFLUOROTRIDECANOIC ACID (PFTriA)	12/16/2020		Y	N	U		U	1.71	0.37	ng/l
MW-P3-2	200-56465-4	PERFLUOROPENTANOIC ACID (PFPeA)	12/16/2020	41.5	Y	Y				1.71	0.92	ng/l
MW-P3-2	200-56465-4	PERFLUOROOCTANE SULFONIC ACID	12/16/2020	3.64	Y	Y				1.71	0.74	ng/l
MW-P3-2	200-56465-4	Perfluorooctane Sulfonamide (FOSA)	12/16/2020		Y	N	U		U	1.71	0.49	ng/l
MW-P3-2	200-56465-4	PERFLUORONONANOIC ACID	12/16/2020		Y	N	U		U	1.71	0.50	ng/l

SDG: 200564651

Analytical Method E537(M)

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
MW-P3-2	200-56465-4	PERFLUOROHEXANOIC ACID (PFHxA)	12/16/2020	31.4	Y	Y				1.71	0.71	ng/l
MW-P3-2	200-56465-4	2-(N-methyl perfluorooctanesulfonamido) acetic acid	12/16/2020		Y	N	U		U	4.27	0.68	ng/l
MW-P3-2	200-56465-4	PERFLUOROTETRADECANOIC ACID (PFTeA)	12/16/2020		Y	N	U		U	1.71	0.50	ng/l
MW-P3-2	200-56465-4	1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	12/16/2020		Y	N	U		U	4.27	0.62	ng/l
MW-P3-2	200-56465-4	Perfluoroheptanoic Acid (PFHpA)	12/16/2020	18.7	Y	Y				1.71	0.39	ng/l
MW-P3-2	200-56465-4	N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine	12/16/2020		Y	N	U		U	4.27	0.79	ng/l
MW-P3-2	200-56465-4	PERFLUOROBUTANESULFONIC ACID	12/16/2020	10.9	Y	Y				1.71	0.54	ng/l
MW-P3-2	200-56465-4	PERFLUOROBUTYRIC ACID (PFBA)	12/16/2020	28.4	Y	Y				4.27	0.97	ng/l
MW-P3-2	200-56465-4	PERFLUORODECANE SULFONIC ACID	12/16/2020		Y	N	U		U	1.71	0.41	ng/l
MW-P3-2	200-56465-4	PERFLUORODECANOIC ACID (PFDA)	12/16/2020		Y	N	U		U	1.71	0.39	ng/l
MW-P3-2	200-56465-4	PERFLUORODODECANOIC ACID (PFDoA)	12/16/2020		Y	N	U		U	1.71	0.39	ng/l
MW-P4-2	200-56465-5	PERFLUOROHEXANOIC ACID (PFHxA)	12/16/2020	24.6	Y	Y				1.98	0.82	ng/l
MW-P4-2	200-56465-5	1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	12/16/2020		Y	N	U		U	1.98	0.65	ng/l
MW-P4-2	200-56465-5	PERFLUOROTRIDECANOIC ACID (PFTriA)	12/16/2020		Y	N	U		U	1.98	0.42	ng/l
MW-P4-2	200-56465-5	PERFLUOROTETRADECANOIC ACID (PFTeA)	12/16/2020		Y	N	U		U	1.98	0.58	ng/l
MW-P4-2	200-56465-5	PERFLUOROPENTANOIC ACID (PFPeA)	12/16/2020	24.6	Y	Y				1.98	1.07	ng/l
MW-P4-2	200-56465-5	Perfluorooctanoic acid (PFOA)	12/16/2020	55.8	Y	Y				1.98	0.97	ng/l
MW-P4-2	200-56465-5	PERFLUOROOCTANE SULFONIC ACID	12/16/2020	15.1	Y	Y				1.98	0.86	ng/l
MW-P4-2	200-56465-5	Perfluorooctane Sulfonamide (FOSA)	12/16/2020		Y	N	U		U	1.98	0.56	ng/l
MW-P4-2	200-56465-5	PERFLUORONONANOIC ACID	12/16/2020	1.53	Y	Y	J		J	1.98	0.57	ng/l
MW-P4-2	200-56465-5	PERFLUOROUNDECANOIC ACID (PFUnA)	12/16/2020		Y	N	U		U	1.98	0.72	ng/l
MW-P4-2	200-56465-5	PERFLUOROHEXANESULFONIC ACID	12/16/2020	7.39	Y	Y		J	J	1.98	0.66	ng/l
MW-P4-2	200-56465-5	Perfluoroheptanoic Acid (PFHpA)	12/16/2020	13.7	Y	Y				1.98	0.45	ng/l
MW-P4-2	200-56465-5	PERFLUOROHEPTANE SULFONATE (PFHpS)	12/16/2020	0.66	Y	Y	J		J	1.98	0.39	ng/l
MW-P4-2	200-56465-5	PERFLUORODODECANOIC ACID (PFDoA)	12/16/2020		Y	N	U		U	1.98	0.45	ng/l

SDG: 200564651

Analytical Method E537(M)

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
MW-P4-2	200-56465-5	PERFLUORODECANOIC ACID (PFDA)	12/16/2020		Y	N	U		U	1.98	0.45	ng/l
MW-P4-2	200-56465-5	PERFLUORODECANE SULFONIC ACID	12/16/2020		Y	N	U		U	1.98	0.47	ng/l
MW-P4-2	200-56465-5	PERFLUOROBUTYRIC ACID (PFBA)	12/16/2020	19.3	Y	Y				4.94	1.12	ng/l
MW-P4-2	200-56465-5	PERFLUOROBUTANESULFONIC ACID	12/16/2020	9.54	Y	Y				1.98	0.62	ng/l
MW-P4-2	200-56465-5	N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine	12/16/2020		Y	N	U		U	4.94	0.92	ng/l
MW-P4-2	200-56465-5	1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	12/16/2020		Y	N	U		U	4.94	0.71	ng/l
MW-P4-2	200-56465-5	2-(N-methyl perfluorooctanesulfonamido) acetic acid	12/16/2020		Y	N	U		U	4.94	0.78	ng/l

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

GEI Consultants
110 Walt Whitman Road, Suite 204
Huntington Station, NY 11746
ATTN: Mr. Bill Fitchett
Wfitchett@geiconsultants.com

January 19, 2021

SUBJECT: Long Island City, 30th Street, Data Usability Summary Report.

Dear Mr. Fitchett,

Enclosed are the final validation reports for the fractions listed below. This SDG was received on December 28, 2020. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #50105:

SDG #	Fraction
460-224919-1	Volatiles, Semivolatiles, 1,4-Dioxane, Chlorinated Pesticides, Polychlorinated Biphenyls, Metals

The data validation was performed under modified Category B guidelines using quality control summaries provided by the laboratory. The analyses were validated using the following documents, as applicable to each method:

- USEPA Region 2 Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-Method 8260B and 8260C, SOP HW-24, Revision 4; October 2014
- USEPA Region 2 Standard Operating Procedure for Semivolatile Data Validation SW-846 Method 8270D, SOP HW-35A, Revision 0; June 2015
- USEPA Region 2 Standard Procedure for Validating Pesticide Compounds Organochlorine Pesticides by Gas Chromatography SW-846 Method 8081B, SOP HW-44, Revision 1.1; December 2010
- USEPA Region 2 Standard Operating Procedure for Validating PCB Compounds, PCBs by Gas Chromatography SW-846 Method 8082A, SOP HW-45, Revision 1; October 2006
- USEPA Region 2 Standard Operating Procedure for the Evaluation of Metals for the Contract Laboratory Program, SOP HW-3b/c, Revision 1; September 2016
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, EPA 540-R-2017-002; January 2017
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, EPA 540-R-2017-001; January 2017

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2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Christina Rink

Christina Rink
crink@lab-data.com
Project Manager/Senior Chemist

85 pages-ADV EQUIS EDD/ NYDUSR Attachment 1

Category B **LDC #50105 (GEI Consultants, Inc. - Huntington Station, NY / 30th Street, Long Island City, Site No. C241214)**

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260D)		SVOA (8270E)		1,4-Diox (8270E -SIM)		Pest. (8081B)		PCBs (8082A0		Metals (6020B /7470A)		D.Metals (6020B /7470A)																			
Matrix: Water/Soil				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	460-224919-1	12/28/20	01/19/21	5	0	4	0	4	0	4	0	4	0	4	0	2	0																		
Total	T/CR			5	0	4	0	4	0	4	0	4	0	4	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27

Shaded cells indicate Category B validation (all other cells are Category A validation). These sample counts do not include MS/MSD, and DUPs L:\GEI\30th Street Long Island\50105ST.wpd

Site: Long Island City, 30th Street
Laboratory: Eurofins
Report No.: 460-224919-1
Reviewer: Felomina Tanguilig and Christina Rink/Laboratory Data Consultants for GEI Consultants, Inc. – Huntington Station, NY
Date: January 18, 2021

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
MW-P1	460-224919-1	VOC, SVOC, 1,4-Dioxane, Pesticide, PCB
MW-P2	460-224919-2	VOC, SVOC, 1,4-Dioxane, Pesticide, PCB
EB20201215	460-224919-3	VOC, SVOC, 1,4-Dioxane, Pesticide, PCB
FB20201214	460-224919-4	VOC, SVOC, 1,4-Dioxane, Pesticide, PCB
TB20201215	460-224919-5	VOC
MW-P2MS	460-224919-2MS	VOC, SVOC, 1,4-Dioxane, Pesticide, PCB
MW-P2MSD	460-224919-2MSD	VOC, SVOC, 1,4-Dioxane, Pesticide, PCB

Associated QC Samples(s):
Field/Trip Blanks: TB20201215, EB20201215, FB20201214
Field Duplicate pair: None Associated

The above-listed water samples were collected on December 14 through December 15, 2020 and were analyzed for volatile organic compounds (VOCs) by SW-846 method 8260D, semivolatile organic compounds (SVOCs) by SW-846 method 8270E, 1,4-dioxane by SW-846 method 8270E in selected ion monitor (SIM) mode, chlorinated pesticide by SW-846 method 8081B, and polychlorinated biphenyls (PCBs) by SW-846 method 8082A. The data validation was performed in accordance with the USEPA Region 2 *Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry,* SOP HW-24, Revision 4 (October 2014), USEPA Region 2 *Standard Operating Procedure for Semivolatile Data Validation SW-846 Method 8270D,* SOP HW-35A, Revision 0 (June 2015), the USEPA Region 2 *Standard Operating Procedure for Validating Pesticide Compounds, Organochlorine Pesticides by Gas Chromatography SW-846 Method 8081B* , SOP HW-44, Revision 1.1 (December 2010), the USEPA Region 2 *Standard Operating Procedure for Validating PCB Compounds, PCBs by Gas Chromatography SW-846 Method 8082A,* SOP HW-45, Revision 1 (October 2006), and the USEPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,* EPA 540-R-2017-002 (January 2017), modified as necessary to accommodate the non-CLP methodologies used.

The organic data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) Tunes
- GC/Electron Capture Detector (GC/ECD) Instrument Performance Checks
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Control Sample (LCS) Results
- Internal Standards
- Field Duplicate Results
- Quantitation Limits and Data Assessment
- Sample Quantitation and Compound Identification

Overall Evaluation of Data and Potential Usability Issues

All results are usable as reported or usable with minor qualification due to sample matrix or laboratory quality control outliers.

The validation findings were based on the following information.

Data Completeness

The data package was complete as defined under the requirements for the NYSDEC ASP category B laboratory deliverables.

Holding Times and Sample Preservation

All criteria were met.

GC/MS Tunes

VOC, SVOC, and 1,4-Dioxane

All criteria were met.

GC/ECD Instrument Performance Checks

Pesticide and PCB

All criteria were met.

Initial and Continuing Calibrations

VOC

Initial Calibration:

All criteria were met.

Continuing calibration:

Compounds that did not meet criteria are summarized in the following table.

Date	Standard ID	Compound	CC %D	Associated Samples		Validation Action
12/18/20	CCV	Bromoform	24.6	MW-P1	XX	UJ nondetects
		1,2-Dibromo-3-chloropropane	21.5	MW-P2	XX	UJ nondetects
				EB20201215		
				FB20201214		
				TB20201215		

X = Initial calibration (IC) relative standard deviation (%RSD) > 20; estimate (J/UJ) positive and nondetect results.
XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ) positive and nondetect results.
SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.
+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The bromoform and 1,2-dibromo-3-chloropropane results for the samples listed above were estimated due to continuing calibration exceedances. The bias cannot be determined. The results can be used for project objectives as nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

SVOC

Initial Calibration:

All criteria were met.

Continuing calibration:

Compounds that did not meet criteria are summarized in the following table.

Date	Standard ID	Compound	CC %D	Associated Samples		Validation Action
12/18/20	CCV	Benzaldehyde	44.5	MW-P2	XX	UJ nondetects
		Indeno(1,2,3-cd)pyrene	24.6	EB20201215	XX	UJ nondetects
		Dibenzo(a,h)anthracene	26.4	FB20201214	XX	UJ nondetects

Date	Standard ID	Compound	CC %D	Associated Samples		Validation Action
12/19/20	CCV	Benzaldehyde	42.7	MW-P1	XX	UJ nondetects
		3,3'-Dichlorobenzidine	38.6		XX	UJ nondetects
		Di-n-octylphthalate	32.8		XX	UJ nondetects
		Indeno(1,2,3-cd)pyrene	46.2		XX	UJ nondetects
		Dibenzo(a,h)anthracene	46.3		XX	UJ nondetects
		Benzo(g,h,i)perylene	36.7		XX	UJ nondetects

X = Initial calibration (IC) relative standard deviation (%RSD) > 20; estimate (J/UJ) positive and nondetect results.
XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ) positive and nondetect results.
SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.
+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The benzaldehyde, 3,3'-dichlorobenzidine, di-n-octylphthalate, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene results for the samples listed above were estimated due to continuing calibration exceedances. The bias cannot be determined. The results can be used for project objectives as nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

1,4-Dioxane and PCB

All criteria were met.

Pesticide

Initial calibration:

All criteria were met.

Continuing calibration:

Compounds that did not meet criteria are summarized in the following table.

Date	Instrument ID	Column	Compound	CC %D	Associated Samples		Validation Action
12/17/20	CCV	CLP2	Toxaphene	45.3	MW-P1 MW-P2 EB20201215 FB20201214	XX	UJ nondetects

X = Initial calibration (IC) relative standard deviation (%RSD) > 20; estimate (J/UJ) positive and nondetect results.
XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ) positive and nondetect results.
SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.
+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The toxaphene result for the samples listed above was estimated due to continuing calibration exceedance. The bias cannot be determined. The result can be used for project objectives as nondetect with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Blanks

VOC

Contamination was not detected in the method blanks.

No positive results were found in the trip blank sample TB20201215, equipment blank sample EB20201215, and field blank sample FB20201214 for VOC analysis.

SVOC, 1,4-Dioxane, Pesticide, and PCB

Contamination was not detected in the method blanks.

No positive results were found in the equipment blank sample EB20201215 and field blank sample FB20201214 for SVOC, 1,4-dioxane, pesticide, and PCB analyses.

Surrogate Recoveries

VOC, SVOC, 1,4-Dioxane, and Pesticide

All criteria were met.

PCB

The following table lists the surrogate percent recoveries (%R) outside of control limits in the PCB analysis and the resulting validation actions.

Sample ID	Column	Surrogate	%R (Limits)	Validation Action
MW-P1	CLP 1	Tetrachloro-m-xylene	43 (48-125)	UJ nondetects
	CLP 2	Tetrachloro-m-xylene	47 (48-125)	UJ nondetects
MW-P2	CLP 1	Tetrachloro-m-xylene	43 (48-125)	UJ nondetects
	CLP 2	Tetrachloro-m-xylene	47 (48-125)	UJ nondetects
EB20201215	CLP 1	Tetrachloro-m-xylene	37 (48-125)	UJ nondetects
	CLP 2	Tetrachloro-m-xylene	40 (48-125)	UJ nondetects
FB20201214	CLP 1	Tetrachloro-m-xylene	33 (48-125)	UJ nondetects
	CLP 2	Tetrachloro-m-xylene	38 (48-125)	UJ nondetects

The MW-P1, MW-P2, EB20201215, and FB20201214 PCB results may be biased low. The positive results can be used for project objectives as nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

MS/MSD Results

VOC and 1,4-Dioxane

MS/MSD analyses were performed on sample MW-P2 for VOC and 1,4-dioxane analyses. All criteria were met.

SVOC

MS/MSD analyses were performed on sample MW-P2 for SVOC analysis. The following table lists the MS/MSD percent recoveries (%R) outside of control limits in the SVOC analysis and the resulting validation actions.

MS ID	Compound	MS %R (Limits)	MS/D %R (Limits)	Affected Sample	Validation Action
MW-P2MS/MSD	3,3'-Dichlorobenzidine	51 (59-125)	48 (59-125)	MW-P2	UJ nondetects
	4,6-Dinitro-2-methylphenol	-	65 (69-149)		UJ nondetects
	4-Bromophenyl-phenyl ether	-	64 (65-115)		UJ nondetects
	Benzo(a)anthracene	-	68 (71-114)		UJ nondetects
	Bis(2-ethylhexyl)phthalate	-	54 (60-135)		UJ nondetects
	Chrysene	-	67 (74-122)		UJ nondetects
	Di-n-butylphthalate	-	65 (66-113)		UJ nondetects
	Fluoranthene	-	69 (66-116)		UJ nondetects
	N-Nitrosodiphenylamine	-	58 (67-110)		UJ nondetects
	Phenanthrene	-	68 (69-108)		UJ nondetects
MW-P2MS/MSD	Atrazine	163 (10-150)	-	MW-P2	None
	Benzaldehyde	147 (47-134)	-		
	Benzo(a)pyrene	108 (67-106)	-		

- Within control limits

The 3,3'-dichlorobenzidine, 4,6-dinitro-2-methylphenol, 4-bromophenyl-phenyl ether, benzo(a)anthracene, bis(2-ethylhexyl)phthalate, chrysene, di-n-butylphthalate, fluoranthene, n-nitrosodiphenylamine, and phenanthrene results may be biased low due to low MS/MSD percent recoveries. The results can be used for project objectives as nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Validation action was not required for atrazine, benzaldehyde, and benzo(a)pyrene due to high MS/MSD recoveries as positive results only are affected and these compounds were not detected in the associated sample.

The following table lists the MS/MSD relative percent differences (RPD) outside of control limits in the SVOC analysis and the resulting validation actions.

MS ID	Compound	RPD (Limits)	Affected Sample	Validation Action
MW-P2MS/MSD	2,2'-Oxybis(1-chloropropane)	33 (≤30)	MW-P2	None
	2,4,5-Trichlorophenol	31 (≤30)		
	2,4-Dichlorophenol	31 (≤30)		
	2,4-Dimethylphenol	33 (≤30)		
	2,4-Dinitrotoluene	32 (≤30)		
	2,6-Dinitrotoluene	36 (≤30)		
	2-Chlorophenol	30 (≤30)		
	2-Nitrophenol	34 (≤30)		
	4-Methylphenol	33 (≤30)		
	Acetophenone	31 (≤30)		
	Anthracene	31 (≤30)		
	Benzaldehyde	34 (≤30)		
	Benzo(a)pyrene	31 (≤30)		
	Benzo(g,h,i)perylene	32 (≤30)		
	Bis(2-chloroethoxy)methane	33 (≤30)		
	Bis(2-chloroethyl) ether	33 (≤30)		
	Bis(2-ethylhexyl)phthalate	38 (≤30)		
	Butylbenzylphthalate	31 (≤30)		
	Carbazole	32 (≤30)		
	Dibenzo(a,h)anthracene	33 (≤30)		
	Diethylphthalate	31 (≤30)		
	Di-n-butylphthalate	32 (≤30)		
	Di-n-octylphthalate	37 (≤30)		
	Fluoranthene	33 (≤30)		
	Hexachloroethane	33 (≤30)		
	Indeno(1,2,3-cd)pyrene	32 (≤30)		
	Isophorone	34 (≤30)		
	Naphthalene	35 (≤30)		
	N-Nitroso-di-n-propylamine	31 (≤30)		
	Pyrene	31 (≤30)		

Validation action was not required for the compounds listed above due to MS/MSD relative percent difference exceedances as positive results only are affected and these compounds were not detected in the associated sample.

Pesticide

MS/MSD analyses were performed on sample MW-P2 for pesticide analysis. The following table lists the MS/MSD relative percent differences (RPD) outside of control limits in the pesticide analysis and the resulting validation actions.

MS ID	Column	Compound	RPD (Limits)	Affected Sample	Validation Action
MW-P2MS/MSD	CLP2	4,4'-DDD	32 (≤30)	MW-P2	None
		4,4'-DDT	33 (≤30)		
		Dieldrin	31 (≤30)		
		Endosulfan I	31 (≤30)		
		Endosulfan II	33 (≤30)		
		Endosulfan sulfate	33 (≤30)		
		Endrin aldehyde	34 (≤30)		
		Endrin ketone	33 (≤30)		

Validation action was not required for 4,4'-DDD, 4,4'-DDT, dieldrin, endosulfan I, endosulfan II, endosulfan sulfate, endrin aldehyde, and endrin ketone due to MS/MSD relative percent difference exceedances as positive results only are affected and these compounds were not detected in the associated sample.

PCB

MS/MSD analyses were performed on sample MW-P2 for PCB analysis. The following table lists the MS/MSD percent recoveries (%R) outside of control limits in the PCB analysis and the resulting validation actions.

MS ID	Column	Compound	MS %R (Limits)	MS/D %R (Limits)	Affected Sample	Validation Action
MW-P2MS/MSD	CLP1	Aroclor-1260	491 (75-150)	433 (75-150)	MW-P2	None
MW-P2MS/MSD	CLP2	Aroclor-1260	489 (75-150)	450 (75-150)	MW-P2	None

- Within control limits

Validation action was not required for aroclor-1260 due to high MS/MSD recoveries as positive results only are affected and this compound was not detected in the associated sample.

LCS Results

VOC, 1,4-Dioxane, and PCB

All criteria were met.

SVOC

The following table lists the LCS/LCSD percent recoveries (%R) outside of control limits in the SVOC analysis and the resulting validation actions.

LCS ID	Compound	LCS %R (Limits)	LCS/D %R (Limits)	Affected Sample	Validation Action
LCS/LCSD 460-747748	Atrazine	182 (10-150)	168 (10-150)	MW-P2	None
	Benzaldehyde	165 (47-134)	155 (47-134)	EB20201215	
	Benzo(a)pyrene	114 (67-106)	111 (67-106)	FB20201214	
LCS/LCSD 460-748031	Atrazine	163 (10-150)	162 (10-150)	MW-P1	None
	Benzaldehyde	154 (47-134)	156 (47-134)		
	Benzo(a)pyrene	110 (67-106)	109 (67-106)		
	Indeno(1,2,3-cd)pyrene	144 (55-139)	143 (55-139)		

- Within control limits

Validation action was not required for atrazine, benzaldehyde, benzo(a)pyrene, and indeno(1,2,3-cd)pyrene due to high LCS/LCSD percent recoveries as positive results only are affected and these compounds were not detected in the associated samples.

Pesticide

The following table lists the LCS/LCSD percent recoveries (%R) outside of control limits in the pesticide analysis and the resulting validation actions.

LCS ID	Column	Compound	LCS %R (Limits)	LCS/D %R (Limits)	Affected Sample	Validation Action
LCS/LCSD 460-747429	CLP1	Aldrin Endrin aldehyde	- -	255 (46-144) 208 (53-140)	MW-P1 MW-P2 EB20201215 FB20201214	None
LCS/LCSD 460-747429	CLP2	Methoxychlor	-	170 (52-145)	MW-P1 MW-P2 EB20201215 FB20201214	None

- Within control limits

Validation action was not required for aldrin, endrin aldehyde, and methoxychlor due to high LCS/LCSD percent recoveries as positive results only are affected and these compounds were not detected in the associated samples.

The following table lists the LCS/LCSD relative percent differences (RPD) outside of control limits in the pesticide analysis and the resulting validation actions.

LCS ID	Column	Compound	RPD (Limits)	Affected Sample	Validation Action
LCS/LCSD 460-747429	CLP1	Aldrin Endrin aldehyde	78 (≤30) 67 (≤30)	MW-P1 MW-P2 EB20201215 FB20201214	None
LCS/LCSD 460-747429	CLP2	Methoxychlor	43 (≤30)	MW-P1 MW-P2 EB20201215 FB20201214	None

Validation action was not required for aldrin, endrin aldehyde, and methoxychlor due to LCS/LCSD relative percent difference exceedances as positive results only are affected and these compounds were not detected in the associated samples.

Internal Standards

All criteria were met.

Field Duplicate Results

A field duplicate pair was not associated with this sample set. Validation action was not required on this basis.

Quantitation Limits and Data Assessment

No results were reported below the RL and above the MDL in the VOC, SVOC, 1,4-dioxane, pesticide, and PCB analyses.

Dilutions were not required for VOC, SVOC, 1,4-dioxane, pesticide, and PCB analyses.

Sample Quantitation and Compound Identification

Calculations were spot-checked; no discrepancies were noted.

DATA VALIDATION QUALIFIERS

U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.

J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.

JN - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.

R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

LDC #: 50105A1a
SDG #: 460-224919-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Category B

Date: 1/14/21
Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / A	% RSD ≤ 20 ICV ≤ 30
IV.	Continuing calibration	SW	CCV ≤ 20
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	EB=3 FB=4 TB=5
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	A	
IX.	Laboratory control samples	A	LCS
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	no Results < RL > MDL
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	MW-P1	460-224919-1	Water	12/15/20
2	MW-P2	460-224919-2	Water	12/15/20
3	EB20201215	460-224919-3	Water	12/15/20
4	FB20201214	460-224919-4	Water	12/14/20
5	TB20201215	460-224919-5	Water	12/15/20
6	MW-P2MS	460-224919-2MS	Water	12/15/20
7	MW-P2MSD	460-224919-2MSD	Water	12/15/20
8				
9				

Notes:

	MB 460-747698						

LDC #: 50105A1a

VALIDATION FINDINGS CHECKLIST

Reviewer: FT

Method: Volatiles (EPA SW 846 Method 8260 D)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
Were all percent relative standard deviations (%RSD) ≤ 30%/15% / 20% and relative response factors (RRF) ≥ 0.05?	✓			
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 20% / 30%?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Were all percent differences (%D) ≤ 20% and relative response factors (RRF) ≥ 0.05?		✓		
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks were identified in this SDG?	✓			
Were target compounds detected in the field blanks?		✓		
VII. Surrogate spikes				
Were all surrogate percent recovery (%R) within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	

Validation Area				
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			
IX. Laboratory control samples				
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
X. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds detected in the field duplicates?			✓	
XI. Internal standards				
Were internal standard area counts within -50% to +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XII. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	AA. Tetrachloroethene	AAA. 1,3,5-Trimethylbenzene	AAAA. Ethyl tert-butyl ether	A1. 1,3-Butadiene
B. Bromomethane	BB. 1,1,2,2-Tetrachloroethane	BBB. 4-Chlorotoluene	BBBB. tert-Amyl methyl ether	B1. Hexane
C. Vinyl choride	CC. Toluene	CCC. tert-Butylbenzene	CCCC. 1-Chlorohexane	C1. Heptane
D. Chloroethane	DD. Chlorobenzene	DDD. 1,2,4-Trimethylbenzene	DDDD. Isopropyl alcohol	D1. Propylene
E. Methylene chloride	EE. Ethylbenzene	EEE. sec-Butylbenzene	EEEE. Acetonitrile	E1. Freon 11
F. Acetone	FF. Styrene	FFF. 1,3-Dichlorobenzene	FFFF. Acrolein	F1. Freon 12
G. Carbon disulfide	GG. Xylenes, total	GGG. p-Isopropyltoluene	GGGG. Acrylonitrile	G1. Freon 113
H. 1,1-Dichloroethene	HH. Vinyl acetate	HHH. 1,4-Dichlorobenzene	HHHH. 1,4-Dioxane	H1. Freon 114
I. 1,1-Dichloroethane	II. 2-Chloroethylvinyl ether	III. n-Butylbenzene	IIII. Isobutyl alcohol	I1. 2-Nitropropane
J. 1,2-Dichloroethene, total	JJ. Dichlorodifluoromethane	JJJ. 1,2-Dichlorobenzene	JJJJ. Methacrylonitrile	J1. Dimethyl disulfide
K. Chloroform	KK. Trichlorofluoromethane	KKK. 1,2,4-Trichlorobenzene	KKKK. Propionitrile	K1. 2,3-Dimethyl pentane
L. 1,2-Dichloroethane	LL. Methyl-tert-butyl ether	LLL. Hexachlorobutadiene	LLLL. Ethyl ether	L1. 2,4-Dimethyl pentane
M. 2-Butanone	MM. 1,2-Dibromo-3-chloropropane	MMM. Naphthalene	MMMM. Benzyl chloride	M1. 3,3-Dimethyl pentane
N. 1,1,1-Trichloroethane	NN. Methyl ethyl ketone	NNN. 1,2,3-Trichlorobenzene	NNNN. Iodomethane	N1. 2-Methylpentane
O. Carbon tetrachloride	OO. 2,2-Dichloropropane	OOO. 1,3,5-Trichlorobenzene	OOOO.1,1-Difluoroethane	O1. 3-Methylpentane
P. Bromodichloromethane	PP. Bromochloromethane	PPP. trans-1,2-Dichloroethene	PPPP. Tetrahydrofuran	P1. 3-Ethylpentane
Q. 1,2-Dichloropropane	QQ. 1,1-Dichloropropene	QQQ. cis-1,2-Dichloroethene	QQQQ. Methyl acetate	Q1. 2,2-Dimethylpentane
R. cis-1,3-Dichloropropene	RR. Dibromomethane	RRR. m,p-Xylenes	RRRR. Ethyl acetate	R1. 2,2,3- Trimethylbutane
S. Trichloroethene	SS. 1,3-Dichloropropane	SSS. o-Xylene	SSSS. Cyclohexane	S1. 2,2,4-Trimethylpentane
T. Dibromochloromethane	TT. 1,2-Dibromoethane	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	TTTT. Methyl cyclohexane	T1. 2-Methylhexane
U. 1,1,2-Trichloroethane	UU. 1,1,1,2-Tetrachloroethane	UUU. 1,2-Dichlorotetrafluoroethane	UUUU. Allyl chloride	U1. Nonanal
V. Benzene	VV. Isopropylbenzene	VVV. 4-Ethyltoluene	VVVV. Methyl methacrylate	V1. 2-Methylnaphthalene
W. trans-1,3-Dichloropropene	WW. Bromobenzene	WWW. Ethanol	WWWW. Ethyl methacrylate	W1. Methanol
X. Bromoform	XX. 1,2,3-Trichloropropane	XXX. Di-isopropyl ether	XXXX. cis-1,4-Dichloro-2-butene	X1. 1,2,3-Trimethylbenzene
Y. 4-Methyl-2-pentanone	YY. n-Propylbenzene	YYY. tert-Butanol	YYYY. trans-1,4-Dichloro-2-butene	Y1. 2-Propanol
Z. 2-Hexanone	ZZ. 2-Chlorotoluene	ZZZ. tert-Butyl alcohol	ZZZZ. Pentachloroethane	Z1.

LDC #: 30105A1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: FT

METHOD: GC/MS VOA (EPA SW 846 Method 8260 D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y (N) N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?
Y (N) N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y (N) N/A Were all %D and RRFs within the validation criteria of ≤20 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: <20.0%)	Finding RRF (Limit: >0.05)	Associated Samples	Qualifications
	12/18/20	ccv	X	24.6		All	J/UJ/A ND
	0650		MM	21.5		↓	↓

LDC #: 50105A1a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

RRF = $(A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of compound,
C_x = Concentration of compound,
S = Standard deviation of the RRFs
X = Mean of the RRFs

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported 20/100/400 RRF (std)	Recalc 20/100/400 RRF (std)	Reported Average RRF (initial)	Recalc Average RRF (initial)	Reported %RSD	Recalc %RSD
1	ICAL	12/12/20	K (1st internal standard)	0.4314	0.4314	0.4408	0.4408	5.2	5.2
			F (2nd internal standard)	0.2184	0.2184	0.2469	0.2469	14.4	14.4
			HHHH (3rd internal standard)	1.0148	1.0148	1.0198	1.0198	8.0	8.0
			CC (4th internal standard)	1.3452	1.3452	1.3948	1.3948	4.4	4.4
2			BB (1st internal standard)	0.7897	0.7897	0.8123	0.8123	3.9	3.9
			(2nd internal standard)						
			(3rd internal standard)						
			(4th internal standard)						
3			(1st internal standard)						
			(2nd internal standard)						
			(3rd internal standard)						
			(4th internal standard)						
4			(1st internal standard)						
			(2nd internal standard)						
			(3rd internal standard)						
			(4th internal standard)						

LDC #: 50105A1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: FT

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
A_x = Area of compound, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference internal Standard)	Average RRF (initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported %D	Recalculated %D
1	CCV 0650	12/18/20	K (IS1)	0.4408	0.4150	0.4150	5.8	5.8
			F (IS2)	0.2469	0.2012	0.2012	18.5	18.5
			HHHH (IS3)	1.0198	0.8899	0.8899	12.7	12.7
			CC (IS4)	1.3948	1.310	1.310	6.1	6.1
			BB (IS5)	0.8123	0.7390	0.7390	9.0	9.0
2			(IS1)					
			(IS2)					
			(IS3)					
			(IS4)					
			(IS5)					
3			(IS1)					
			(IS2)					
			(IS3)					
			(IS4)					
			(IS5)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 50105A1a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: FT

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #2

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	50.0	50.8	102	102	0
1,2-Dichloroethane-d4	↓	52.5	105	105	↓
Toluene-d8		49.7	99	99	
Bromofluorobenzene		47.8	96	96	

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 50105A1a

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: FT

METHOD: GC/MS VOA (EPA Method 8260 D)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA

Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentration

RPD = I MSC - MSC I * 2/(MSC + MSDC)

MSC = Matrix spike concentration; MSDC = Matrix spike duplicate concentration

MS/MSD sample: 6 & 7

Compound	Spike Added (ug/L)		Sample Concentration (ug/L)	Spiked Sample Concentration (ug/L)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	-------	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
1,1-Dichloroethene	20.0	20.0	ND	19.7	20.5	99	99	103	103	4	4
Trichloroethene	↓	↓	↓	19.0	19.3	95	95	96	96	3	3
Benzene	↓	↓	↓	20.3	19.6	101	101	98	98	3	3
Toluene	↓	↓	↓	19.9	19.3	99	99	96	96	3	3
Chlorobenzene	↓	↓	↓	19.2	19.2	96	96	96	96	0	0

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 50105A1a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: FT

METHOD: GC/MS VOA (EPA Method 8260 D)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration; SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboraotry control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: lcs 460-747698

Compound	Spike Added (ug/L)		Spiked Sample Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
1,1-Dichloroethene	20.0	NA	18.7	NA	93	93				
Trichloroethene			17.3		86	86				
Benzene			18.2		91	91				
Toluene			18.3		92	92				
Chlorobenzene			18.1		90	90	NA			

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 50105A1a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260 D)

Y N N/A Were all reported results recalculated and verified for all level IV samples?

Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
RRF	=	Relative response factor of the calibration standard.
V_o	=	Volume or weight of sample pruged in milliliters (ml) or grams (g).
Df	=	Dilution factor.
%S	=	Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. #1, K:

Conc. = $\frac{(7416)(50.0)}{(381907)(0.4408)}$

= 2.2 ug/L

#	Sample ID	Compound	Reported Concentration (ug/L	Calculated Concentration (ug/L	Qualification
	#1	K	2.2	2.2	

LDC #: 50105A2a
SDG #: 460-224919-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Category B

Date: 1/14/21
Page: 1 of
Reviewer:
2nd Reviewer:

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270E)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / A	%RSD ≤ 20, r² ICV ≤ 30
IV.	Continuing calibration	SW	CCV ≤ 20
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	EB = 3 FB = 4
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	SW	
IX.	Laboratory control samples	SW	LCS ID
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	MW-P1	460-224919-1	Water	12/15/20
2	MW-P2	460-224919-2	Water	12/15/20
3	EB20201215	460-224919-3	Water	12/15/20
4	FB20201214	460-224919-4	Water	12/14/20
5	MW-P2MS	460-224919-2MS	Water	12/15/20
6	MW-P2MSD	460-224919-2MSD	Water	12/15/20
7				
8				
9				

Notes:

1	MB 460-747748						
2	MB 460-748031						

LDC #: 50109A2a

VALIDATION FINDINGS CHECKLIST

Reviewer: FT

Method: Semivolatiles (EPA SW 846 Method 8270 E)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. GC/MS Instrument performance check				
Were the DFTPP performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 15/30% or 20% and relative response factors (RRF) within method criteria?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 20% or 30%?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 20% and relative response factors (RRF) within method criteria?		✓		
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks? If yes, please see the blanks validation findings worksheet.		✓		
VI. Field blanks				
Were field blanks were identified in this SDG?	✓			
Were target compounds detected in the field blanks?		✓		
VII. Surrogate spikes				
Were all surrogate percent recovery (%R) within QC limits?	✓			
If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any percent recoveries (%R) was less than 10%, was a reanalysis performed to confirm %R ?			✓	
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?	✓			

Validation Area	Yes	No	NA	Findings/Comments
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		✓		
IX. Laboratory control samples				
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?		✓		
X. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds detected in the field duplicates?			✓	
XI. Internal standards				
Were internal standard area counts within -50% to +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XII. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS SVOA

A. Phenol	CC. Dimethylphthalate	EEE. Bis(2-ethylhexyl)phthalate	GGGG. C30-Hopane	I1. Methyl methanesulfonate
B. Bis (2-chloroethyl) ether	DD. Acenaphthylene	FFF. Di-n-octylphthalate	HHHH. 1-Methylphenanthrene	J1. Ethyl methanesulfonate
C. 2-Chlorophenol	EE. 2,6-Dinitrotoluene	GGG. Benzo(b)fluoranthene	IIII. 1,4-Dioxane	K1. o,o',o"-Triethylphosphorothioate
D. 1,3-Dichlorobenzene	FF. 3-Nitroaniline	HHH. Benzo(k)fluoranthene	JJJJ. Acetophenone	L1. n-Phenylene diamine
E. 1,4-Dichlorobenzene	GG. Acenaphthene	III. Benzo(a)pyrene	KKKK. Atrazine	M1. 1,4-Naphthoquinone
F. 1,2-Dichlorobenzene	HH. 2,4-Dinitrophenol	JJJ. Indeno(1,2,3-cd)pyrene	LLLL. Benzaldehyde	N1. N-Nitro-o-toluidine
G. 2-Methylphenol	II. 4-Nitrophenol	KKK. Dibenz(a,h)anthracene	MMMM. Caprolactam	O1. 1,3,5-Trinitrobenzene
H. 2,2'-Oxybis(1-chloropropane)	JJ. Dibenzofuran	LLL. Benzo(g,h,i)perylene	NNNN. 2,6-Dichlorophenol	P1. Pentachlorobenzene
I. 4-Methylphenol	KK. 2,4-Dinitrotoluene	MMM. Bis(2-Chloroisopropyl)ether	OOOO. 1,2-Diphenylhydrazine	Q1. 4-Aminobiphenyl
J. N-Nitroso-di-n-propylamine	LL. Diethylphthalate	NNN. Aniline	PPPP. 3-Methylphenol	R1. 2-Naphthylamine
K. Hexachloroethane	MM. 4-Chlorophenyl-phenyl ether	OOO. N-Nitrosodimethylamine	QQQQ. 3&4-Methylphenol	S1. Triphenylene
L. Nitrobenzene	NN. Fluorene	PPP. Benzoic Acid	RRRR. 4-Dimethyldibenzothiophene (4MDT)	T1. Octachlorostyrene
M. Isophorone	OO. 4-Nitroaniline	QQQ. Benzyl alcohol	SSSS. 2/3-Dimethyldibenzothiophene (4MDT)	U1. Famphur
N. 2-Nitrophenol	PP. 4,6-Dinitro-2-methylphenol	RRR. Pyridine	TTTT. 1-Methyldibenzothiophene (1MDT)	V1. 1,4-phenylenediamine
O. 2,4-Dimethylphenol	QQ. N-Nitrosodiphenylamine	SSS. Benzidine	UUUU.. 2,3,4,6-Tetrachlorophenol	W1. Methapyrilene
P. Bis(2-chloroethoxy)methane	RR. 4-Bromophenyl-phenylether	TTT. 1-Methylnaphthalene	VVVV. 1,2,4,5-Tetrachlorobenzene	X1. Pentachloroethane
Q. 2,4-Dichlorophenol	SS. Hexachlorobenzene	UUU.Benzo(b)thiophene	WWWW.. 2-Picoline	Y1. 3,3'-Dimethylbenzidine
R. 1,2,4-Trichlorobenzene	TT. Pentachlorophenol	VVV.Benzonaphthothiophene	XXXX. 3-Methylcholanthrene	Z1. o-Toluidine
S. Naphthalene	UU. Phenanthrene	WWW.Benzo(e)pyrene	YYYY. a,a-Dimethylphenethylamine	A2. 1-Naphthylamine
T. 4-Chloroaniline	VV. Anthracene	XXX. 2,6-Dimethylnaphthalene	ZZZZ. Hexachloropropene	B2. 4-Aminobiphenyl
U. Hexachlorobutadiene	WW. Carbazole	YYY. 2,3,5-Trimethylnaphthalene	A1. N-Nitrosodiethylamine	C2. 4-Nitroquinoline-1-oxide
V. 4-Chloro-3-methylphenol	XX. Di-n-butylphthalate	ZZZ. Perylene	B1. N-Nitrosodi-n-butylamine	D2. Hexachloropene
W. 2-Methylnaphthalene	YY. Fluoranthene	AAAA. Dibenzothiophene	C1. N-Nitrosomethylethylamine	E2. Bis (2-chloro-1-methylethyl) ether
X. Hexachlorocyclopentadiene	ZZ. Pyrene	BBBB. Benzo(a)fluoranthene	D1. N-Nitrosomorpholine	F2. Bifenthrin
Y. 2,4,6-Trichlorophenol	AAA. Butylbenzylphthalate	CCCC. Benzo(b)fluorene	E1. N-Nitrosopyrrolidine	G2. Cyfluthrin
Z. 2,4,5-Trichlorophenol	BBB. 3,3'-Dichlorobenzidine	DDDD. cis/trans-Decalin	F1. Phenacetin	H2. Cypermethrin
AA. 2-Chloronaphthalene	CCC. Benzo(a)anthracene	EEEE. 1,1'-Biphenyl	G1. 2-Acetylaminofluorene	I2. Permethrin (cis/trans)
BB. 2-Nitroaniline	DDD. Chrysene	FFFF. Retene	H1. Pronamide	J2. 5-Nitro-o-toluidine

LDC #: 50105A2a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Reviewer: FT

METHOD: GC/MS BNA (EPA SW 846 Method 8270 E)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y (N) N/A Was a continuing calibration standard analyzed at least once every 12 hours of sample analysis for each instrument?

Y (N) N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?

Y (N) N/A Were all %D and RRFs within the validation criteria of ≤20mid/50low level %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤20.0%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
	12/18/20 2106	CCV	LLLL	44.5		2, 3, 4, 5, 6 MB 460-747748	J/UJ/A all ND
			~~JJJ~~	24.6			
			KKK	26.4			
	12/19/20 1621	CCV	LLLL	42.7		1, MB 460-748031	J/UJ/A all ND
			BBB	38.6			
			FFF	32.8			
			JJJ	46.2			
			KKK	46.3			
			LLL	36.7			

LDC #: 50105A2a

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

METHOD: GC/MS BNA (EPA SW 846 Method 8270 E)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.

(Y) N N/A Was a MS/MSD analyzed every 20 samples of each matrix?

Y (N) N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	5,6	~~BBB~~	~~51 (59-125)~~	( )	( )	2	all ND
		see following pages	( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )	All %R = J/UJ/A	
			( )	( )	( )	except %R = Jdet/A KKK, LLLL + III	
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )	All %RPD =	Jdet/A
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 460-747748/3-A
Matrix: Water
Analysis Batch: 747935

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 747748

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Phenanthrene			80.0	72.3		ug/L		90	69 - 108	6	30
Phenol			80.0	30.2		ug/L		38	20 - 53	5	30
Pyrene			80.0	75.0		ug/L		94	66 - 121	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*101*		*36 - 159*
2-Fluorobiphenyl	*71*		*42 - 127*
2-Fluorophenol (Surr)	*47*		*18 - 72*
Nitrobenzene-d5 (Surr)	*88*		*46 - 137*
Phenol-d5 (Surr)	*33*		*10 - 50*
Terphenyl-d14 (Surr)	*102*		*39 - 150*

Lab Sample ID: 460-224919-2 MS
Matrix: Water
Analysis Batch: 747935

Client Sample ID: MW-P2
Prep Type: Total/NA
Prep Batch: 747748

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1'-Biphenyl	10	U	80.0	66.1		ug/L		83	59 - 102
1,2,4,5-Tetrachlorobenzene	10	U	80.0	55.3		ug/L		69	48 - 109
2,2'-oxybis[1-chloropropane]	10	U	80.0	74.3		ug/L		93	38 - 124
2,3,4,6-Tetrachlorophenol	10	U	80.0	63.3		ug/L		79	64 - 123
2,4,5-Trichlorophenol	10	U	80.0	69.6		ug/L		87	64 - 110
2,4,6-Trichlorophenol	10	U	80.0	69.8		ug/L		87	64 - 115
2,4-Dichlorophenol	10	U	80.0	68.2		ug/L		85	65 - 107
2,4-Dimethylphenol	10	U	80.0	65.3		ug/L		82	59 - 101
2,4-Dinitrophenol	30	U	160	121		ug/L		76	36 - 150
2,4-Dinitrotoluene	2.0	U	80.0	80.9		ug/L		101	63 - 122
2,6-Dinitrotoluene	2.0	U	80.0	81.8		ug/L		102	71 - 118
2-Chloronaphthalene	10	U	80.0	63.4		ug/L		79	57 - 102
2-Chlorophenol	10	U	80.0	59.5		ug/L		74	57 - 93
2-Methylnaphthalene	10	U	80.0	65.4		ug/L		82	57 - 103
2-Methylphenol	10	U	80.0	52.5		ug/L		66	45 - 86
2-Nitroaniline	20	U	80.0	70.3		ug/L		88	54 - 123
2-Nitrophenol	10	U	80.0	71.0		ug/L		89	60 - 126
3,3'-Dichlorobenzidine	20	U	80.0	40.8	* BBB	ug/L		51	59 - 125
3-Nitroaniline	20	U	80.0	64.6		ug/L		81	57 - 110
4,6-Dinitro-2-methylphenol	30	U	160	121		ug/L		75	69 - 149
4-Bromophenyl phenyl ether	10	U	80.0	66.7		ug/L		83	65 - 115
4-Chloro-3-methylphenol	10	U	80.0	65.6		ug/L		82	60 - 107
4-Chloroaniline	1.0	U	80.0	60.9		ug/L		76	43 - 105
4-Chlorophenyl phenyl ether	10	U	80.0	62.7		ug/L		78	60 - 113
4-Methylphenol	10	U	80.0	48.8		ug/L		61	37 - 86
4-Nitroaniline	20	U	80.0	60.4		ug/L		75	52 - 122
4-Nitrophenol	30	U	160	44.9		ug/L		28	17 - 61
Acenaphthene	10	U	80.0	65.6		ug/L		82	54 - 108
Acenaphthylene	10	U	80.0	69.8		ug/L		87	64 - 102
Acetophenone	10	U	80.0	76.8		ug/L		96	65 - 109
Anthracene	10	U	80.0	74.7		ug/L		93	69 - 110

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 460-224919-2 MS
Matrix: Water
Analysis Batch: 747935

Client Sample ID: MW-P2
Prep Type: Total/NA
Prep Batch: 747748

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Atrazine	10	U *	40.0	65.2	E * KKKK	ug/L		163	10 - 150
Benzaldehyde	10	U *	40.0	58.8	E * LLLL	ug/L		147	47 - 134
Benzo[a]anthracene	1.0	U	80.0	73.4		ug/L		92	71 - 114
Benzo[a]pyrene	1.0	U *	80.0	86.7	* III	ug/L		108	67 - 106
Benzo[b]fluoranthene	2.0	U	80.0	79.5		ug/L		99	65 - 113
Benzo[g,h,i]perylene	10	U	80.0	90.1		ug/L		113	48 - 145
Benzo[k]fluoranthene	1.0	U	80.0	85.0		ug/L		106	66 - 116
Bis(2-chloroethoxy)methane	10	U	80.0	73.9		ug/L		92	64 - 114
Bis(2-chloroethyl)ether	1.0	U	80.0	75.1		ug/L		94	57 - 112
Bis(2-ethylhexyl) phthalate	10	U	80.0	62.9		ug/L		79	60 - 135
Butyl benzyl phthalate	10	U	80.0	70.6		ug/L		88	63 - 126
Caprolactam	10	U	40.0	15.2		ug/L		38	10 - 60
Carbazole	10	U	80.0	77.9		ug/L		97	68 - 113
Chrysene	10	U	80.0	73.2		ug/L		92	74 - 122
Dibenz(a,h)anthracene	1.0	U	80.0	97.1		ug/L		121	57 - 144
Dibenzofuran	10	U	80.0	67.2		ug/L		84	65 - 104
Diethyl phthalate	10	U	80.0	75.0		ug/L		94	65 - 105
Dimethyl phthalate	10	U	80.0	76.0		ug/L		95	68 - 105
Di-n-butyl phthalate	10	U	80.0	72.0		ug/L		90	66 - 113
Di-n-octyl phthalate	10	U	80.0	68.8		ug/L		86	40 - 133
Fluoranthene	10	U	80.0	76.7		ug/L		96	66 - 116
Fluorene	10	U	80.0	68.5		ug/L		86	64 - 108
Hexachlorobenzene	1.0	U	80.0	70.4		ug/L		88	59 - 129
Hexachlorobutadiene	2.0	U	80.0	33.3		ug/L		42	33 - 98
Hexachlorocyclopentadiene	10	U	80.0	34.1		ug/L		43	14 - 97
Hexachloroethane	2.0	U	80.0	39.5		ug/L		49	27 - 94
Indeno[1,2,3-cd]pyrene	2.0	U	80.0	93.9		ug/L		117	55 - 139
Isophorone	10	U	80.0	80.4		ug/L		100	64 - 113
Naphthalene	2.0	U	80.0	70.2		ug/L		88	56 - 99
Nitrobenzene	1.0	U	80.0	81.5		ug/L		102	67 - 109
N-Nitrosodi-n-propylamine	1.0	U	80.0	79.3		ug/L		99	60 - 111
N-Nitrosodiphenylamine	10	U	80.0	54.2		ug/L		68	67 - 110
Pentachlorophenol	30	U	160	133		ug/L		83	57 - 135
Phenanthrene	10	U	80.0	73.3		ug/L		92	69 - 108
Phenol	10	U	80.0	25.8		ug/L		32	20 - 53
Pyrene	10	U	80.0	74.3		ug/L		93	66 - 121

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*94*		*36 - 159*
2-Fluorobiphenyl	*61*		*42 - 127*
2-Fluorophenol (Surr)	*37*		*18 - 72*
Nitrobenzene-d5 (Surr)	*84*		*46 - 137*
Phenol-d5 (Surr)	*26*		*10 - 50*
Terphenyl-d14 (Surr)	*69*		*39 - 150*

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 460-224919-2 MSD
Matrix: Water
Analysis Batch: 747935

Client Sample ID: MW-P2
Prep Type: Total/NA
Prep Batch: 747748

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1'-Biphenyl	10	U	80.0	49.1		ug/L		61	59 - 102	29	30
1,2,4,5-Tetrachlorobenzene	10	U	80.0	43.4		ug/L		54	48 - 109	24	30
2,2'-oxybis[1-chloropropane]	10	U	80.0	53.0	* H	ug/L		66	38 - 124	33	30
2,3,4,6-Tetrachlorophenol	10	U	80.0	50.8		ug/L		64	64 - 123	22	30
2,4,5-Trichlorophenol	10	U	80.0	51.1	* Z	ug/L		64	64 - 110	31	30
2,4,6-Trichlorophenol	10	U	80.0	53.6		ug/L		67	64 - 115	26	30
2,4-Dichlorophenol	10	U	80.0	50.0	* Q	ug/L		63	65 - 107	31	30
2,4-Dimethylphenol	10	U	80.0	46.9	* O	ug/L		59	59 - 101	33	30
2,4-Dinitrophenol	30	U	160	105		ug/L		66	36 - 150	14	30
2,4-Dinitrotoluene	2.0	U	80.0	58.8	* KK	ug/L		74	63 - 122	32	30
2,6-Dinitrotoluene	2.0	U	80.0	57.1	* EE	ug/L		71	71 - 118	36	30
2-Chloronaphthalene	10	U	80.0	48.2		ug/L		60	57 - 102	27	30
2-Chlorophenol	10	U	80.0	43.8	* C	ug/L		55	57 - 93	30	30
2-Methylnaphthalene	10	U	80.0	49.1		ug/L		61	57 - 103	28	30
2-Methylphenol	10	U	80.0	39.8		ug/L		50	45 - 86	27	30
2-Nitroaniline	20	U	80.0	52.3		ug/L		65	54 - 123	29	30
2-Nitrophenol	10	U	80.0	50.3	* N	ug/L		63	60 - 126	34	30
3,3'-Dichlorobenzidine	20	U	80.0	38.6	* BBB	ug/L		48	59 - 125	6	30
3-Nitroaniline	20	U	80.0	61.1		ug/L		76	57 - 110	6	30
4,6-Dinitro-2-methylphenol	30	U	160	104	* PP	ug/L		65	69 - 149	15	30
4-Bromophenyl phenyl ether	10	U	80.0	51.6	* RR	ug/L		64	65 - 115	26	30
4-Chloro-3-methylphenol	10	U	80.0	48.3		ug/L		60	60 - 107	30	30
4-Chloroaniline	1.0	U	80.0	63.4		ug/L		79	43 - 105	4	30
4-Chlorophenyl phenyl ether	10	U	80.0	50.0		ug/L		63	60 - 113	23	30
4-Methylphenol	10	U	80.0	34.9	* I	ug/L		44	37 - 86	33	30
4-Nitroaniline	20	U	80.0	50.7		ug/L		63	52 - 122	17	30
4-Nitrophenol	30	U	160	41.8		ug/L		26	17 - 61	7	30
Acenaphthene	10	U	80.0	52.0		ug/L		65	54 - 108	23	30
Acenaphthylene	10	U	80.0	52.5		ug/L		66	64 - 102	28	30
Acetophenone	10	U	80.0	56.1	* JJJ	ug/L		70	65 - 109	31	30
Anthracene	10	U	80.0	54.5	* VV	ug/L		68	69 - 110	31	30
Atrazine	10	U *	40.0	52.2	E	ug/L		131	10 - 150	22	30
Benzaldehyde	10	U *	40.0	41.8	E * LLLL	ug/L		104	47 - 134	34	30
Benzo[a]anthracene	1.0	U	80.0	54.3	* CCC	ug/L		68	71 - 114	30	30
Benzo[a]pyrene	1.0	U *	80.0	63.7	* III	ug/L		80	67 - 106	31	30
Benzo[b]fluoranthene	2.0	U	80.0	61.8		ug/L		77	65 - 113	25	30
Benzo[g,h,i]perylene	10	U	80.0	65.0	* LLL	ug/L		81	48 - 145	32	30
Benzo[k]fluoranthene	1.0	U	80.0	63.1		ug/L		79	66 - 116	30	30
Bis(2-chloroethoxy)methane	10	U	80.0	53.3	* P	ug/L		67	64 - 114	33	30
Bis(2-chloroethyl)ether	1.0	U	80.0	53.9	* B	ug/L		67	57 - 112	33	30
Bis(2-ethylhexyl) phthalate	10	U	80.0	42.9	* EEE	ug/L		54	60 - 135	38	30
Butyl benzyl phthalate	10	U	80.0	51.5	* AAA	ug/L		64	63 - 126	31	30
Caprolactam	10	U	40.0	17.6		ug/L		44	10 - 60	14	30
Carbazole	10	U	80.0	56.6	* WW	ug/L		71	68 - 113	32	30
Chrysene	10	U	80.0	53.9	* DDD	ug/L		67	74 - 122	30	30
Dibenz(a,h)anthracene	1.0	U	80.0	69.6	* KKK	ug/L		87	57 - 144	33	30
Dibenzofuran	10	U	80.0	51.4	* JJ	ug/L		64	65 - 104	27	30
Diethyl phthalate	10	U	80.0	54.8	* LL	ug/L		69	65 - 105	31	30

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 460-224919-2 MSD
Matrix: Water
Analysis Batch: 747935

Client Sample ID: MW-P2
Prep Type: Total/NA
Prep Batch: 747748

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dimethyl phthalate	10	U	80.0	55.9		ug/L		70	68 - 105	30	30
Di-n-butyl phthalate	10	U	80.0	52.2	* XX	ug/L		65	66 - 113	32	30
Di-n-octyl phthalate	10	U	80.0	47.1	* FFF	ug/L		59	40 - 133	37	30
Fluoranthene	10	U	80.0	55.2	* YY	ug/L		69	66 - 116	33	30
Fluorene	10	U	80.0	53.0		ug/L		66	64 - 108	26	30
Hexachlorobenzene	1.0	U	80.0	54.3		ug/L		68	59 - 129	26	30
Hexachlorobutadiene	2.0	U	80.0	26.1		ug/L		33	33 - 98	25	30
Hexachlorocyclopentadiene	10	U	80.0	27.0		ug/L		34	14 - 97	23	30
Hexachloroethane	2.0	U	80.0	28.3	* K	ug/L		35	27 - 94	33	30
Indeno[1,2,3-cd]pyrene	2.0	U	80.0	68.3	* JJJ	ug/L		85	55 - 139	32	30
Isophorone	10	U	80.0	57.1	* M	ug/L		71	64 - 113	34	30
Naphthalene	2.0	U	80.0	49.4	* M+S	ug/L		62	56 - 99	35	30
Nitrobenzene	1.0	U	80.0	61.1		ug/L		76	67 - 109	29	30
N-Nitrosodi-n-propylamine	1.0	U	80.0	57.9	* J	ug/L		72	60 - 111	31	30
N-Nitrosodiphenylamine	10	U	80.0	46.4	* QQ	ug/L		58	67 - 110	16	30
Pentachlorophenol	30	U	160	108		ug/L		67	57 - 135	21	30
Phenanthrene	10	U	80.0	54.7	* UU	ug/L		68	69 - 108	29	30
Phenol	10	U	80.0	23.0		ug/L		29	20 - 53	11	30
Pyrene	10	U	80.0	54.5	* ZZ	ug/L		68	66 - 121	31	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	69		36 - 159
2-Fluorobiphenyl	47		42 - 127
2-Fluorophenol (Surr)	29		18 - 72
Nitrobenzene-d5 (Surr)	59		46 - 137
Phenol-d5 (Surr)	21		10 - 50
Terphenyl-d14 (Surr)	64		39 - 150

Lab Sample ID: MB 460-748031/1-A
Matrix: Water
Analysis Batch: 748111

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 748031

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	10	U	10	1.2	ug/L		12/19/20 08:52	12/19/20 17:05	1
1,2,4,5-Tetrachlorobenzene	10	U	10	1.2	ug/L		12/19/20 08:52	12/19/20 17:05	1
2,2'-oxybis[1-chloropropane]	10	U	10	0.63	ug/L		12/19/20 08:52	12/19/20 17:05	1
2,3,4,6-Tetrachlorophenol	10	U	10	0.75	ug/L		12/19/20 08:52	12/19/20 17:05	1
2,4,5-Trichlorophenol	10	U	10	0.88	ug/L		12/19/20 08:52	12/19/20 17:05	1
2,4,6-Trichlorophenol	10	U	10	0.86	ug/L		12/19/20 08:52	12/19/20 17:05	1
2,4-Dichlorophenol	10	U	10	1.1	ug/L		12/19/20 08:52	12/19/20 17:05	1
2,4-Dimethylphenol	10	U	10	0.62	ug/L		12/19/20 08:52	12/19/20 17:05	1
2,4-Dinitrophenol	30	U	30	2.6	ug/L		12/19/20 08:52	12/19/20 17:05	1
2,4-Dinitrotoluene	2.0	U	2.0	1.0	ug/L		12/19/20 08:52	12/19/20 17:05	1
2,6-Dinitrotoluene	2.0	U	2.0	0.83	ug/L		12/19/20 08:52	12/19/20 17:05	1
2-Chloronaphthalene	10	U	10	1.2	ug/L		12/19/20 08:52	12/19/20 17:05	1
2-Chlorophenol	10	U	10	0.38	ug/L		12/19/20 08:52	12/19/20 17:05	1
2-Methylnaphthalene	10	U	10	0.53	ug/L		12/19/20 08:52	12/19/20 17:05	1
2-Methylphenol	10	U	10	0.67	ug/L		12/19/20 08:52	12/19/20 17:05	1

LDC #: 50105A2a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Reviewer: FT

METHOD: GC/MS BNA (EPA SW 846 Method 8270E)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a LCS required?

Y N N/A Were the LCS/LCSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	LCS ID	KKKK	182 (10-150)	168 (10-150)	( )	2 → 4	J det/Δ ND
	460-74774	LLLL	165 (47-134)	155 (47-134)	( )	MB 460-74774	
		III	114 (67-106)	111 (67-106)	( )	↓	↓
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
	LCS ID	KKKK	163 (10-150)	162 (10-150)	( )	1, MB 460-74803	J det/Δ ND
	460-74803	LLLL	154 (47-134)	156 (47-134)	( )		
		III	110 (67-106)	109 (67-106)	( )	↓	↓
		JJJ	144 (55-139)	143 (55-139)	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		

LDC #: 50105A2a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC/MS BNA (EPA SW 846 Method 8270 E)
The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

RRF = $(A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of compound, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard
S = Standard deviation of the RRFs, X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (Internal Standard)	Reported RRF (4 std)	Recalculated RRF (4 std)	Reported Average RRF (initial)	Recalculated Average RRF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL	12/8/20	A (1st IS)	1.7091	1.7091	1.7669	1.7669	4.3	4.3
			S (2nd IS)	1.1093	1.1093	1.0934	1.0934	4.4	4.4
			GG (3rd IS)	1.4119	1.4119	1.4088	1.4088	2.2	2.2
			~~UU~~ DDD (4th IS)	1.3491	1.3491	1.3514	1.3514	3.6	3.6
			~~DDD~~ UU (5th IS)	1.1313	1.1313	1.382	1.382	1.4	1.4
			III (6th IS)	0.9941	0.9941	0.9384	0.9384	16.9	16.9
2			(1st IS)						
			(2nd IS)						
			(3rd IS)						
			(4th IS)						
			(5th IS)						
			(6th IS)						
3			(1st IS)						
			(2nd IS)						
			(3rd IS)						
			(4th IS)						
			(5th IS)						
			(6th IS)						

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 50105A2a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: FT

METHOD: GC/MS BNA (EPA SW 846 Method 8270E)
The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
A_x = Area of compound, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Internal Standard)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported %D	Recalculated %D
1	CCV 2106	12/18/20	Δ (1st IS)	1.7669	1.999	1.999	13.2	13.2
			S (2nd IS)	1.0934	1.133	1.133	3.6	3.6
			GG (3rd IS)	1.4088	1.350	1.350	4.2	4.2
			~~HH~~ DDD (4th IS)	1.3514	1.157	1.157	1.6	1.6
			~~DDD~~ HH (5th IS)	1.382	1.313	1.313	2.9	2.9
			III (6th IS)	0.9384	1.116	1.116	18.9	18.9
2	CCV 2121	12/21/20	Δ (1st IS)	1.7669	1.977	1.977	11.9	11.9
			S (2nd IS)	1.0934	1.144	1.144	4.6	4.6
			GG (3rd IS)	1.4088	1.380	1.380	2.0	2.0
			~~HH~~ DDD (4th IS)	1.3514	1.170	1.170	2.8	2.8
			~~DDD~~ HH (5th IS)	1.382	1.304	1.304	3.5	3.5
			III (6th IS)	0.9384	1.097	1.097	16.9	16.9
3			(1st IS)					
			(2nd IS)					
			(3rd IS)					
			(4th IS)					
			(5th IS)					
			(6th IS)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 50105 A2a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: FT

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270 C)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5	10.0	9.39	94	94	0
2-Fluorobiphenyl	↓	8.97	90	90	↓
Terphenyl-d14		8.97	90	90	
Phenol-d5		3.17	32	32	
2-Fluorophenol		4.83	48	48	
2,4,6-Tribromophenol		8.58	86	86	
2-Chlorophenol-d4	↓				
1,2-Dichlorobenzene-d4					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

LDC #: 50105A2a

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: FT

METHOD: GC/MS BNA (EPA SW 846 Method 8270E)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentation

RPD = I MSC - MSC I * 2/(MSC + MSDC) MSC = Matrix spike concentration MSDC = Matrix spike duplicate concentration

MS/MSD samples: 5 a 6

Compound	Spike Added (ug/L)		Sample Concentration (ug/L)	Spiked Sample Concentration (ug/L)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	-------	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalc
Phenol	80	80	ND	25.8	23.0	32	32	29	29	11	11
N-Nitroso-di-n-propylamine				79.3	57.9	99	99	72	72	31	31
4-Chloro-3-methylphenol				65.6	48.3	82	82	60	60	30	30
Acenaphthene				65.6	52.0	82	82	65	65	23	23
Pentachlorophenol	160	160		133	108	83	83	67	67	21	21
Pyrene	80	80		74.3	54.5	93	93	68	68	31	31

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 50105A2a

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: FT

METHOD: GC/MS BNA (EPA SW 846 Method 8270E)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA Where: SSC = Spike concentration
SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: lcs/d 460-74778

Compound	Spike Added (ug/L)		Spike Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
Phenol	80	80	28.8	30.2	36	36	38	38	5	5
N-Nitroso-di-n-propylamine	↓	↓	82.3	78.8	103	103	99	99	4	4
4-Chloro-3-methylphenol			68.1	67.3	85	85	84	84	1	1
Acenaphthene			69.5	66.6	87	87	83	83	4	4
Pentachlorophenol	160	160	156	155	97	97	97	97	1	1
Pyrene	80	80	75.3	75.0	94	94	94	94	0	0

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 50105A2a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

METHOD: GC/MS BNA (EPA SW 846 Method 8270 E)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
V_o	=	Volume or weight of sample extract in milliliters (ml) or grams (g).
V_i	=	Volume of extract injected in microliters (ul)
V_t	=	Volume of the concentrated extract in microliters (ul)
Df	=	Dilution Factor.
%S	=	Percent solids, applicable to soil and solid matrices only.
2.0	=	Factor of 2 to account for GPC cleanup

Example:

Sample I.D. LCS460, 747148: III

Conc. = $\frac{(701054)(8)(2)(1000)}{(523263)(0.9384)(250)}$

= 91.37 ug/L

2/250

#	Sample ID	Compound	Reported Concentration (ug/L)	Calculated Concentration (ug/L)	Qualification
	LCS	III	~~91.4~~ 91.4	91.4	

LDC #: 50105A2b
SDG #: 460-224919-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Category B

Date: 1/13/21
Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8270E-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A /Δ	
II.	GC/MS Instrument performance check	Δ	
III.	Initial calibration/~~ICV~~	A Δ	%D/%RSD ≤ 20 ~~ICV~~ no ICV
IV.	Continuing calibration	Δ	CCV ≤ 20
V.	Laboratory Blanks	Δ	
VI.	Field blanks	NA	EB = 3 FB=4
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	Δ	
IX.	Laboratory control samples	Δ	LCS ID
X.	Field duplicates	N	
XI.	Internal standards	Δ	
XII.	Compound quantitation RL/LOQ/LODs	Δ	
XIII.	Target compound identification	Δ	
XIV.	System performance	Δ	
XV.	Overall assessment of data	Δ	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	MW-P1	460-224919-1	Water	12/15/20
2	MW-P2	460-224919-2	Water	12/15/20
3	EB20201215	460-224919-3	Water	12/15/20
4	FB20201214	460-224919-4	Water	12/14/20
5	MW-P2MS	460-224919-2MS	Water	12/15/20
6	MW-P2MSD	460-224919-2MSD	Water	12/15/20
7				
8				
9				

Notes:

	MB 460-748082						

LDC #: 50105A26 **VALIDATION FINDINGS CHECKLIST** Page: 1 of 2
Reviewer: FT

Method: Semivolatiles (EPA SW 846 Method 8270 C) SIM

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. GC/MS Instrument performance check				
Were the DFTPP performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 15/30% or 20% and relative response factors (RRF) within method criteria?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓		✓	
Were all percent differences (%D) ≤ 20% or 30%?	✓		✓	
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 20% and relative response factors (RRF) within method criteria?	✓			
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks? If yes, please see the blanks validation findings worksheet.		✓		
VI. Field blanks				
Were field blanks were identified in this SDG?	✓			
Were target compounds detected in the field blanks?		✓		
VII. Surrogate spikes				
Were all surrogate percent recovery (%R) within QC limits?	✓			
If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any percent recoveries (%R) was less than 10%, was a reanalysis performed to confirm %R ?			✓	
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?	✓			

Validation Area	Yes	No	NA	Findings/Comments
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			
IX. Laboratory control samples				
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
X. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds detected in the field duplicates?			✓	
XI. Internal standards				
Were internal standard area counts within -50% to +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XII. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS SVOA

A. Phenol	CC. Dimethylphthalate	EEE. Bis(2-ethylhexyl)phthalate	GGGG. C30-Hopane	I1. Methyl methanesulfonate
B. Bis (2-chloroethyl) ether	DD. Acenaphthylene	FFF. Di-n-octylphthalate	HHHH. 1-Methylphenanthrene	J1. Ethyl methanesulfonate
C. 2-Chlorophenol	EE. 2,6-Dinitrotoluene	GGG. Benzo(b)fluoranthene	IIII. 1,4-Dioxane	K1. o,o',o"-Triethylphosphorothioate
D. 1,3-Dichlorobenzene	FF. 3-Nitroaniline	HHH. Benzo(k)fluoranthene	JJJJ. Acetophenone	L1. n-Phenylene diamine
E. 1,4-Dichlorobenzene	GG. Acenaphthene	III. Benzo(a)pyrene	KKKK. Atrazine	M1. 1,4-Naphthoquinone
F. 1,2-Dichlorobenzene	HH. 2,4-Dinitrophenol	JJJ. Indeno(1,2,3-cd)pyrene	LLLL. Benzaldehyde	N1. N-Nitro-o-toluidine
G. 2-Methylphenol	II. 4-Nitrophenol	KKK. Dibenz(a,h)anthracene	MMMM. Caprolactam	O1. 1,3,5-Trinitrobenzene
H. 2,2'-Oxybis(1-chloropropane)	JJ. Dibenzofuran	LLL. Benzo(g,h,i)perylene	NNNN. 2,6-Dichlorophenol	P1. Pentachlorobenzene
I. 4-Methylphenol	KK. 2,4-Dinitrotoluene	MMM. Bis(2-Chloroisopropyl)ether	OOOO. 1,2-Diphenylhydrazine	Q1. 4-Aminobiphenyl
J. N-Nitroso-di-n-propylamine	LL. Diethylphthalate	NNN. Aniline	PPPP. 3-Methylphenol	R1. 2-Naphthylamine
K. Hexachloroethane	MM. 4-Chlorophenyl-phenyl ether	OOO. N-Nitrosodimethylamine	QQQQ. 3&4-Methylphenol	S1. Triphenylene
L. Nitrobenzene	NN. Fluorene	PPP. Benzoic Acid	RRRR. 4-Dimethyldibenzothiophene (4MDT)	T1. Octachlorostyrene
M. Isophorone	OO. 4-Nitroaniline	QQQ. Benzyl alcohol	SSSS. 2/3-Dimethyldibenzothiophene (4MDT)	U1. Famphur
N. 2-Nitrophenol	PP. 4,6-Dinitro-2-methylphenol	RRR. Pyridine	TTTT. 1-Methyldibenzothiophene (1MDT)	V1. 1,4-phenylenediamine
O. 2,4-Dimethylphenol	QQ. N-Nitrosodiphenylamine	SSS. Benzidine	UUUU.. 2,3,4,6-Tetrachlorophenol	W1. Methapyrilene
P. Bis(2-chloroethoxy)methane	RR. 4-Bromophenyl-phenylether	TTT. 1-Methylnaphthalene	VVVV. 1,2,4,5-Tetrachlorobenzene	X1. Pentachloroethane
Q. 2,4-Dichlorophenol	SS. Hexachlorobenzene	UUU.Benzo(b)thiophene	WWWW.. 2-Picoline	Y1. 3,3'-Dimethylbenzidine
R. 1,2,4-Trichlorobenzene	TT. Pentachlorophenol	VVV.Benzonaphthothiophene	XXXX. 3-Methylcholanthrene	Z1. o-Toluidine
S. Naphthalene	UU. Phenanthrene	WWW.Benzo(e)pyrene	YYYY. a,a-Dimethylphenethylamine	A2. 1-Naphthylamine
T. 4-Chloroaniline	VV. Anthracene	XXX. 2,6-Dimethylnaphthalene	ZZZZ. Hexachloropropene	B2. 4-Aminobiphenyl
U. Hexachlorobutadiene	WW. Carbazole	YYY. 2,3,5-Trimethylnaphthalene	A1. N-Nitrosodiethylamine	C2. 4-Nitroquinoline-1-oxide
V. 4-Chloro-3-methylphenol	XX. Di-n-butylphthalate	ZZZ. Perylene	B1. N-Nitrosodi-n-butylamine	D2. Hexachloropene
W. 2-Methylnaphthalene	YY. Fluoranthene	AAAA. Dibenzothiophene	C1. N-Nitrosomethylethylamine	E2. Bis (2-chloro-1-methylethyl) ether
X. Hexachlorocyclopentadiene	ZZ. Pyrene	BBBB. Benzo(a)fluoranthene	D1. N-Nitrosomorpholine	F2. Bifenthrin
Y. 2,4,6-Trichlorophenol	AAA. Butylbenzylphthalate	CCCC. Benzo(b)fluorene	E1. N-Nitrosopyrrolidine	G2. Cyfluthrin
Z. 2,4,5-Trichlorophenol	BBB. 3,3'-Dichlorobenzidine	DDDD. cis/trans-Decalin	F1. Phenacetin	H2. Cypermethrin
AA. 2-Chloronaphthalene	CCC. Benzo(a)anthracene	EEEE. 1,1'-Biphenyl	G1. 2-Acetylaminofluorene	I2. Permethrin (cis/trans)
BB. 2-Nitroaniline	DDD. Chrysene	FFFF. Retene	H1. Pronamide	J2. 5-Nitro-o-toluidine

LDC #: 50165A2b

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC/MS BNA (EPA SW 846 Method 8270 E)
The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of compound,
C_x = Concentration of compound,
S = Standard deviation of the RRFs,

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (Internal Standard)	Reported RRF (0.50 std)	Recalculated RRF (0.50 std)	Reported Average RRF (initial)	Recalculated Average RRF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL	11/3/20	1,4-Dioxane (1st IS)	1.2070	1.2070	1.1973	1.1973	10.5	10.5
			(2nd IS)						
			(3rd IS)						
			(4th IS)						
			(5th IS)						
			(6th IS)						
2			(1st IS)						
			(2nd IS)						
			(3rd IS)						
			(4th IS)						
			(5th IS)						
			(6th IS)						
3			(1st IS)						
			(2nd IS)						
			(3rd IS)						
			(4th IS)						
			(5th IS)						
			(6th IS)						

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 50105A2b

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: FT

METHOD: GC/MS BNA (EPA SW 846 Method 8270 E)
The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
A_x = Area of compound, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Internal Standard)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported %D	Recalculated %D
1	CCV 1636	12/19/20	1,4-Dioxane (1st IS)	1.1973	1.207	1.207	0.8	0.8
			(2nd IS)					
			(3rd IS)					
			(4th IS)					
			(5th IS)					
			(6th IS)					
2			(1st IS)					
			(2nd IS)					
			(3rd IS)					
			(4th IS)					
			(5th IS)					
			(6th IS)					
3			(1st IS)					
			(2nd IS)					
			(3rd IS)					
			(4th IS)					
			(5th IS)					
			(6th IS)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 50105A26

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: FT

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270 E)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #2

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
~~Nitrobenzene-d5~~ 1,4-Dioxane	4.0	1.17	29	29	0
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
~~1,2-Dichlorobenzene-d4~~					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

LDC #: 50105A26

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

METHOD: GC/MS BNA (EPA SW 846 Method 8270 E)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentation

RPD = I MSC - MSC I * 2/(MSC + MSDC) MSC = Matrix spike concentration MSDC = Matrix spike duplicate concentration

MS/MSD samples: 5 + 6

Compound	Spike Added (ug/L)		Sample Concentration (ug/L)	Spiked Sample Concentration (ug/L)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	------	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalc
1,4-Dioxane											
~~Phenol~~	~~0.20~~	0.20	ND	1.49	1.70	93	93	106	106	13	13
N-Nitroso-di-n-propylamine	1.60	1.60									
4-Chloro-3-methylphenol											
Acenaphthene											
Pentachlorophenol											
~~Pyrene~~											

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 50105A2b

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: FT

METHOD: GC/MS BNA (EPA SW 846 Method 8270 C)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA Where: SSC = Spike concentration
SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: lcs10 460-74808

Compound	Spike Added (ug/L)		Spike Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
1,4-Dioxane	1.60	1.60	1.57	1.57	98	98	98	98	0	0
N-Nitroso-di-n-propylamine										
4-Chloro-3-methylphenol										
Acenaphthene										
Pentachlorophenol										
Pyrene										

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 50105A2b

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

METHOD: GC/MS BNA (EPA SW 846 Method 8270 E)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
V_o	=	Volume or weight of sample extract in milliliters (ml) or grams (g).
V_i	=	Volume of extract injected in microliters (ul)
V_t	=	Volume of the concentrated extract in microliters (ul)
Df	=	Dilution Factor.
%S	=	Percent solids, applicable to soil and solid matrices only.
2.0	=	Factor of 2 to account for GPC cleanup

Example:

Sample I.D. LCS 460-74808: 1,4-Dioxane

Conc. = $\frac{(1452)(4.0)(2)(1000)}{(24760)(1.1973)(250)}$

= 1.567 ug/L

2/250

#	Sample ID	Compound	Reported Concentration (ug/L)	Calculated Concentration (ug/L)	Qualification
	LCS	1,4-Dioxane	1.57	1.567	

LDC #: 50105A3a
SDG #: 460-224919-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Category B

Date: 1/13/21
Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: GC Chlorinated Pesticides (EPA SW846 Method 8081B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	GC Instrument Performance Check	A	
III.	Initial calibration/ICV	A/A	%D RSD/ICV ≤ 20
IV.	Continuing calibration	SW	CCV ≤ 20
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	EB = 3 FB = 4
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	SW	
IX.	Laboratory control samples	SW	LCS ID
X.	Field duplicates	N	
XI.	Compound quantitation/RL/LOQ/LODs	A	No Results < RL > MDL
XII.	Target compound identification	A	
XIII.	System Performance	A	
XIV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	MW-P1	460-224919-1	Water	12/15/20
2	MW-P2	460-224919-2	Water	12/15/20
3	EB20201215	460-224919-3	Water	12/15/20
4	FB20201214	460-224919-4	Water	12/14/20
5	MW-P2MS	460-224919-2MS	Water	12/15/20
6	MW-P2MSD	460-224919-2MSD	Water	12/15/20
7				
8				
9				
10				
11				

Notes:

	MB 460-747429						

Method: Pesticides (EPA SW 846 Method 8081 B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. GC/ECD Instrument performance check				
Was the instrument performance found to be acceptable?	✓			
Were Evaluation mix standards analyzed prior to the initial calibration and at beginning of each 12-hour shift?	✓			
Were endrin and 4,4'-DDT breakdowns ≤ 15% for individual breakdown in the Evaluation mix standards?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
Were the RT windows properly established?		✓		
IIIb. Initial calibration verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 20%?	✓			
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks identified in this SDG?	✓			
Were target compounds detected in the field blanks?		✓		

Validation Area	Yes	No	NA	Findings/Comments
VII. ***Surrogate spikes/Internal Standards***				
Were all surrogate percent recovery (%R) within the QC limits?	✓			
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any percent recovery (%R) was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
Were internal standard area counts within ± 50% of the average area calculated during calibration?	✓			
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		✓		
IX. Laboratory control samples				
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
X. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds detected in the field duplicates?			✓	
XI. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions, dry weight factors, and clean-up activities applicable to level IV validation?	✓			
Were relative percent difference (RPD) of the results between two columns ≤ 40%?	✓			
XII. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

VALIDATION FINDINGS WORKSHEET

METHOD: Pesticide/PCBs (EPASW 846 Method 8081/8082)

A. alpha-BHC	I. Dieldrin	Q. Endrin ketone	Y. Aroclor-1242	GG. Chlordane
B. beta-BHC	J. 4,4'-DDE	R. Endrin aldehyde	Z. Aroclor-1248	HH. Chlordane (Technical)
C. delta-BHC	K. Endrin	S. alpha-Chlordane	AA. Aroclor-1254	II. Aroclor 1262
D. gamma-BHC	L. Endosulfan II	T. gamma-Chlordane	BB. Aroclor-1260	JJ. Aroclor 1268
E. Heptachlor	M. 4,4'-DDD	U. Toxaphene	CC. 2,4'-DDD	KK. Oxychlordane
F. Aldrin	N. Endosulfan sulfate	V. Aroclor-1016	DD. 2,4'-DDE	LL. trans-Nonachlor
G. Heptachlor epoxide	O. 4,4'-DDT	W. Aroclor-1221	EE. 2,4'-DDT	MM. cis-Nonachlor
H. Endosulfan I	P. Methoxychlor	X. Aroclor-1232	FF. Hexachlorobenzene	NN.

Notes:_____

LDC #: 50105A3q

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Reviewer: FT

METHOD: ✓ GC __ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
What type of continuing calibration calculation was performed? ___%D or ___%R

Y N N/A Were continuing calibration standards analyzed at the required frequencies?
Y N N/A Did the continuing calibration standards meet the %D / %R validation criteria of ≤20.0% / 80-120%?

Level IV Only

Y N N/A Were the retention times for all calibrated compounds within their respective acceptance windows?

#	Date	Standard ID	Detector/ Column	Compound	%D (Limit ≤ 20.0)	RT (limit)	Associated Samples	Qualifications
	12/17/20 04/16	CCV	CLP2	U	45.3		All	J/UJ/A - ND

LDC #: 50165A3a

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: FT

METHOD: √ GC ___ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?

Y N N/A Was an MS/MSD analyzed every 20 samples for each matrix or whenever a sample extraction was performed?

Y N N/A Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits?

#	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	5 + 6	M (CLP2)	( )	( )	32 (30)	2	J det / A all ND
		B (CLP2)	( )	( )	33 ( )		
		I (CLP2	( )	( )	31 ( )		
		H (CLP2)	( )	( )	31 ( )		
		L (CLP2)	( )	( )	33 ( )		
		N (CLP2)	( )	( )	33 ( )		
		R (CLP2)	( )	( )	34 ( )		
		Q (CLP2)	( )	( )	33 ( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
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			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		

LDC #: 50105A3a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Reviewer: FT

METHOD: ✓ **GC** __ **HPLC**

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) analyzed for each matrix in this SDG?

Y N N/A Were the LCS percent recoveries (%R) and relative percent differences (RPD) within the QC limits?

Level IV/D Only

Y N N/A Was an LCS analyzed every 20 samples for each matrix or whenever a sample extraction was performed?

#	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	LCS/D 460-747429	F(CLP1)	~~255 (46-144)~~	255 (46-144)	( )	All	J det/A/P all ND
		R(CLP1)	( )	208 (53-140)	( )	↓	↓
		P(CLP2)	( )	170 (52-145)	( )		
		F(CLP1)	( )	( )	78 (30)		
		R(CLP1)	( )	( )	67 ( )		
		P(CLP2)	( )	( )	43 (↓)	↓	
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		

LDC #: 50105 A3a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: FT

METHOD: GC ✓ HPLC _____

The calibration factors (CF) and relative standard deviation (%RSD) were recalculated using the following calculations:

CF = A/C
Average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where: A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported CF (100 std)	Recalculated CF (100 std)	Reported CF (initial)	Recalculated CF (intial)	Reported %RSD	Recalculated %RSD
1	ICAL-4	6/2/20	gamma BHC	1.4874	1.4874	1.5775	1.5775	14.2	14.2
			4,4'-DDT	1.2522	1.2522	1.3670	1.3670	20.0	20.0
			↓	1.5478	1.5478	1.5261	1.5261	5.2	5.2
			↓	1.3577	1.3577	1.3116	1.3116	5.0	5.0
2	ICAL-4	10/27/20	↓	1.5483	1.5483	1.5905	1.5905	8.7	8.2
				1.0514	1.0514	1.0570	1.0570	3.7	3.7
			↓	1.6498	1.6498	1.6791	1.6791	2.0	2.0
				1.2985	1.2985	1.2870	1.2870	2.5	2.5
3									
4									

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 50105A3a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: FT

METHOD: GC ✓ HPLC _____

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration CF were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. CF -CF)/ave.CF

Where: ave. CF = initial calibration average CF
CF = continuing calibration CF
A = Area of compound
C = Concentration of compound

#	Standard ID	Calibration Date	Compound	Average CF(ICAL)/ CCV Conc.	Reported CF/ Conc. CCV	Recalculated CF/ Conc. CCV	Reported %D	Recalculated %D
1	ccv 0416	12/17/20	gamma BHC CLP2	100	95.1	95.1	4.9	4.9
			4,4'-DDT	100	109	109	9.2	9.2
2								
3								
4								

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 50105A3a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: FT

METHOD: ✓ GC __ HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
DCB	CLP2	100	50.6	51	51	0
↓	CLP1	↓	48.2	48	48	↓
TCMX	CLP2	↓	34.4	34	34	↓
↓	CLP1	↓	32.5	33	33	↓

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

	Surrogate Compound		Surrogate Compound		Surrogate Compound		Surrogate Compound		Surrogate Compound
A	Chlorobenzene (CBZ)	G	Octacosane	M	Benzo(e)Pyrene	S	1-Chloro-3-Nitrobenzene	Y	Tetrachloro-m- xylene
B	4-Bromofluorobenzene (BFB)	H	Ortho-Terphenyl	N	Terphenyl-D14	T	3,4-Dinitrotoluene	Z	2-Bromonaphthalene
C`	a,a,a-Trifluorotoluene	I	Fluorobenzene (FBZ)	O	Decachlorobiphenyl (DCB)	U	Tripentyltin	AA	Chloro-octadecane
D	Bromochlorobenene	J	n-Triacontane	P	1-methylnaphthalene	V	Tri-n-propyltin	BB	2,4-Dichlorophenylacetic acid
E	1,4-Dichlorobutane	K	Hexacosane	Q	Dichlorophenyl Acetic Acid (DCAA)	W	Tributyl Phosphate	CC	2,5-Dibromotoluene
F	1,4-Difluorobenzene (DFB)	L	Bromobenzene	R	4-Nitrophenol	X	Triphenyl Phosphate		

LDC #: 30105A39

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: FT

METHOD: ✓ GC __ HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA

RPD =(({SSCMS - SSCMSD} * 2) / (SSCMS + SSCMSD))*100

Where SSC = Spiked sample concentration; SC = Sample concentration; SA = Spike added; MS = Matrix spike; MSD = Matrix spike duplicate

MS/MSD samples: 5 & 6

Compound	Spike Added (ug/L)		Sample Conc. (ug/L)	Spike Sample Concentration (ug/L)		Matrix spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	---	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
gamma BHC	0.800	0.800	ND	0.824	0.686	103 ~~110~~	103	86	86	18	18
4,4'-DDT	↓	↓	↓	0.883	0.739	110	110	92	92	18	18

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 50105A32

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: FT

METHOD: ✓ GC ___HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC/SA)
RPD =(({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100

Where SSC = Spiked sample concentration; SA = Spike added
LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: lcs ID 460-747429

Compound	Spike Added (ng/L)		Spike Sample Concentration (ng/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
gamma BHC	0.800		0.795	0.810	99	99	101	101	2	2
4,4 DDT	0.800		0.917	0.924	115	115	116	116	1	1

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 50105A3a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: FT

METHOD: V **GC** __ **HPLC**

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= $\frac{(A)(Fv)(Df)}{(RF)(Vs \text{ or } Ws)(\%S/100)}$

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. LCS 460-147429 Compound Name 4,4'-DDT

Concentration = $\frac{(1946622\,18)(100)(1)}{(80374525)(1.0570)(250)}$ = 0.917 ug/L

CLP2 1/250

#	Sample ID	Compound	Reported Concentrations (ug/L)	Recalculated Results Concentrations (ug/L)	Qualifications
	LCS	4,4'-DDT	0.917	0.199	

Comments:

LDC #: 50105A3b
SDG #: 460-224919-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Category B

Date: 1/13/21
Page: 1 of 1
Reviewer: FT
2nd Reviewer:

METHOD: GC Polychlorinated Biphenyls (EPA SW846 Method 8082A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	Initial calibration/ICV	A / A	%D / ICV ≤ 20
III.	Continuing calibration	A	CCV ≤ 20
IV.	Laboratory Blanks	A	
V.	Field blanks	ND	EB= 3 FB= 4
VI.	Surrogate spikes /14	SW/A	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	A	Lab ID
IX.	Field duplicates	N	
X.	Compound quantitation/RL/LOQ/LODs	A	No Results < RL > MDL
XI.	Target compound identification	A	
XII.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	MW-P1	460-224919-1	Water	12/15/20
2	MW-P2	460-224919-2	Water	12/15/20
3	EB20201215	460-224919-3	Water	12/15/20
4	FB20201214	460-224919-4	Water	12/14/20
5	MW-P2MS	460-224919-2MS	Water	12/15/20
6	MW-P2MSD	460-224919-2MSD	Water	12/15/20
7				
8				
9				
10				
11				
12				
13				

Notes:

	MB 460-747426						

LDC #: 50105 A36

VALIDATION FINDINGS CHECKLIST

Method: ✓ GC ___ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
IIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥0.990?			✓	
Were the RT windows properly established?	✓			
IIb. Initial calibration verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 20%?	✓			
III. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%?	✓			
Were all the retention times within the acceptance windows?	✓			
IV. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
V. Field Blanks				
Were field blanks identified in this SDG?	✓			
Were target compounds detected in the field blanks?		✓		
VI. Surrogate spikes				
Were all surrogate percent recovery (%R) within the QC limits?	✓	✓		
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		✓		
VIII. Laboratory control samples				
Was an LCS analyzed per analytical or extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Field duplicates				

Were field duplicate pairs identified in this SDG?		✓		
Were target compounds detected in the field duplicates?			✓	
X. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XI. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

VALIDATION FINDINGS WORKSHEET

METHOD: Pesticide/PCBs (EPASW 846 Method 8081/8082)

A. alpha-BHC	I. Dieldrin	Q. Endrin ketone	Y. Aroclor-1242	GG. Chlordane
B. beta-BHC	J. 4,4'-DDE	R. Endrin aldehyde	Z. Aroclor-1248	HH. Chlordane (Technical)
C. delta-BHC	K. Endrin	S. alpha-Chlordane	AA. Aroclor-1254	II. Aroclor 1262
D. gamma-BHC	L. Endosulfan II	T. gamma-Chlordane	BB. Aroclor-1260	JJ. Aroclor 1268
E. Heptachlor	M. 4,4'-DDD	U. Toxaphene	CC. 2,4'-DDD	KK. Oxychlordane
F. Aldrin	N. Endosulfan sulfate	V. Aroclor-1016	DD. 2,4'-DDE	LL. trans-Nonachlor
G. Heptachlor epoxide	O. 4,4'-DDT	W. Aroclor-1221	EE. 2,4'-DDT	MM. cis-Nonachlor
H. Endosulfan I	P. Methoxychlor	X. Aroclor-1232	FF. Hexachlorobenzene	NN.

Notes:_____

LDC #: 50105 A36

VALIDATION FINDINDS WORKSHEET
Surrogate Recovery

Reviewer: FT

METHOD: ✓ GC __ HPLC

Are surrogates required by the method? Yes____ or No____.

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were surrogates spiked into all samples and blanks?

Y N N/A Did all surrogate recoveries (%R) meet the QC limits?

#	Sample ID	Detector/ Column	Surrogate Compound	%R (Limits)	Qualifications
2	1	CLP1	Y	43 (48-125)	J/UJ/P ND
1		CLP2	Y	47 (↓)	↓
				( )	
	2	↓	↓	↓ (↓)	↓
				(↓)	
				( )	
	3	↓	↓	37 (↓)	↓
				40 (↓)	
				( )	
				( )	
	4	↓	↓	33 (↓)	↓
				38 (↓)	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

	Surrogate Compound		Surrogate Compound		Surrogate Compound		Surrogate Compound		
A	Chlorobenzene (CBZ)	G	Octacosane	M	Benzo(e)Pyrene	S	1-Chloro-3-Nitrobenzene	Y	Tetrachloro-m- xylene
B	4-Bromofluorobenzene (BFB)	H	Ortho-Terphenyl	N	Terphenyl-D14	T	3,4-Dinitrotoluene	Z	2-Bromonaphthalene
C`	a,a,a-Trifluorotoluene	I	Fluorobenzene (FBZ)	O	Decachlorobiphenyl (DCB)	U	Tripentyltin	AA	Chloro-octadecane
D	Bromochlorobenene	J	n-Triacontane	P	1-methylnaphthalene	V	Tri-n-propyltin	BB	2,4-Dichlorophenylacetic acid
E	1,4-Dichlorobutane	K	Hexacosane	Q	Dichlorophenyl Acetic Acid (DCAA)	W	Tributyl Phosphate	CC	2,5-Dibromotoluene
F	1,4-Difluorobenzene (DFB)	L	Bromobenzene	R	4-Nitrophenol	X	Triphenyl Phosphate		

LDC #: 50105A36

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: FT

METHOD: ✓ GC ___ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?

Y N N/A Was an MS/MSD analyzed every 20 samples for each matrix or whenever a sample extraction was performed?

Y N N/A Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits?

#	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	5, 6	BB(aP1)	491 (75-150)	433 (75-150)	( )	2	J(all)/A ND
		BB(aP2)	489 (↓)	450 (↓)	( )	↓	↓ ↓
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		

LDC #: 50105A3b

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: FT

METHOD: GC ✓ HPLC _____

The calibration factors (CF) and relative standard deviation (%RSD) were recalculated using the following calculations:

CF = A/C
Average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where: A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported CF (ppm std)	Recalculated CF (ppm std)	Reported CF (initial)	Recalculated CF (intial)	Reported %RSD	Recalculated %RSD
1	ICAL	7/28/20	PCB 1260-1 CLP1	0.0228	0.0228	0.0224	0.0224	2.0	2.0
			↓ CLP2	0.0450	0.0450	0.0431	0.0431	3.6	3.6
2									
3									
4									

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 50105 A3b

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: FT

METHOD: GC ✓ HPLC _____

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration CF were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. CF -CF)/ave.CF

Where: ave. CF = initial calibration average CF
CF = continuing calibration CF
A = Area of compound
C = Concentration of compound

#	Standard ID	Calibration Date	Compound	Average CF(ICAL)/ CCV Conc.	Reported CF/ Conc. CCV	Recalculated CF/ Conc. CCV	Reported %D	Recalculated %D
1	CCV 1647	12/17/20	PCB 1260-1 CLP1	1000	1040	1040	3.7	3.7
			CLP2	1000	937	937	6.3	6.3
2								
3								
4								

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 50105A3b

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: FT

METHOD: ✓ GC __ HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
DCB	CLP1	100	67.5	68	68	0
↓	CLP2	↓	72.0	72	72	↓
TCMX	CLP1		43.2	43	43	
↓	CLP2	↓	47.3	47	47	↓

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

	Surrogate Compound		Surrogate Compound		Surrogate Compound		Surrogate Compound		Surrogate Compound
A	Chlorobenzene (CBZ)	G	Octacosane	M	Benzo(e)Pyrene	S	1-Chloro-3-Nitrobenzene	Y	Tetrachloro-m- xylene
B	4-Bromofluorobenzene (BFB)	H	Ortho-Terphenyl	N	Terphenyl-D14	T	3,4-Dinitrotoluene	Z	2-Bromonaphthalene
C	a,a,a-Trifluorotoluene	I	Fluorobenzene (FBZ)	O	Decachlorobiphenyl (DCB)	U	Tripentyltin	AA	Chloro-octadecane
D	Bromochlorobenene	J	n-Triacontane	P	1-methylnaphthalene	V	Tri-n-propyltin	BB	2,4-Dichlorophenylacetic acid
E	1,4-Dichlorobutane	K	Hexacosane	Q	Dichlorophenyl Acetic Acid (DCAA)	W	Tributyl Phosphate	CC	2,5-Dibromotoluene
F	1,4-Difluorobenzene (DFB)	L	Bromobenzene	R	4-Nitrophenol	X	Triphenyl Phosphate		

LDC #: 50105A3b

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: FT

METHOD: ✓ **GC** __ **HPLC**

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA

Where SSC = Spiked sample concentration; SC = Sample concentration; SA = Spike added; MS = Matrix spike; MSD = Matrix spike duplicate

RPD =(({SSCMS - SSCMSD} * 2) / (SSCMS + SSCMSD))*100

MS/MSD samples: 5 & 6

Compound	Spike Added (ug/L)		Sample Conc. (ug/L)	Spike Sample Concentration (ug/L)		Matrix spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	---	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Aroclor 1260	~~0.40~~	0.40	ND	~~17.3~~	17.3	~~433~~	491	433	433	12	12
	4.0	4.0		19.6		491					

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 50105A3b

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: FT

METHOD: ✓ GC ___ HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC/SA)
RPD =(({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100

Where SSC = Spiked sample concentration; SA = Spike added
LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: LCS/D 460-74742 6

Compound	Spike Added (ug/L)		Spike Sample Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Aroclor 1260	4.0	4.0	4.97	3.86	124	124	97	97	25	

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 50105A36

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: FT

METHOD: ✓ GC __ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= (A)(Fv)(Df) / (RF)(Vs or Ws)(%S/100)

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. LCS 460-747426 Compound Name Aroclor 1260

Concentration = $\frac{1241.71\ (1)}{(250)}$ =

1/250

#	Sample ID	Compound	Reported Concentrations (ug/L)	Recalculated Results Concentrations (ug/L)	Qualifications
	LCS	Aroclor 1260	4.97	4.967	
	1260-1 = 24250223 (20.0) / 17898241 (0.0224)	= 1209.7	PCB 1260-1		
		+ 1151.8		2	
		+ 1167.1		3	
		1228.5		4	
		1238.9		5	
		1263.4		6	
		1287.8		7	
		1386.4		8	

Comments:

AVG 1241.71

Site: Long Island City, 30th Street
Laboratory: Eurofins
Report No.: 460-224919-1
Reviewer: An Le and Christina Rink/Laboratory Data Consultants for GEI Consultants, Inc. – Huntington Station, NY
Date: January 18, 2021

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
MW-P1	460-224919-1	Metals
MW-P2	460-224919-2	Metals
EB20201215	460-224919-3	Metals
FB20201214	460-224919-4	Metals
MW-P1F	460-224919-1F	Metals
MW-P2F	460-224919-2F	Metals
MW-P2MS	460-224919-2MS	Metals
MW-P2DUP	460-224919-2DUP	Metals
MW-P2FMS	460-224919-2FMS	Metals
MW-P2FDUP	460-224919-2FDUP	Metals

Samples appended with "F" were analyzed as dissolved metals.

Associated QC Samples(s):
Field/Trip Blanks: EB20201215, FB20201214
Field Duplicate pair: None Associated

The above-listed water samples were collected on December 14 through December 15, 2020 and were analyzed for metals by SW-846 methods 6020B/7470A. The data validation was performed in accordance with the USEPA Region 2 *Standard Operating Procedure for the Evaluation of Metals for the Contract Laboratory Program,* SOP HW-3b/c, Revision 1 (September 2016) and the USEPA *Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review,* EPA 540-R-2017-001 (January 2017), modified as necessary to accommodate the non-CLP methodologies used.

The inorganic data were evaluated based on the following parameters:

- Overall Evaluation of Data and Potential Usability Issues
- Data Completeness
- Holding Times and Sample Preservation
- Inductively Coupled Plasma Mass Spectrometry (ICP-MS) Tune
- Instrument Calibration
- Contract Required Quantitation Limit (CRQL) Standard Recoveries
- Blank Analysis Results
- Inductively Coupled Plasma (ICP) Interference Check Sample (ICS) Results
- Matrix Spike (MS) Results
- Laboratory Duplicate Results
- Field Duplicate Results
- Laboratory Control Sample (LCS) Results
- Serial Dilution Results
- Internal Standards
- Detection Limits Results
- Sample Quantitation Results

Overall Evaluation of Data and Potential Usability Issues

All results are usable as reported or usable with minor qualification due to sample matrix and laboratory quality control outliers.

The validation findings were based on the following information.

Data Completeness

The data package was complete as defined under the requirements for the NYSDEC ASP category B laboratory deliverables.

Holding Times and Sample Preservation

All criteria were met.

ICP-MS Tune

All criteria were met.

Instrument Calibration

All criteria were met.

CRQL Standard Recoveries

All criteria were met.

Blank Results

Analytes were detected below the reporting limits in the laboratory blank samples. The following table summarizes the contamination and validation actions taken.

Blank ID	Analyte	Level Detected	Action Level	Associated Samples
PB (prep blank)	Lead	0.348 ug/L	RL	MW-P1F MW-P2F
ICB/CCB	Lead Thallium	0.813 ug/L 0.183 ug/L	RL RL	MW-P1F MW-P2F
ICB/CCB	Beryllium Lead	0.104 ug/L 0.139 ug/L	RL RL	FB20201214

Blank Actions for analytes detected below the reporting limit (RL).
If the sample result is < RL, report the result as nondetect (U) at the RL.
If the sample result is > RL or nondetect, no action is required.
Blank Actions for analytes detected above the reporting limit or RL.
If the sample result is < RL and <action level; report the result as nondetect (U) at the RL.
If the sample result is > RL and < action level; report the result as nondetect (U) at the reported value.
If the sample result is > action level or nondetect, no action is required.

Qualified sample results are listed in the table below.

Sample	Analyte	Reported Level	Validation Action
MW-P1F	Lead Thallium	0.88 ug/L 0.21 ug/L	1.2U ug/L 0.80U ug/L
MW-P2F	Lead	0.74 ug/L	1.2U ug/L

These results can be used for project objectives as nondetect (U) which may have a minor impact on the data usability.

No positive results were found in the field blank sample FB20201214 for metals analyses.

Contamination was detected in the equipment blank sample EB20201215 for the metals analyses. The following table summarizes the contamination greater than the reporting limit and validation actions taken.

Blank ID	Analyte	Level Detected	Action Level	Associated Samples
EB20201215	Nickel	0.65 ug/L	RL	MW-P1 MW-P2

Blank Actions for analytes detected above the reporting limit (RL).
If the sample result is < RL and < action level; report the result as nondetect (U) at the RL.
If the sample result is > RL and < action level; report the result as nondetect (U) at the reported value.
If the sample result is > action level or nondetect, no action is required.

No samples were qualified since the associated sample results were greater than the action limit.

ICP ICS Results

Analytes were within control limits in the ICSA and ICSAB analyses.

MS Results

MS analyses were performed on samples MW-P2 and MW-P2F for metals analyses. The following table lists the MS percent recoveries (%R) outside of control limits in the metals analyses and the resulting validation actions.

MS ID	Analyte	MS %R (Limits)	Affected Sample	Validation Action
MW-P2MS	Aluminum	55 (75-125)	MW-P1 MW-P2	J detects

For MW-P2MS and MW-P2FMS, no data were qualified for calcium, magnesium, and sodium percent recoveries (%R) outside the QC limits since the parent sample results were greater than 4X the spike concentration.

Laboratory Duplicate Results

Laboratory duplicates were performed on samples MW-P2 and MW-P2F for metals analyses. The following table lists the duplicate differences outside of control limits in the metals analyses and the resulting validation actions.

Dup ID	Analyte	Difference (Limits)	Affected Sample	Validation Action
MW-P2DUP	Copper Nickel	7.13 ug/L (≤4.00) 10.74 ug/L (≤4.00)	MW-P1 MW-P2	J detects J detects

The copper and nickel results were estimated due to laboratory duplicate difference exceedances. The bias cannot be determined. The results can be used for project objectives as estimated values (J) which may have a minor impact on the data usability.

Field Duplicate Results

A field duplicate pair was not associated with this sample set. Validation action was not required on this basis.

LCS Results

All criteria were met.

Serial Dilution Results

A serial dilution analysis was performed on samples MW-P2 and MW-P2F for metals analyses. All criteria were met.

Internal Standards

All criteria were met.

Detection Limits Results

Results were reported which were below the reporting limit (RL) and above the method detection limit (MDL) in the metals analyses. These results were qualified as estimated (J) by the laboratory.

Dilutions were not required for metals analyses.

Sample Quantitation Results

Calculations were spot-checked; no discrepancies were noted.

DATA VALIDATION QUALIFIERS

U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.

J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.

R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

LDC #: 50105A4a
SDG #: 460-224919-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Category B

Date: 1/13/21
Page: 1 of 1
Reviewer: ATL
2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/7470A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	
VI.	Field Blanks	SW	EB=3, FB=4
VII.	Matrix Spike/Matrix Spike Duplicates	SW	7,9
VIII.	Duplicate sample analysis	SW	8,10
IX.	Serial Dilution	A	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	A	MDL < samples < RL : Jdet/A
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

Samples appended with F were analyzed as dissolved.

	Client ID	Lab ID	Matrix	Date
1	MW-P1	460-224919-1	Water	12/15/20
2	MW-P2	460-224919-2	Water	12/15/20
3	EB20201215	460-224919-3	Water	12/15/20
4	FB20201214	460-224919-4	Water	12/14/20
5	MW-P1F	460-224919-1F	Water	12/15/20
6	MW-P2F	460-224919-2F	Water	12/15/20
7	MW-P2MS	460-224919-2MS	Water	12/15/20
8	MW-P2DUP	460-224919-2DUP	Water	12/15/20
9	MW-P2FMS	460-224919-2FMS	Water	12/15/20
10	MW-P2FDUP	460-224919-2FDUP	Water	12/15/20
11				
12				
13				

Notes:

Method: Metals (EPA SW 846 Method 6010/6020/7000)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. ICP/MS Tune				
Were all isotopes in the tuning solution mass resolution within 0.1 amu?	✓			
Were %RSD of isotopes in the tuning solution ≤5%?	✓			
III. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury) QC limits?	✓			
Were the low standard checks within 70-130%	✓			
Were all initial calibration correlation coefficients within limits as specified by the method?	✓			
IV. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	✓			
V. ICP Interference Check Sample				
Were ICP interference check samples performed daily?	✓			
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?	✓			
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.		✓		
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of +/- RL(+/-2X RL for soil) was used for samples that were ≤ 5X the RL, including when only one of the duplicate sample values were ≤ 5X the RL.	✓	✓		
VII. Laboratory control samples				
Was an LCS anaylzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils?	✓			

Validation Area	Yes	No	NA	Findings/Comments
VIII. Internal Standards (EPA SW 846 Method 6020/EPA 200.8)				
Were all the percent recoveries (%R) within the 30-120% (6020)/60-125% (200.8) of the intensity of the internal standard in the associated initial calibration?	✓			
If the %Rs were outside the criteria, was a reanalysis performed?			✓	
IX. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the MDL (ICP)/>100X the MDL(ICP/MS)?	✓			
Were all percent differences (%Ds) < 10%?	✓			
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.		✓		
X. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XI. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XII. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target analytes were detected in the field duplicates.			✓	
XIII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target analytes were detected in the field blanks.	✓			

LDC #: 50105A40

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: ATV

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-26	W	(Al) (Sb) (As) (Ba) (Be) (Cd) (Ca) (Cr) (Co) (Cu) (Fe) (Pb) (Mg) (Mn) (Hg) (Ni) (K) (Se) (Ag) (Na) (Tl) (V) (Zn) Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
QC		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
7-10	W	(Al) (Sb) (As) (Ba) (Be) (Cd) (Ca) (Cr) (Co) (Cu) (Fe) (Pb) (Mg) (Mn) (Hg) (Ni) (K) (Se) (Ag) (Na) (Tl) (V) (Zn) Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___

Comments: Mercury by CVAA if performed

LDC #: 50105A4a

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000) Soil preparation factor applied: NA
Sample Concentration units, unless otherwise noted: ug/L Associated Samples: 5,6

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Level	5	6							
Pb		0.348			0.88/1.2	0.74/1.2							
Pb			0.813		see above	see above							
Tl			0.183		0.21/0.80								

Sample Concentration units, unless otherwise noted: ug/L Associated Samples: 4

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Level									
Be			0.104										
Pb			0.139										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 50105A4a

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: ATL

METHOD: Trace Metals (EPA SW846 6010B/7000)

Blank units: ug/L **Associated sample units:** ug/L
Sampling date: 12/15/20 Soil factor applied _____
Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: 1,2

Analyte	Blank ID	Sample Identification										
	3	Action Limit										
Ni	0.65											

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC #: 50105A4a

VALIDATION FINDINGS WORKSHEET
Matrix Spike

Reviewer: ATL

METHOD: Trace metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y (N) N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

LEVEL IV ONLY:

(Y) N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	MS ID	Matrix	Analyte	MS %Recovery	Associated Samples	Qualifications
	7	W	Al	55 (75-125)	1,2	J/UJ/A (detect)

Comments: 7, 9 : Ca,Mg,Na > 4X

LDC #: 50105A4a

VALIDATION FINDINGS WORKSHEET
Duplicate Analysis

Reviewer: ATL

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was a duplicate sample analyzed for each matrix in this SDG?

Y (N) N/A Were all duplicate sample relative percent differences (RPD) ≤ 20% for water samples and ≤ 35% for soil samples? If no, see qualifications below. A control limit of ±R.L. (±2X R.L. for soil) was used for sample values that were <5X the R.L., including the case when only one of the duplicate sample values was <5X R.L.. If field blanks were used for laboratory duplicates, note in the Overall Assessment.

LEVEL IV ONLY:

(Y) N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Duplicate ID	Matrix	Analyte	RPD (Limits)	Difference (Limits)	Associated Samples	Qualifications
		8	W	Cu		7.13 ug/L (≤ 4.00)	1,2	J/UJ/A (detect)
				Ni		10.74 ug/L (≤ 4.00)	1,2	J/UJ/A (detect)

Comments:

LDC #: 50105A44a

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Reviewer: ATL

METHOD: Trace metals (EPA SW 846 Method 6010/6020/7000)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

$\%R = \frac{Found}{True} \times 100$ Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated %R	Reported %R	Acceptable (Y/N)
	ICP (Low Level calibration)						
CRI	ICP/MS (Low Level calibration) 12/21 @ 08:53	Co	4.128	4.00	103	103	Y
	ICP (Initial calibration)						
ICV	ICP/MS (Initial calibration) 12/20 @ 08:50	Cu	80.203	80.0	100	100	Y
ICV	CVAA (Initial calibration) 12/21 @ 13:29	Hg	4.9565	5.000	99	99	Y
	ICP (Continuing calibration)						
CCV	ICP/MS (Continuing calibration) 12/21 @ 15:47	Na	27443.233	25000	110	110	Y
CCV	CVAA (Continuing calibration) 12/21 @ 15:58	Hg	5.0723	5.000	101	101	Y

ICP-MS TUNE	Calculation	Mass	Actual (Mean Counts / Axis)	Required (Counts / Axis)	Recalculated %RSD	Acceptable (Y/N)
12/21	Mass Axis	59	58.95	± 0.1 AMU	NA	Y
12/20	%RSD	115	64049	≤ 5% RSD	1.626	Y

Comments:

LDC #: 50105A4a

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Reviewer: ATL

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$\%R = \frac{Found}{True} \times 100$ Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$ Where, S = Original sample concentration
D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$\%D = \frac{|I-SDR|}{I} \times 100$ Where, I = Initial Sample Result (mg/L)
SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units) mg/L	True / D / SDR (units) mg/L	Recalculated %R / RPD / %D	Reported %R / RPD / %D	Acceptable (Y/N)
ICSAB	ICP interference check 12/21 @ 08:58	As	222.164	200	111	111	Y
LCS (tot)	Laboratory control sample	Pb	25.243	25.00	101	101	Y
9	Matrix spike	Hg	(SSR-SR) 0.9649	1.00	96	96	Y
8	Duplicate	Ba	171.721	172.264	0.3	0.3	Y
2	Post digestion spike	V	52.355	50.00	105	105	Y
6	ICP serial dilution	Mg	46330.695	45765.973	1.2	1.2	Y

Comments: _____

LDC #: 50105A4a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: ATL

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Have results been reported and calculated correctly?
(Y) N N/A Are results within the calibrated range of the instruments and within the linear range of the ICP?
(Y) N N/A Are all detection limits below the CRDL?

Detected analyte results for Cr were recalculated and verified using the following equation:

Concentration = $\frac{(RD)(FV)(Dil)}{(In.\ Vol.)}$

RD = Raw data concentration
FV = Final volume (ml)
In. Vol. = Initial volume (ml) or weight (G)
Dil = Dilution factor

Recalculation:

Cr = 26.561

#	Sample ID	Analyte	Reported Concentration (µg/L)	Calculated Concentration (µg/L)	Acceptable (Y/N)
	1	Al	12800	12785.515	Y
	2	Cr	26.6	26.561	
	3	Ni	0.65	0.651	
	4	Be (all ND)	ND	ND	
	5	Mn	120	119.551	
	6	K	7070	7071.328	
	1→6	Hg	ND	ND	↓

Note: _____

Long Island City, 30th Street - LDC# 49105

SDG: 4602249191

Analytical Method 8270E

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EB20201	460-224919-3	DIBENZOFURAN	12/19/2020		Y	N	U		U	10	1.1	ug/l
EB20201	460-224919-3	2-Methylphenol (O-Cresol)	12/19/2020		Y	N	U		U	10	0.67	ug/l
EB20201	460-224919-3	N-NITROSODIPHENYLAMINE	12/19/2020		Y	N	U		U	10	0.89	ug/l
EB20201	460-224919-3	PENTACHLOROPHENOL	12/19/2020		Y	N	U		U	30	1.4	ug/l
EB20201	460-224919-3	N-NITROSODI-N-PROPYLAMINE	12/19/2020		Y	N	U		U	1.0	0.43	ug/l
EB20201	460-224919-3	NITROBENZENE	12/19/2020		Y	N	U		U	1.0	0.57	ug/l
EB20201	460-224919-3	NAPHTHALENE	12/19/2020		Y	N	U		U	2.0	0.54	ug/l
EB20201	460-224919-3	DI-N-BUTYL PHTHALATE	12/19/2020		Y	N	U		U	10	0.84	ug/l
EB20201	460-224919-3	BENZO(K)FLUORANTHENE	12/19/2020		Y	N	U		U	1.0	0.67	ug/l
EB20201	460-224919-3	DIETHYL PHTHALATE	12/19/2020		Y	N	U		U	10	0.98	ug/l
EB20201	460-224919-3	2-CHLORONAPHTHALENE	12/19/2020		Y	N	U		U	10	1.2	ug/l
EB20201	460-224919-3	DIBENZ(A,H)ANTHRACENE	12/19/2020		Y	N	U	UJ	UJ	1.0	0.72	ug/l
EB20201	460-224919-3	CHRYSENE	12/19/2020		Y	N	U		U	10	0.91	ug/l
EB20201	460-224919-3	CARBAZOLE	12/19/2020		Y	N	U		U	10	0.68	ug/l
EB20201	460-224919-3	CAPROLACTAM	12/19/2020		Y	N	U		U	10	2.2	ug/l
EB20201	460-224919-3	BIS(2-ETHYLHEXYL) PHTHALATE	12/19/2020		Y	N	U		U	10	0.80	ug/l
EB20201	460-224919-3	BIS(2-CHLOROISOPROPYL) ETHER	12/19/2020		Y	N	U		U	10	0.63	ug/l
EB20201	460-224919-3	BIS(2-CHLOROETHOXY) METHANE	12/19/2020		Y	N	U		U	10	0.59	ug/l
EB20201	460-224919-3	BENZYL BUTYL PHTHALATE	12/19/2020		Y	N	U		U	10	0.85	ug/l
EB20201	460-224919-3	DIMETHYL PHTHALATE	12/19/2020		Y	N	U		U	10	0.77	ug/l
EB20201	460-224919-3	HEXACHLOROBUTADIENE	12/19/2020		Y	N	U		U	2.0	0.78	ug/l
EB20201	460-224919-3	4-NITROANILINE	12/19/2020		Y	N	U		U	20	1.2	ug/l
EB20201	460-224919-3	1,2,4,5-TETRACHLOROBENZENE	12/19/2020		Y	N	U		U	10	1.2	ug/l

SDG: 4602249191

Analytical Method 8270E

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EB20201	460-224919-3	2,3,4,6-TETRACHLOROPHENOL	12/19/2020		Y	N	U		U	10	0.75	ug/l
EB20201	460-224919-3	2,4,5-TRICHLOROPHENOL	12/19/2020		Y	N	U		U	10	0.88	ug/l
EB20201	460-224919-3	2,4,6-TRICHLOROPHENOL	12/19/2020		Y	N	U		U	10	0.86	ug/l
EB20201	460-224919-3	2,4-DICHLOROPHENOL	12/19/2020		Y	N	U		U	10	1.1	ug/l
EB20201	460-224919-3	ISOPHORONE	12/19/2020		Y	N	U		U	10	0.80	ug/l
EB20201	460-224919-3	INDENO(1,2,3-C,D)PYRENE	12/19/2020		Y	N	U	UJ	UJ	2.0	0.94	ug/l
EB20201	460-224919-3	2-Methylnaphthalene	12/19/2020		Y	N	U		U	10	0.53	ug/l
EB20201	460-224919-3	HEXACHLOROCYCLOPENTADIENE	12/19/2020		Y	N	U		U	10	3.6	ug/l
EB20201	460-224919-3	2-CHLOROPHENOL	12/19/2020		Y	N	U		U	10	0.38	ug/l
EB20201	460-224919-3	ATRAZINE	12/19/2020		Y	N	UT		U	10	1.3	ug/l
EB20201	460-224919-3	BENZALDEHYDE	12/19/2020		Y	N	UT	UJ	UJ	10	2.1	ug/l
EB20201	460-224919-3	BENZO(A)PYRENE	12/19/2020		Y	N	UT		U	1.0	0.41	ug/l
EB20201	460-224919-3	2,4-DIMETHYLPHENOL	12/19/2020		Y	N	U		U	10	0.62	ug/l
EB20201	460-224919-3	2,4-DINITROPHENOL	12/19/2020		Y	N	U		U	30	2.6	ug/l
EB20201	460-224919-3	2,4-DINITROTOLUENE	12/19/2020		Y	N	U		U	2.0	1.0	ug/l
EB20201	460-224919-3	2,6-DINITROTOLUENE	12/19/2020		Y	N	U		U	2.0	0.83	ug/l
EB20201	460-224919-3	BIPHENYL (DIPHENYL)	12/19/2020		Y	N	U		U	10	1.2	ug/l
EB20201	460-224919-3	HEXACHLOROETHANE	12/19/2020		Y	N	U		U	2.0	0.80	ug/l
EB20201	460-224919-3	ACENAPHTHYLENE	12/19/2020		Y	N	U		U	10	0.82	ug/l
EB20201	460-224919-3	BIS(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	12/19/2020		Y	N	U		U	1.0	0.63	ug/l
EB20201	460-224919-3	4-CHLOROANILINE	12/19/2020		Y	N	U		U	1.0	1.9	ug/l
EB20201	460-224919-3	BENZO(G,H,I)PERYLENE	12/19/2020		Y	N	U		U	10	0.70	ug/l
EB20201	460-224919-3	4-BROMOPHENYL PHENYL ETHER	12/19/2020		Y	N	U		U	10	0.75	ug/l
EB20201	460-224919-3	4-CHLOROPHENYL PHENYL ETHER	12/19/2020		Y	N	U		U	10	1.3	ug/l

SDG: 4602249191

Analytical Method 8270E

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EB20201	460-224919-3	4-METHYLPHENOL (P-CRESOL)	12/19/2020		Y	N	U		U	10	0.65	ug/l
EB20201	460-224919-3	3-NITROANILINE	12/19/2020		Y	N	U		U	20	1.9	ug/l
EB20201	460-224919-3	2-NITROANILINE	12/19/2020		Y	N	U		U	20	0.47	ug/l
EB20201	460-224919-3	2-NITROPHENOL	12/19/2020		Y	N	U		U	10	0.75	ug/l
EB20201	460-224919-3	PHENOL	12/19/2020		Y	N	U		U	10	0.29	ug/l
EB20201	460-224919-3	4-CHLORO-3-METHYLPHENOL	12/19/2020		Y	N	U		U	10	0.58	ug/l
EB20201	460-224919-3	ACENAPHTHENE	12/19/2020		Y	N	U		U	10	1.1	ug/l
EB20201	460-224919-3	PYRENE	12/19/2020		Y	N	U		U	10	1.6	ug/l
EB20201	460-224919-3	DI-N-OCTYLPHTHALATE	12/19/2020		Y	N	U		U	10	0.75	ug/l
EB20201	460-224919-3	FLUORANTHENE	12/19/2020		Y	N	U		U	10	0.84	ug/l
EB20201	460-224919-3	FLUORENE	12/19/2020		Y	N	U		U	10	0.91	ug/l
EB20201	460-224919-3	HEXACHLOROBENZENE	12/19/2020		Y	N	U		U	1.0	0.40	ug/l
EB20201	460-224919-3	PHENANTHRENE	12/19/2020		Y	N	U		U	10	1.3	ug/l
EB20201	460-224919-3	ACETOPHENONE	12/19/2020		Y	N	U		U	10	2.3	ug/l
EB20201	460-224919-3	4,6-DINITRO-2-METHYLPHENOL	12/19/2020		Y	N	U		U	30	3.0	ug/l
EB20201	460-224919-3	ANTHRACENE	12/19/2020		Y	N	U		U	10	1.3	ug/l
EB20201	460-224919-3	3,3'-DICHLOROBENZIDINE	12/19/2020		Y	N	U		U	20	1.4	ug/l
EB20201	460-224919-3	BENZO(A)ANTHRACENE	12/19/2020		Y	N	U		U	1.0	0.59	ug/l
EB20201	460-224919-3	BENZO(B)FLUORANTHENE	12/19/2020		Y	N	U		U	2.0	0.68	ug/l
EB20201	460-224919-3	4-NITROPHENOL	12/19/2020		Y	N	U		U	30	4.0	ug/l
FB20201	460-224919-4	PHENOL	12/19/2020		Y	N	U		U	10	0.29	ug/l
FB20201	460-224919-4	PYRENE	12/19/2020		Y	N	U		U	10	1.6	ug/l
FB20201	460-224919-4	DI-N-OCTYLPHTHALATE	12/19/2020		Y	N	U		U	10	0.75	ug/l
FB20201	460-224919-4	DIMETHYL PHTHALATE	12/19/2020		Y	N	U		U	10	0.77	ug/l
FB20201	460-224919-4	ISOPHORONE	12/19/2020		Y	N	U		U	10	0.80	ug/l

SDG: 4602249191

Analytical Method 8270E

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
FB20201	460-224919-4	DIETHYL PHTHALATE	12/19/2020		Y	N	U		U	10	0.98	ug/l
FB20201	460-224919-4	DIBENZOFURAN	12/19/2020		Y	N	U		U	10	1.1	ug/l
FB20201	460-224919-4	DI-N-BUTYL PHTHALATE	12/19/2020		Y	N	U		U	10	0.84	ug/l
FB20201	460-224919-4	PHENANTHRENE	12/19/2020		Y	N	U		U	10	1.3	ug/l
FB20201	460-224919-4	PENTACHLOROPHENOL	12/19/2020		Y	N	U		U	30	1.4	ug/l
FB20201	460-224919-4	N-NITROSODIPHENYLAMINE	12/19/2020		Y	N	U		U	10	0.89	ug/l
FB20201	460-224919-4	N-NITROSODI-N-PROPYLAMINE	12/19/2020		Y	N	U		U	1.0	0.43	ug/l
FB20201	460-224919-4	NAPHTHALENE	12/19/2020		Y	N	U		U	2.0	0.54	ug/l
FB20201	460-224919-4	INDENO(1,2,3-C,D)PYRENE	12/19/2020		Y	N	U	UJ	UJ	2.0	0.94	ug/l
FB20201	460-224919-4	HEXACHLOROETHANE	12/19/2020		Y	N	U		U	2.0	0.80	ug/l
FB20201	460-224919-4	HEXACHLOROCYCLOPENTADIENE	12/19/2020		Y	N	U		U	10	3.6	ug/l
FB20201	460-224919-4	HEXACHLOROBUTADIENE	12/19/2020		Y	N	U		U	2.0	0.78	ug/l
FB20201	460-224919-4	HEXACHLOROBENZENE	12/19/2020		Y	N	U		U	1.0	0.40	ug/l
FB20201	460-224919-4	FLUORENE	12/19/2020		Y	N	U		U	10	0.91	ug/l
FB20201	460-224919-4	FLUORANTHENE	12/19/2020		Y	N	U		U	10	0.84	ug/l
FB20201	460-224919-4	DIBENZ(A,H)ANTHRACENE	12/19/2020		Y	N	U	UJ	UJ	1.0	0.72	ug/l
FB20201	460-224919-4	BIPHENYL (DIPHENYL)	12/19/2020		Y	N	U		U	10	1.2	ug/l
FB20201	460-224919-4	NITROBENZENE	12/19/2020		Y	N	U		U	1.0	0.57	ug/l
FB20201	460-224919-4	2-CHLOROPHENOL	12/19/2020		Y	N	U		U	10	0.38	ug/l
FB20201	460-224919-4	4-METHYLPHENOL (P-CRESOL)	12/19/2020		Y	N	U		U	10	0.65	ug/l
FB20201	460-224919-4	4-CHLOROPHENYL PHENYL ETHER	12/19/2020		Y	N	U		U	10	1.3	ug/l
FB20201	460-224919-4	4-CHLOROANILINE	12/19/2020		Y	N	U		U	1.0	1.9	ug/l
FB20201	460-224919-4	4-CHLORO-3-METHYLPHENOL	12/19/2020		Y	N	U		U	10	0.58	ug/l
FB20201	460-224919-4	4-BROMOPHENYL PHENYL ETHER	12/19/2020		Y	N	U		U	10	0.75	ug/l
FB20201	460-224919-4	4,6-DINITRO-2-METHYLPHENOL	12/19/2020		Y	N	U		U	30	3.0	ug/l

SDG: 4602249191

Analytical Method 8270E

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
FB20201	460-224919-4	3-NITROANILINE	12/19/2020		Y	N	U		U	20	1.9	ug/l
FB20201	460-224919-4	3,3'-DICHLOROBENZIDINE	12/19/2020		Y	N	U		U	20	1.4	ug/l
FB20201	460-224919-4	2-NITROPHENOL	12/19/2020		Y	N	U		U	10	0.75	ug/l
FB20201	460-224919-4	2-NITROANILINE	12/19/2020		Y	N	U		U	20	0.47	ug/l
FB20201	460-224919-4	4-NITROANILINE	12/19/2020		Y	N	U		U	20	1.2	ug/l
FB20201	460-224919-4	CHRYSENE	12/19/2020		Y	N	U		U	10	0.91	ug/l
FB20201	460-224919-4	2-Methylnaphthalene	12/19/2020		Y	N	U		U	10	0.53	ug/l
FB20201	460-224919-4	BIS(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	12/19/2020		Y	N	U		U	1.0	0.63	ug/l
FB20201	460-224919-4	2,6-DINITROTOLUENE	12/19/2020		Y	N	U		U	2.0	0.83	ug/l
FB20201	460-224919-4	2,4-DINITROTOLUENE	12/19/2020		Y	N	U		U	2.0	1.0	ug/l
FB20201	460-224919-4	2,4-DINITROPHENOL	12/19/2020		Y	N	U		U	30	2.6	ug/l
FB20201	460-224919-4	2,4-DIMETHYLPHENOL	12/19/2020		Y	N	U		U	10	0.62	ug/l
FB20201	460-224919-4	2,4-DICHLOROPHENOL	12/19/2020		Y	N	U		U	10	1.1	ug/l
FB20201	460-224919-4	2,4,6-TRICHLOROPHENOL	12/19/2020		Y	N	U		U	10	0.86	ug/l
FB20201	460-224919-4	2,4,5-TRICHLOROPHENOL	12/19/2020		Y	N	U		U	10	0.88	ug/l
FB20201	460-224919-4	2,3,4,6-TETRACHLOROPHENOL	12/19/2020		Y	N	U		U	10	0.75	ug/l
FB20201	460-224919-4	1,2,4,5-TETRACHLOROBENZENE	12/19/2020		Y	N	U		U	10	1.2	ug/l
FB20201	460-224919-4	2-Methylphenol (O-Cresol)	12/19/2020		Y	N	U		U	10	0.67	ug/l
FB20201	460-224919-4	BENZO(K)FLUORANTHENE	12/19/2020		Y	N	U		U	1.0	0.67	ug/l
FB20201	460-224919-4	2-CHLORONAPHTHALENE	12/19/2020		Y	N	U		U	10	1.2	ug/l
FB20201	460-224919-4	4-NITROPHENOL	12/19/2020		Y	N	U		U	30	4.0	ug/l
FB20201	460-224919-4	CARBAZOLE	12/19/2020		Y	N	U		U	10	0.68	ug/l
FB20201	460-224919-4	CAPROLACTAM	12/19/2020		Y	N	U		U	10	2.2	ug/l
FB20201	460-224919-4	BIS(2-ETHYLHEXYL) PHTHALATE	12/19/2020		Y	N	U		U	10	0.80	ug/l

SDG: 4602249191

Analytical Method 8270E

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
FB20201	460-224919-4	BIS(2-CHLOROISOPROPYL) ETHER	12/19/2020		Y	N	U		U	10	0.63	ug/l
FB20201	460-224919-4	BIS(2-CHLOROETHOXY) METHANE	12/19/2020		Y	N	U		U	10	0.59	ug/l
FB20201	460-224919-4	BENZYL BUTYL PHTHALATE	12/19/2020		Y	N	U		U	10	0.85	ug/l
FB20201	460-224919-4	BENZO(G,H,I)PERYLENE	12/19/2020		Y	N	U		U	10	0.70	ug/l
FB20201	460-224919-4	BENZO(B)FLUORANTHENE	12/19/2020		Y	N	U		U	2.0	0.68	ug/l
FB20201	460-224919-4	BENZO(A)ANTHRACENE	12/19/2020		Y	N	U		U	1.0	0.59	ug/l
FB20201	460-224919-4	ACETOPHENONE	12/19/2020		Y	N	U		U	10	2.3	ug/l
FB20201	460-224919-4	BENZALDEHYDE	12/19/2020		Y	N	UT	UJ	UJ	10	2.1	ug/l
FB20201	460-224919-4	BENZO(A)PYRENE	12/19/2020		Y	N	UT		U	1.0	0.41	ug/l
FB20201	460-224919-4	ANTHRACENE	12/19/2020		Y	N	U		U	10	1.3	ug/l
FB20201	460-224919-4	ATRAZINE	12/19/2020		Y	N	UT		U	10	1.3	ug/l
FB20201	460-224919-4	ACENAPHTHENE	12/19/2020		Y	N	U		U	10	1.1	ug/l
FB20201	460-224919-4	ACENAPHTHYLENE	12/19/2020		Y	N	U		U	10	0.82	ug/l
MW-P1-2	460-224919-1	4-CHLOROANILINE	12/19/2020		Y	N	U		U	1.0	1.9	ug/l
MW-P1-2	460-224919-1	4-CHLOROPHENYL PHENYL ETHER	12/19/2020		Y	N	U		U	10	1.3	ug/l
MW-P1-2	460-224919-1	4-METHYLPHENOL (P-CRESOL)	12/19/2020		Y	N	U		U	10	0.65	ug/l
MW-P1-2	460-224919-1	4-NITROANILINE	12/19/2020		Y	N	U		U	20	1.2	ug/l
MW-P1-2	460-224919-1	4-NITROPHENOL	12/19/2020		Y	N	U		U	30	4.0	ug/l
MW-P1-2	460-224919-1	ACENAPHTHENE	12/19/2020		Y	N	U		U	10	1.1	ug/l
MW-P1-2	460-224919-1	ACENAPHTHYLENE	12/19/2020		Y	N	U		U	10	0.82	ug/l
MW-P1-2	460-224919-1	ANTHRACENE	12/19/2020		Y	N	U		U	10	1.3	ug/l
MW-P1-2	460-224919-1	BENZYL BUTYL PHTHALATE	12/19/2020		Y	N	U		U	10	0.85	ug/l
MW-P1-2	460-224919-1	BENZO(K)FLUORANTHENE	12/19/2020		Y	N	U		U	1.0	0.67	ug/l
MW-P1-2	460-224919-1	BENZO(G,H,I)PERYLENE	12/19/2020		Y	N	U	UJ	UJ	10	0.70	ug/l
MW-P1-2	460-224919-1	BENZO(B)FLUORANTHENE	12/19/2020		Y	N	U		U	2.0	0.68	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
MW-P1-2	460-224919-1	4-CHLORO-3-METHYLPHENOL	12/19/2020		Y	N	U		U	10	0.58	ug/l
MW-P1-2	460-224919-1	BENZO(A)ANTHRACENE	12/19/2020		Y	N	U		U	1.0	0.59	ug/l
MW-P1-2	460-224919-1	2,6-DINITROTOLUENE	12/19/2020		Y	N	U		U	2.0	0.83	ug/l
MW-P1-2	460-224919-1	ACETOPHENONE	12/19/2020		Y	N	U		U	10	2.3	ug/l
MW-P1-2	460-224919-1	2-Methylnaphthalene	12/19/2020		Y	N	U		U	10	0.53	ug/l
MW-P1-2	460-224919-1	2,4-DINITROPHENOL	12/19/2020		Y	N	U		U	30	2.6	ug/l
MW-P1-2	460-224919-1	2,4,5-TRICHLOROPHENOL	12/19/2020		Y	N	U		U	10	0.88	ug/l
MW-P1-2	460-224919-1	2,4-DIMETHYLPHENOL	12/19/2020		Y	N	U		U	10	0.62	ug/l
MW-P1-2	460-224919-1	2,4-DICHLOROPHENOL	12/19/2020		Y	N	U		U	10	1.1	ug/l
MW-P1-2	460-224919-1	2,4,6-TRICHLOROPHENOL	12/19/2020		Y	N	U		U	10	0.86	ug/l
MW-P1-2	460-224919-1	BIS(2-CHLOROISOPROPYL) ETHER	12/19/2020		Y	N	U		U	10	0.63	ug/l
MW-P1-2	460-224919-1	2-CHLOROPHENOL	12/19/2020		Y	N	U		U	10	0.38	ug/l
MW-P1-2	460-224919-1	2-CHLORONAPHTHALENE	12/19/2020		Y	N	U		U	10	1.2	ug/l
MW-P1-2	460-224919-1	4-BROMOPHENYL PHENYL ETHER	12/19/2020		Y	N	U		U	10	0.75	ug/l
MW-P1-2	460-224919-1	2-Methylphenol (O-Cresol)	12/19/2020		Y	N	U		U	10	0.67	ug/l
MW-P1-2	460-224919-1	2-NITROANILINE	12/19/2020		Y	N	U		U	20	0.47	ug/l
MW-P1-2	460-224919-1	2-NITROPHENOL	12/19/2020		Y	N	U		U	10	0.75	ug/l
MW-P1-2	460-224919-1	3,3'-DICHLOROBENZIDINE	12/19/2020		Y	N	U	UJ	UJ	20	1.4	ug/l
MW-P1-2	460-224919-1	3-NITROANILINE	12/19/2020		Y	N	U		U	20	1.9	ug/l
MW-P1-2	460-224919-1	4,6-DINITRO-2-METHYLPHENOL	12/19/2020		Y	N	U		U	30	3.0	ug/l
MW-P1-2	460-224919-1	2,4-DINITROTOLUENE	12/19/2020		Y	N	U		U	2.0	1.0	ug/l
MW-P1-2	460-224919-1	BIPHENYL (DIPHENYL)	12/19/2020		Y	N	U		U	10	1.2	ug/l
MW-P1-2	460-224919-1	DIETHYL PHTHALATE	12/19/2020		Y	N	U		U	10	0.98	ug/l
MW-P1-2	460-224919-1	DIBENZOFURAN	12/19/2020		Y	N	U		U	10	1.1	ug/l
MW-P1-2	460-224919-1	DIBENZ(A,H)ANTHRACENE	12/19/2020		Y	N	U	UJ	UJ	1.0	0.72	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
MW-P1-2	460-224919-1	CHRYSENE	12/19/2020		Y	N	U		U	10	0.91	ug/l
MW-P1-2	460-224919-1	CARBAZOLE	12/19/2020		Y	N	U		U	10	0.68	ug/l
MW-P1-2	460-224919-1	BIS(2-ETHYLHEXYL) PHTHALATE	12/19/2020		Y	N	U		U	10	0.80	ug/l
MW-P1-2	460-224919-1	DIMETHYL PHTHALATE	12/19/2020		Y	N	U		U	10	0.77	ug/l
MW-P1-2	460-224919-1	BIS(2-CHLOROETHOXY) METHANE	12/19/2020		Y	N	U		U	10	0.59	ug/l
MW-P1-2	460-224919-1	1,2,4,5-TETRACHLOROBENZENE	12/19/2020		Y	N	U		U	10	1.2	ug/l
MW-P1-2	460-224919-1	2,3,4,6-TETRACHLOROPHENOL	12/19/2020		Y	N	U		U	10	0.75	ug/l
MW-P1-2	460-224919-1	PYRENE	12/19/2020		Y	N	U		U	10	1.6	ug/l
MW-P1-2	460-224919-1	ATRAZINE	12/19/2020		Y	N	UT		U	10	1.3	ug/l
MW-P1-2	460-224919-1	CAPROLACTAM	12/19/2020		Y	N	U		U	10	2.2	ug/l
MW-P1-2	460-224919-1	BENZO(A)PYRENE	12/19/2020		Y	N	UT		U	1.0	0.41	ug/l
MW-P1-2	460-224919-1	INDENO(1,2,3-C,D)PYRENE	12/19/2020		Y	N	UT	UJ	UJ	2.0	0.94	ug/l
MW-P1-2	460-224919-1	BIS(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	12/19/2020		Y	N	U		U	1.0	0.63	ug/l
MW-P1-2	460-224919-1	N-NITROSODIPHENYLAMINE	12/19/2020		Y	N	U		U	10	0.89	ug/l
MW-P1-2	460-224919-1	BENZALDEHYDE	12/19/2020		Y	N	UT	UJ	UJ	10	2.1	ug/l
MW-P1-2	460-224919-1	DI-N-BUTYL PHTHALATE	12/19/2020		Y	N	U		U	10	0.84	ug/l
MW-P1-2	460-224919-1	PHENOL	12/19/2020		Y	N	U		U	10	0.29	ug/l
MW-P1-2	460-224919-1	PENTACHLOROPHENOL	12/19/2020		Y	N	U		U	30	1.4	ug/l
MW-P1-2	460-224919-1	N-NITROSODI-N-PROPYLAMINE	12/19/2020		Y	N	U		U	1.0	0.43	ug/l
MW-P1-2	460-224919-1	NITROBENZENE	12/19/2020		Y	N	U		U	1.0	0.57	ug/l
MW-P1-2	460-224919-1	NAPHTHALENE	12/19/2020		Y	N	U		U	2.0	0.54	ug/l
MW-P1-2	460-224919-1	ISOPHORONE	12/19/2020		Y	N	U		U	10	0.80	ug/l
MW-P1-2	460-224919-1	HEXACHLOROCYCLOPENTADIENE	12/19/2020		Y	N	U		U	10	3.6	ug/l
MW-P1-2	460-224919-1	HEXACHLOROBUTADIENE	12/19/2020		Y	N	U		U	2.0	0.78	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
MW-P1-2	460-224919-1	HEXACHLOROBENZENE	12/19/2020		Y	N	U		U	1.0	0.40	ug/l
MW-P1-2	460-224919-1	FLUORENE	12/19/2020		Y	N	U		U	10	0.91	ug/l
MW-P1-2	460-224919-1	HEXACHLOROETHANE	12/19/2020		Y	N	U		U	2.0	0.80	ug/l
MW-P1-2	460-224919-1	DI-N-OCTYLPHTHALATE	12/19/2020		Y	N	U	UJ	UJ	10	0.75	ug/l
MW-P1-2	460-224919-1	PHENANTHRENE	12/19/2020		Y	N	U		U	10	1.3	ug/l
MW-P1-2	460-224919-1	FLUORANTHENE	12/19/2020		Y	N	U		U	10	0.84	ug/l
MW-P2-2	460-224919-2	PENTACHLOROPHENOL	12/18/2020		Y	N	U		U	30	1.4	ug/l
MW-P2-2	460-224919-2	HEXACHLOROCYCLOPENTADIENE	12/18/2020		Y	N	U		U	10	3.6	ug/l
MW-P2-2	460-224919-2	HEXACHLOROETHANE	12/18/2020		Y	N	U		U	2.0	0.80	ug/l
MW-P2-2	460-224919-2	INDENO(1,2,3-C,D)PYRENE	12/18/2020		Y	N	U	UJ	UJ	2.0	0.94	ug/l
MW-P2-2	460-224919-2	ISOPHORONE	12/18/2020		Y	N	U		U	10	0.80	ug/l
MW-P2-2	460-224919-2	NAPHTHALENE	12/18/2020		Y	N	U		U	2.0	0.54	ug/l
MW-P2-2	460-224919-2	NITROBENZENE	12/18/2020		Y	N	U		U	1.0	0.57	ug/l
MW-P2-2	460-224919-2	N-NITROSODIPHENYLAMINE	12/18/2020		Y	N	U	UJ	UJ	10	0.89	ug/l
MW-P2-2	460-224919-2	PHENANTHRENE	12/18/2020		Y	N	U	UJ	UJ	10	1.3	ug/l
MW-P2-2	460-224919-2	HEXACHLOROBUTADIENE	12/18/2020		Y	N	U		U	2.0	0.78	ug/l
MW-P2-2	460-224919-2	CHRYSENE	12/18/2020		Y	N	U	UJ	UJ	10	0.91	ug/l
MW-P2-2	460-224919-2	PYRENE	12/18/2020		Y	N	U		U	10	1.6	ug/l
MW-P2-2	460-224919-2	PHENOL	12/18/2020		Y	N	U		U	10	0.29	ug/l
MW-P2-2	460-224919-2	N-NITROSODI-N-PROPYLAMINE	12/18/2020		Y	N	U		U	1.0	0.43	ug/l
MW-P2-2	460-224919-2	HEXACHLOROBENZENE	12/18/2020		Y	N	U		U	1.0	0.40	ug/l
MW-P2-2	460-224919-2	FLUORENE	12/18/2020		Y	N	U		U	10	0.91	ug/l
MW-P2-2	460-224919-2	FLUORANTHENE	12/18/2020		Y	N	U	UJ	UJ	10	0.84	ug/l
MW-P2-2	460-224919-2	DI-N-OCTYLPHTHALATE	12/18/2020		Y	N	U		U	10	0.75	ug/l
MW-P2-2	460-224919-2	DI-N-BUTYL PHTHALATE	12/18/2020		Y	N	U	UJ	UJ	10	0.84	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
MW-P2-2	460-224919-2	DIMETHYL PHTHALATE	12/18/2020		Y	N	U		U	10	0.77	ug/l
MW-P2-2	460-224919-2	DIETHYL PHTHALATE	12/18/2020		Y	N	U		U	10	0.98	ug/l
MW-P2-2	460-224919-2	DIBENZ(A,H)ANTHRACENE	12/18/2020		Y	N	U	UJ	UJ	1.0	0.72	ug/l
MW-P2-2	460-224919-2	CARBAZOLE	12/18/2020		Y	N	U		U	10	0.68	ug/l
MW-P2-2	460-224919-2	CAPROLACTAM	12/18/2020		Y	N	U		U	10	2.2	ug/l
MW-P2-2	460-224919-2	BIS(2-ETHYLHEXYL) PHTHALATE	12/18/2020		Y	N	U	UJ	UJ	10	0.80	ug/l
MW-P2-2	460-224919-2	BIS(2-CHLOROISOPROPYL) ETHER	12/18/2020		Y	N	U		U	10	0.63	ug/l
MW-P2-2	460-224919-2	4-CHLORO-3-METHYLPHENOL	12/18/2020		Y	N	U		U	10	0.58	ug/l
MW-P2-2	460-224919-2	BIS(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	12/18/2020		Y	N	U		U	1.0	0.63	ug/l
MW-P2-2	460-224919-2	DIBENZOFURAN	12/18/2020		Y	N	U		U	10	1.1	ug/l
MW-P2-2	460-224919-2	2,4-DICHLOROPHENOL	12/18/2020		Y	N	U		U	10	1.1	ug/l
MW-P2-2	460-224919-2	2-NITROANILINE	12/18/2020		Y	N	U		U	20	0.47	ug/l
MW-P2-2	460-224919-2	2-Methylphenol (O-Cresol)	12/18/2020		Y	N	U		U	10	0.67	ug/l
MW-P2-2	460-224919-2	2-Methylnaphthalene	12/18/2020		Y	N	U		U	10	0.53	ug/l
MW-P2-2	460-224919-2	2-CHLOROPHENOL	12/18/2020		Y	N	U		U	10	0.38	ug/l
MW-P2-2	460-224919-2	2-CHLORONAPHTHALENE	12/18/2020		Y	N	U		U	10	1.2	ug/l
MW-P2-2	460-224919-2	2,6-DINITROTOLUENE	12/18/2020		Y	N	U		U	2.0	0.83	ug/l
MW-P2-2	460-224919-2	2,4-DINITROTOLUENE	12/18/2020		Y	N	U		U	2.0	1.0	ug/l
MW-P2-2	460-224919-2	2-NITROPHENOL	12/18/2020		Y	N	U		U	10	0.75	ug/l
MW-P2-2	460-224919-2	2,4-DIMETHYLPHENOL	12/18/2020		Y	N	U		U	10	0.62	ug/l
MW-P2-2	460-224919-2	ATRAZINE	12/18/2020		Y	N	UT		U	10	1.3	ug/l
MW-P2-2	460-224919-2	2,4,6-TRICHLOROPHENOL	12/18/2020		Y	N	U		U	10	0.86	ug/l
MW-P2-2	460-224919-2	2,4,5-TRICHLOROPHENOL	12/18/2020		Y	N	U		U	10	0.88	ug/l
MW-P2-2	460-224919-2	2,3,4,6-TETRACHLOROPHENOL	12/18/2020		Y	N	U		U	10	0.75	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
MW-P2-2	460-224919-2	1,2,4,5-TETRACHLOROBENZENE	12/18/2020		Y	N	U		U	10	1.2	ug/l
MW-P2-2	460-224919-2	BIS(2-CHLOROETHOXY) METHANE	12/18/2020		Y	N	U		U	10	0.59	ug/l
MW-P2-2	460-224919-2	BENZALDEHYDE	12/18/2020		Y	N	UT	UJ	UJ	10	2.1	ug/l
MW-P2-2	460-224919-2	4-CHLOROPHENYL PHENYL ETHER	12/18/2020		Y	N	U		U	10	1.3	ug/l
MW-P2-2	460-224919-2	BENZO(A)PYRENE	12/18/2020		Y	N	UT		U	1.0	0.41	ug/l
MW-P2-2	460-224919-2	2,4-DINITROPHENOL	12/18/2020		Y	N	U		U	30	2.6	ug/l
MW-P2-2	460-224919-2	BENZO(K)FLUORANTHENE	12/18/2020		Y	N	U		U	1.0	0.67	ug/l
MW-P2-2	460-224919-2	BENZO(G,H,I)PERYLENE	12/18/2020		Y	N	U		U	10	0.70	ug/l
MW-P2-2	460-224919-2	3,3'-DICHLOROBENZIDINE	12/18/2020		Y	N	U	UJ	UJ	20	1.4	ug/l
MW-P2-2	460-224919-2	BIPHENYL (DIPHENYL)	12/18/2020		Y	N	U		U	10	1.2	ug/l
MW-P2-2	460-224919-2	BENZYL BUTYL PHTHALATE	12/18/2020		Y	N	U		U	10	0.85	ug/l
MW-P2-2	460-224919-2	BENZO(B)FLUORANTHENE	12/18/2020		Y	N	U		U	2.0	0.68	ug/l
MW-P2-2	460-224919-2	BENZO(A)ANTHRACENE	12/18/2020		Y	N	U	UJ	UJ	1.0	0.59	ug/l
MW-P2-2	460-224919-2	ANTHRACENE	12/18/2020		Y	N	U		U	10	1.3	ug/l
MW-P2-2	460-224919-2	ACETOPHENONE	12/18/2020		Y	N	U		U	10	2.3	ug/l
MW-P2-2	460-224919-2	ACENAPHTHYLENE	12/18/2020		Y	N	U		U	10	0.82	ug/l
MW-P2-2	460-224919-2	4-NITROPHENOL	12/18/2020		Y	N	U		U	30	4.0	ug/l
MW-P2-2	460-224919-2	4-NITROANILINE	12/18/2020		Y	N	U		U	20	1.2	ug/l
MW-P2-2	460-224919-2	4-METHYLPHENOL (P-CRESOL)	12/18/2020		Y	N	U		U	10	0.65	ug/l
MW-P2-2	460-224919-2	3-NITROANILINE	12/18/2020		Y	N	U		U	20	1.9	ug/l
MW-P2-2	460-224919-2	4-CHLOROANILINE	12/18/2020		Y	N	U		U	1.0	1.9	ug/l
MW-P2-2	460-224919-2	ACENAPHTHENE	12/18/2020		Y	N	U		U	10	1.1	ug/l
MW-P2-2	460-224919-2	4,6-DINITRO-2-METHYLPHENOL	12/18/2020		Y	N	U	UJ	UJ	30	3.0	ug/l
MW-P2-2	460-224919-2	4-BROMOPHENYL PHENYL ETHER	12/18/2020		Y	N	U	UJ	UJ	10	0.75	ug/l

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Analytical Method SW6020

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EB20201	460-224919-3	LEAD	12/20/2020		Y	N	U		U	1.2	0.11	ug/l
EB20201	460-224919-3	CADMIUM	12/20/2020		Y	N	U		U	2.0	0.16	ug/l
EB20201	460-224919-3	CALCIUM	12/20/2020		Y	N	U		U	200	22.7	ug/l
EB20201	460-224919-3	CHROMIUM, TOTAL	12/20/2020		Y	N	U		U	4.0	0.69	ug/l
EB20201	460-224919-3	COBALT	12/20/2020		Y	N	U		U	4.0	0.26	ug/l
EB20201	460-224919-3	BERYLLIUM	12/20/2020		Y	N	U		U	0.80	0.098	ug/l
EB20201	460-224919-3	IRON	12/20/2020		Y	N	U		U	120	8.5	ug/l
EB20201	460-224919-3	ALUMINUM	12/20/2020		Y	N	U		U	40.0	8.0	ug/l
EB20201	460-224919-3	MAGNESIUM	12/20/2020		Y	N	U		U	200	15.4	ug/l
EB20201	460-224919-3	MANGANESE	12/20/2020		Y	N	U		U	8.0	1.1	ug/l
EB20201	460-224919-3	COPPER	12/20/2020		Y	N	U		U	4.0	2.5	ug/l
EB20201	460-224919-3	BARIUM	12/20/2020		Y	N	U		U	4.0	0.91	ug/l
EB20201	460-224919-3	ARSENIC	12/20/2020		Y	N	U		U	2.0	0.89	ug/l
EB20201	460-224919-3	POTASSIUM	12/20/2020		Y	N	U		U	200	112	ug/l
EB20201	460-224919-3	ANTIMONY	12/20/2020		Y	N	U		U	2.0	0.76	ug/l
EB20201	460-224919-3	ZINC	12/20/2020		Y	N	U		U	16.0	5.1	ug/l
EB20201	460-224919-3	SELENIUM	12/20/2020		Y	N	U		U	2.5	0.46	ug/l
EB20201	460-224919-3	SILVER	12/20/2020		Y	N	U		U	2.0	0.19	ug/l
EB20201	460-224919-3	SODIUM	12/20/2020		Y	N	U		U	200	58.2	ug/l
EB20201	460-224919-3	VANADIUM	12/20/2020		Y	N	U		U	4.0	0.37	ug/l
EB20201	460-224919-3	THALLIUM	12/20/2020		Y	N	U		U	0.80	0.17	ug/l
EB20201	460-224919-3	NICKEL	12/22/2020	0.65	Y	Y	J		J	4.0	0.45	ug/l
FB20201	460-224919-4	ALUMINUM	12/20/2020		Y	N	U		U	40.0	8.0	ug/l
FB20201	460-224919-4	CADMIUM	12/20/2020		Y	N	U		U	2.0	0.16	ug/l
FB20201	460-224919-4	MANGANESE	12/20/2020		Y	N	U		U	8.0	1.1	ug/l

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Analytical Method SW6020

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
FB20201	460-224919-4	SODIUM	12/20/2020		Y	N	U		U	200	58.2	ug/l
FB20201	460-224919-4	THALLIUM	12/20/2020		Y	N	U		U	0.80	0.17	ug/l
FB20201	460-224919-4	BARIUM	12/20/2020		Y	N	U		U	4.0	0.91	ug/l
FB20201	460-224919-4	VANADIUM	12/20/2020		Y	N	U		U	4.0	0.37	ug/l
FB20201	460-224919-4	ANTIMONY	12/20/2020		Y	N	U		U	2.0	0.76	ug/l
FB20201	460-224919-4	SILVER	12/20/2020		Y	N	U		U	2.0	0.19	ug/l
FB20201	460-224919-4	SELENIUM	12/20/2020		Y	N	U		U	2.5	0.46	ug/l
FB20201	460-224919-4	NICKEL	12/20/2020		Y	N	U		U	4.0	0.45	ug/l
FB20201	460-224919-4	MAGNESIUM	12/20/2020		Y	N	U		U	200	15.4	ug/l
FB20201	460-224919-4	LEAD	12/20/2020		Y	N	U		U	1.2	0.11	ug/l
FB20201	460-224919-4	IRON	12/20/2020		Y	N	U		U	120	8.5	ug/l
FB20201	460-224919-4	COPPER	12/20/2020		Y	N	U		U	4.0	2.5	ug/l
FB20201	460-224919-4	COBALT	12/20/2020		Y	N	U		U	4.0	0.26	ug/l
FB20201	460-224919-4	CHROMIUM, TOTAL	12/20/2020		Y	N	U		U	4.0	0.69	ug/l
FB20201	460-224919-4	CALCIUM	12/20/2020		Y	N	U		U	200	22.7	ug/l
FB20201	460-224919-4	ZINC	12/20/2020		Y	N	U		U	16.0	5.1	ug/l
FB20201	460-224919-4	BERYLLIUM	12/20/2020		Y	N	U		U	0.80	0.098	ug/l
FB20201	460-224919-4	ARSENIC	12/20/2020		Y	N	U		U	2.0	0.89	ug/l
FB20201	460-224919-4	POTASSIUM	12/20/2020		Y	N	U		U	200	112	ug/l
MW-P1-2	460-224919-1	ZINC	12/20/2020	91.7	Y	Y				16.0	5.1	ug/l
MW-P1-2	460-224919-1	COPPER	12/20/2020	49.4	Y	Y		J	J	4.0	2.5	ug/l
MW-P1-2	460-224919-1	BARIUM	12/20/2020	313	Y	Y				4.0	0.91	ug/l
MW-P1-2	460-224919-1	CHROMIUM, TOTAL	12/20/2020	32.4	Y	Y				4.0	0.69	ug/l
MW-P1-2	460-224919-1	COBALT	12/20/2020	19.0	Y	Y				4.0	0.26	ug/l
MW-P1-2	460-224919-1	IRON	12/20/2020	24400	Y	Y				120	8.5	ug/l

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Analytical Method SW6020

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
MW-P1-2	460-224919-1	LEAD	12/20/2020	13.4	Y	Y				1.2	0.11	ug/l
MW-P1-2	460-224919-1	MAGNESIUM	12/20/2020	71400	Y	Y				200	15.4	ug/l
MW-P1-2	460-224919-1	MANGANESE	12/20/2020	585	Y	Y				8.0	1.1	ug/l
MW-P1-2	460-224919-1	NICKEL	12/20/2020	35.9	Y	Y		J	J	4.0	0.45	ug/l
MW-P1-2	460-224919-1	POTASSIUM	12/20/2020	12500	Y	Y				200	112	ug/l
MW-P1-2	460-224919-1	VANADIUM	12/20/2020	31.6	Y	Y				4.0	0.37	ug/l
MW-P1-2	460-224919-1	ALUMINUM	12/20/2020	12800	Y	Y		J	J	40.0	8.0	ug/l
MW-P1-2	460-224919-1	SODIUM	12/20/2020	286000	Y	Y				200	58.2	ug/l
MW-P1-2	460-224919-1	SILVER	12/20/2020		Y	N	U		U	2.0	0.19	ug/l
MW-P1-2	460-224919-1	ANTIMONY	12/20/2020		Y	N	U		U	2.0	0.76	ug/l
MW-P1-2	460-224919-1	CALCIUM	12/20/2020	163000	Y	Y				200	22.7	ug/l
MW-P1-2	460-224919-1	THALLIUM	12/20/2020	0.27	Y	Y	J		J	0.80	0.17	ug/l
MW-P1-2	460-224919-1	SELENIUM	12/20/2020	2.3	Y	Y	J		J	2.5	0.46	ug/l
MW-P1-2	460-224919-1	CADMIUM	12/20/2020	0.22	Y	Y	J		J	2.0	0.16	ug/l
MW-P1-2	460-224919-1	BERYLLIUM	12/20/2020	0.67	Y	Y	J		J	0.80	0.098	ug/l
MW-P1-2	460-224919-1	ARSENIC	12/20/2020	1.8	Y	Y	J		J	2.0	0.89	ug/l
MW-P1-2	460-224919-1	BARIUM	12/21/2020	209	Y	Y				4.0	0.91	ug/l
MW-P1-2	460-224919-1	LEAD	12/21/2020		Y	N	B	U	U	1.2	0.11	ug/l
MW-P1-2	460-224919-1	ANTIMONY	12/21/2020		Y	N	U		U	2.0	0.76	ug/l
MW-P1-2	460-224919-1	CHROMIUM, TOTAL	12/21/2020	3.9	Y	Y	J		J	4.0	0.69	ug/l
MW-P1-2	460-224919-1	COBALT	12/21/2020	1.0	Y	Y	J		J	4.0	0.26	ug/l
MW-P1-2	460-224919-1	ALUMINUM	12/21/2020		Y	N	U		U	40.0	8.0	ug/l
MW-P1-2	460-224919-1	VANADIUM	12/21/2020	0.81	Y	Y	J		J	4.0	0.37	ug/l
MW-P1-2	460-224919-1	CALCIUM	12/21/2020	156000	Y	Y				200	22.7	ug/l
MW-P1-2	460-224919-1	THALLIUM	12/21/2020		Y	N	J	U	U	0.80	0.17	ug/l

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Analytical Method SW6020

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
MW-P1-2	460-224919-1	ARSENIC	12/21/2020		Y	N	U		U	2.0	0.89	ug/l
MW-P1-2	460-224919-1	BERYLLIUM	12/21/2020		Y	N	U		U	0.80	0.098	ug/l
MW-P1-2	460-224919-1	CADMIUM	12/21/2020		Y	N	U		U	2.0	0.16	ug/l
MW-P1-2	460-224919-1	COPPER	12/21/2020		Y	N	U		U	4.0	2.5	ug/l
MW-P1-2	460-224919-1	IRON	12/21/2020		Y	N	U		U	120	8.5	ug/l
MW-P1-2	460-224919-1	SILVER	12/21/2020		Y	N	U		U	2.0	0.19	ug/l
MW-P1-2	460-224919-1	ZINC	12/21/2020		Y	N	U		U	16.0	5.1	ug/l
MW-P1-2	460-224919-1	NICKEL	12/21/2020	1.8	Y	Y	J		J	4.0	0.45	ug/l
MW-P1-2	460-224919-1	SELENIUM	12/21/2020	2.6	Y	Y				2.5	0.46	ug/l
MW-P1-2	460-224919-1	MAGNESIUM	12/21/2020	66300	Y	Y				200	15.4	ug/l
MW-P1-2	460-224919-1	MANGANESE	12/21/2020	120	Y	Y				8.0	1.1	ug/l
MW-P1-2	460-224919-1	POTASSIUM	12/21/2020	10700	Y	Y				200	112	ug/l
MW-P1-2	460-224919-1	SODIUM	12/21/2020	346000	Y	Y				200	58.2	ug/l
MW-P2-2	460-224919-2	MANGANESE	12/20/2020	194	Y	Y				8.0	1.1	ug/l
MW-P2-2	460-224919-2	NICKEL	12/20/2020	9.9	Y	Y		J	J	4.0	0.45	ug/l
MW-P2-2	460-224919-2	POTASSIUM	12/20/2020	7460	Y	Y				200	112	ug/l
MW-P2-2	460-224919-2	SELENIUM	12/20/2020	6.6	Y	Y				2.5	0.46	ug/l
MW-P2-2	460-224919-2	SODIUM	12/20/2020	60700	Y	Y				200	58.2	ug/l
MW-P2-2	460-224919-2	LEAD	12/20/2020	2.8	Y	Y				1.2	0.11	ug/l
MW-P2-2	460-224919-2	ZINC	12/20/2020	18.5	Y	Y				16.0	5.1	ug/l
MW-P2-2	460-224919-2	IRON	12/20/2020	5780	Y	Y				120	8.5	ug/l
MW-P2-2	460-224919-2	BERYLLIUM	12/20/2020	0.17	Y	Y	J		J	0.80	0.098	ug/l
MW-P2-2	460-224919-2	COBALT	12/20/2020	3.8	Y	Y	J		J	4.0	0.26	ug/l
MW-P2-2	460-224919-2	VANADIUM	12/20/2020	9.1	Y	Y				4.0	0.37	ug/l
MW-P2-2	460-224919-2	ANTIMONY	12/20/2020		Y	N	U		U	2.0	0.76	ug/l

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Analytical Method SW6020

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
MW-P2-2	460-224919-2	THALLIUM	12/20/2020		Y	N	U		U	0.80	0.17	ug/l
MW-P2-2	460-224919-2	SILVER	12/20/2020		Y	N	U		U	2.0	0.19	ug/l
MW-P2-2	460-224919-2	MAGNESIUM	12/20/2020	45700	Y	Y				200	15.4	ug/l
MW-P2-2	460-224919-2	ARSENIC	12/20/2020		Y	N	U		U	2.0	0.89	ug/l
MW-P2-2	460-224919-2	ALUMINUM	12/20/2020	4180	Y	Y		J	J	40.0	8.0	ug/l
MW-P2-2	460-224919-2	BARIUM	12/20/2020	172	Y	Y				4.0	0.91	ug/l
MW-P2-2	460-224919-2	CALCIUM	12/20/2020	125000	Y	Y				200	22.7	ug/l
MW-P2-2	460-224919-2	CHROMIUM, TOTAL	12/20/2020	26.6	Y	Y				4.0	0.69	ug/l
MW-P2-2	460-224919-2	COPPER	12/20/2020	12.2	Y	Y		J	J	4.0	2.5	ug/l
MW-P2-2	460-224919-2	CADMIUM	12/20/2020		Y	N	U		U	2.0	0.16	ug/l
MW-P2-2	460-224919-2	ZINC	12/21/2020		Y	N	U		U	16.0	5.1	ug/l
MW-P2-2	460-224919-2	COBALT	12/21/2020		Y	N	U		U	4.0	0.26	ug/l
MW-P2-2	460-224919-2	BERYLLIUM	12/21/2020		Y	N	U		U	0.80	0.098	ug/l
MW-P2-2	460-224919-2	THALLIUM	12/21/2020		Y	N	U		U	0.80	0.17	ug/l
MW-P2-2	460-224919-2	SILVER	12/21/2020		Y	N	U		U	2.0	0.19	ug/l
MW-P2-2	460-224919-2	LEAD	12/21/2020		Y	N	B	U	U	1.2	0.11	ug/l
MW-P2-2	460-224919-2	COPPER	12/21/2020		Y	N	U		U	4.0	2.5	ug/l
MW-P2-2	460-224919-2	CADMIUM	12/21/2020		Y	N	U		U	2.0	0.16	ug/l
MW-P2-2	460-224919-2	CHROMIUM, TOTAL	12/21/2020	11.0	Y	Y				4.0	0.69	ug/l
MW-P2-2	460-224919-2	IRON	12/21/2020		Y	N	U		U	120	8.5	ug/l
MW-P2-2	460-224919-2	ARSENIC	12/21/2020		Y	N	U		U	2.0	0.89	ug/l
MW-P2-2	460-224919-2	CALCIUM	12/21/2020	126000	Y	Y				200	22.7	ug/l
MW-P2-2	460-224919-2	MAGNESIUM	12/21/2020	45800	Y	Y				200	15.4	ug/l
MW-P2-2	460-224919-2	MANGANESE	12/21/2020	32.7	Y	Y				8.0	1.1	ug/l
MW-P2-2	460-224919-2	POTASSIUM	12/21/2020	7070	Y	Y				200	112	ug/l

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Analytical Method SW6020

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
MW-P2-2	460-224919-2	SELENIUM	12/21/2020	6.8	Y	Y				2.5	0.46	ug/l
MW-P2-2	460-224919-2	SODIUM	12/21/2020	66000	Y	Y				200	58.2	ug/l
MW-P2-2	460-224919-2	VANADIUM	12/21/2020	1.3	Y	Y	J		J	4.0	0.37	ug/l
MW-P2-2	460-224919-2	NICKEL	12/21/2020	0.46	Y	Y	J		J	4.0	0.45	ug/l
MW-P2-2	460-224919-2	ANTIMONY	12/21/2020		Y	N	U		U	2.0	0.76	ug/l
MW-P2-2	460-224919-2	BARIUM	12/21/2020	135	Y	Y				4.0	0.91	ug/l
MW-P2-2	460-224919-2	ALUMINUM	12/21/2020		Y	N	U		U	40.0	8.0	ug/l

Analytical Method SW7470A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EB20201	460-224919-3	MERCURY	12/21/2020		Y	N	U		U	0.20	0.091	ug/l
FB20201	460-224919-4	MERCURY	12/21/2020		Y	N	U		U	0.20	0.091	ug/l
MW-P1-2	460-224919-1	MERCURY	12/21/2020		Y	N	U		U	0.20	0.091	ug/l
MW-P1-2	460-224919-1	MERCURY	12/21/2020		Y	N	U		U	0.20	0.091	ug/l
MW-P2-2	460-224919-2	MERCURY	12/21/2020		Y	N	U		U	0.20	0.091	ug/l
MW-P2-2	460-224919-2	MERCURY	12/21/2020		Y	N	U		U	0.20	0.091	ug/l

Analytical Method SW8081B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EB20201	460-224919-3	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	12/17/2020		Y	N	U		U	0.020	0.0040	ug/l
EB20201	460-224919-3	HEPTACHLOR	12/17/2020		Y	N	U		U	0.020	0.0030	ug/l
EB20201	460-224919-3	HEPTACHLOR EPOXIDE	12/17/2020		Y	N	U		U	0.020	0.0050	ug/l
EB20201	460-224919-3	ALDRIN	12/17/2020		Y	N	U		U	0.020	0.0030	ug/l
EB20201	460-224919-3	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	12/17/2020		Y	N	U		U	0.020	0.0050	ug/l
EB20201	460-224919-3	GAMMA BHC (LINDANE)	12/17/2020		Y	N	U		U	0.020	0.012	ug/l
EB20201	460-224919-3	P,P'-DDE	12/17/2020		Y	N	U		U	0.020	0.0020	ug/l

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Analytical Method SW8081B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EB20201	460-224919-3	Chlordane (Technical)	12/17/2020		Y	N	U		U	0.50	0.055	ug/l
EB20201	460-224919-3	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	12/17/2020		Y	N	U		U	0.020	0.0070	ug/l
EB20201	460-224919-3	ALPHA ENDOSULFAN	12/17/2020		Y	N	U		U	0.020	0.0020	ug/l
EB20201	460-224919-3	ENDRIN KETONE	12/17/2020		Y	N	U		U	0.020	0.0080	ug/l
EB20201	460-224919-3	ENDRIN ALDEHYDE	12/17/2020		Y	N	U		U	0.020	0.0080	ug/l
EB20201	460-224919-3	BETA ENDOSULFAN	12/17/2020		Y	N	U		U	0.020	0.0040	ug/l
EB20201	460-224919-3	TOXAPHENE	12/17/2020		Y	N	U	UJ	UJ	0.50	0.11	ug/l
EB20201	460-224919-3	METHOXYCHLOR	12/17/2020		Y	N	UT		U	0.020	0.0040	ug/l
EB20201	460-224919-3	P,P'-DDD	12/17/2020		Y	N	U		U	0.020	0.0060	ug/l
EB20201	460-224919-3	ENDRIN	12/17/2020		Y	N	U		U	0.020	0.0040	ug/l
EB20201	460-224919-3	ENDOSULFAN SULFATE	12/17/2020		Y	N	U		U	0.020	0.0060	ug/l
EB20201	460-224919-3	DIELDRIN	12/17/2020		Y	N	U		U	0.020	0.0030	ug/l
EB20201	460-224919-3	P,P'-DDT	12/17/2020		Y	N	U		U	0.020	0.0040	ug/l
FB20201	460-224919-4	P,P'-DDE	12/17/2020		Y	N	U		U	0.020	0.0020	ug/l
FB20201	460-224919-4	METHOXYCHLOR	12/17/2020		Y	N	UT		U	0.020	0.0040	ug/l
FB20201	460-224919-4	HEPTACHLOR EPOXIDE	12/17/2020		Y	N	U		U	0.020	0.0050	ug/l
FB20201	460-224919-4	P,P'-DDD	12/17/2020		Y	N	U		U	0.020	0.0060	ug/l
FB20201	460-224919-4	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	12/17/2020		Y	N	U		U	0.020	0.0040	ug/l
FB20201	460-224919-4	ENDRIN ALDEHYDE	12/17/2020		Y	N	U		U	0.020	0.0080	ug/l
FB20201	460-224919-4	ENDRIN	12/17/2020		Y	N	U		U	0.020	0.0040	ug/l
FB20201	460-224919-4	P,P'-DDT	12/17/2020		Y	N	U		U	0.020	0.0040	ug/l
FB20201	460-224919-4	GAMMA BHC (LINDANE)	12/17/2020		Y	N	U		U	0.020	0.012	ug/l
FB20201	460-224919-4	HEPTACHLOR	12/17/2020		Y	N	U		U	0.020	0.0030	ug/l
FB20201	460-224919-4	DIELDRIN	12/17/2020		Y	N	U		U	0.020	0.0030	ug/l

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Analytical Method SW8081B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
FB20201	460-224919-4	BETA ENDOSULFAN	12/17/2020		Y	N	U		U	0.020	0.0040	ug/l
FB20201	460-224919-4	ENDRIN KETONE	12/17/2020		Y	N	U		U	0.020	0.0080	ug/l
FB20201	460-224919-4	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	12/17/2020		Y	N	U		U	0.020	0.0050	ug/l
FB20201	460-224919-4	ENDOSULFAN SULFATE	12/17/2020		Y	N	U		U	0.020	0.0060	ug/l
FB20201	460-224919-4	Chlordane (Technical)	12/17/2020		Y	N	U		U	0.50	0.055	ug/l
FB20201	460-224919-4	ALPHA ENDOSULFAN	12/17/2020		Y	N	U		U	0.020	0.0020	ug/l
FB20201	460-224919-4	TOXAPHENE	12/17/2020		Y	N	U	UJ	UJ	0.50	0.11	ug/l
FB20201	460-224919-4	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	12/17/2020		Y	N	U		U	0.020	0.0070	ug/l
FB20201	460-224919-4	ALDRIN	12/17/2020		Y	N	U		U	0.020	0.0030	ug/l
MW-P1-2	460-224919-1	Chlordane (Technical)	12/17/2020		Y	N	U		U	0.50	0.055	ug/l
MW-P1-2	460-224919-1	HEPTACHLOR	12/17/2020		Y	N	U		U	0.020	0.0030	ug/l
MW-P1-2	460-224919-1	ENDRIN KETONE	12/17/2020		Y	N	U		U	0.020	0.0080	ug/l
MW-P1-2	460-224919-1	P,P'-DDT	12/17/2020		Y	N	U		U	0.020	0.0040	ug/l
MW-P1-2	460-224919-1	GAMMA BHC (LINDANE)	12/17/2020		Y	N	U		U	0.020	0.012	ug/l
MW-P1-2	460-224919-1	ENDRIN ALDEHYDE	12/17/2020		Y	N	U		U	0.020	0.0080	ug/l
MW-P1-2	460-224919-1	ENDRIN	12/17/2020		Y	N	U		U	0.020	0.0040	ug/l
MW-P1-2	460-224919-1	DIELDRIN	12/17/2020		Y	N	U		U	0.020	0.0030	ug/l
MW-P1-2	460-224919-1	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	12/17/2020		Y	N	U		U	0.020	0.0050	ug/l
MW-P1-2	460-224919-1	P,P'-DDE	12/17/2020		Y	N	U		U	0.020	0.0020	ug/l
MW-P1-2	460-224919-1	P,P'-DDD	12/17/2020		Y	N	U		U	0.020	0.0060	ug/l
MW-P1-2	460-224919-1	METHOXYCHLOR	12/17/2020		Y	N	UT		U	0.020	0.0040	ug/l
MW-P1-2	460-224919-1	HEPTACHLOR EPOXIDE	12/17/2020		Y	N	U		U	0.020	0.0050	ug/l
MW-P1-2	460-224919-1	TOXAPHENE	12/17/2020		Y	N	U	UJ	UJ	0.50	0.11	ug/l
MW-P1-2	460-224919-1	ENDOSULFAN SULFATE	12/17/2020		Y	N	U		U	0.020	0.0060	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
MW-P1-2	460-224919-1	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	12/17/2020		Y	N	U		U	0.020	0.0040	ug/l
MW-P1-2	460-224919-1	ALDRIN	12/17/2020		Y	N	U		U	0.020	0.0030	ug/l
MW-P1-2	460-224919-1	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	12/17/2020		Y	N	U		U	0.020	0.0070	ug/l
MW-P1-2	460-224919-1	ALPHA ENDOSULFAN	12/17/2020		Y	N	U		U	0.020	0.0020	ug/l
MW-P1-2	460-224919-1	BETA ENDOSULFAN	12/17/2020		Y	N	U		U	0.020	0.0040	ug/l
MW-P2-2	460-224919-2	ENDRIN KETONE	12/17/2020		Y	N	U		U	0.020	0.0080	ug/l
MW-P2-2	460-224919-2	BETA ENDOSULFAN	12/17/2020		Y	N	U		U	0.020	0.0040	ug/l
MW-P2-2	460-224919-2	GAMMA BHC (LINDANE)	12/17/2020		Y	N	U		U	0.020	0.012	ug/l
MW-P2-2	460-224919-2	ENDOSULFAN SULFATE	12/17/2020		Y	N	U		U	0.020	0.0060	ug/l
MW-P2-2	460-224919-2	ENDRIN	12/17/2020		Y	N	U		U	0.020	0.0040	ug/l
MW-P2-2	460-224919-2	DIELDRIN	12/17/2020		Y	N	U		U	0.020	0.0030	ug/l
MW-P2-2	460-224919-2	HEPTACHLOR	12/17/2020		Y	N	U		U	0.020	0.0030	ug/l
MW-P2-2	460-224919-2	ENDRIN ALDEHYDE	12/17/2020		Y	N	U		U	0.020	0.0080	ug/l
MW-P2-2	460-224919-2	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	12/17/2020		Y	N	U		U	0.020	0.0040	ug/l
MW-P2-2	460-224919-2	Chlordane (Technical)	12/17/2020		Y	N	U		U	0.50	0.055	ug/l
MW-P2-2	460-224919-2	P,P'-DDE	12/17/2020		Y	N	U		U	0.020	0.0020	ug/l
MW-P2-2	460-224919-2	ALPHA ENDOSULFAN	12/17/2020		Y	N	U		U	0.020	0.0020	ug/l
MW-P2-2	460-224919-2	P,P'-DDD	12/17/2020		Y	N	U		U	0.020	0.0060	ug/l
MW-P2-2	460-224919-2	METHOXYCHLOR	12/17/2020		Y	N	UT		U	0.020	0.0040	ug/l
MW-P2-2	460-224919-2	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	12/17/2020		Y	N	U		U	0.020	0.0070	ug/l
MW-P2-2	460-224919-2	HEPTACHLOR EPOXIDE	12/17/2020		Y	N	U		U	0.020	0.0050	ug/l
MW-P2-2	460-224919-2	P,P'-DDT	12/17/2020		Y	N	U		U	0.020	0.0040	ug/l
MW-P2-2	460-224919-2	ALDRIN	12/17/2020		Y	N	U		U	0.020	0.0030	ug/l
MW-P2-2	460-224919-2	TOXAPHENE	12/17/2020		Y	N	U	UJ	UJ	0.50	0.11	ug/l

Analytical Method SW8081B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
MW-P2-2	460-224919-2	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	12/17/2020		Y	N	U		U	0.020	0.0050	ug/l

Analytical Method SW8082A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EB20201	460-224919-3	PCB-1242 (AROCLOR 1242)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
EB20201	460-224919-3	PCB-1248 (AROCLOR 1248)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
EB20201	460-224919-3	PCB-1254 (AROCLOR 1254)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.11	ug/l
EB20201	460-224919-3	PCB-1260 (AROCLOR 1260)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.11	ug/l
EB20201	460-224919-3	PCB-1262 (AROCLOR 1262)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.11	ug/l
EB20201	460-224919-3	PCB-1268 (AROCLOR 1268)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.11	ug/l
EB20201	460-224919-3	TOTAL PCBS	12/17/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
EB20201	460-224919-3	PCB-1221 (AROCLOR 1221)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
EB20201	460-224919-3	PCB-1016 (AROCLOR 1016)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
EB20201	460-224919-3	PCB-1232 (AROCLOR 1232)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
FB20201	460-224919-4	PCB-1242 (AROCLOR 1242)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
FB20201	460-224919-4	PCB-1262 (AROCLOR 1262)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.11	ug/l
FB20201	460-224919-4	PCB-1016 (AROCLOR 1016)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
FB20201	460-224919-4	PCB-1221 (AROCLOR 1221)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
FB20201	460-224919-4	PCB-1232 (AROCLOR 1232)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
FB20201	460-224919-4	PCB-1260 (AROCLOR 1260)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.11	ug/l
FB20201	460-224919-4	PCB-1254 (AROCLOR 1254)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.11	ug/l
FB20201	460-224919-4	PCB-1268 (AROCLOR 1268)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.11	ug/l
FB20201	460-224919-4	TOTAL PCBS	12/17/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
FB20201	460-224919-4	PCB-1248 (AROCLOR 1248)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
MW-P1-2	460-224919-1	PCB-1232 (AROCLOR 1232)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l

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Analytical Method SW8082A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
MW-P1-2	460-224919-1	PCB-1268 (AROCLOR 1268)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.11	ug/l
MW-P1-2	460-224919-1	PCB-1262 (AROCLOR 1262)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.11	ug/l
MW-P1-2	460-224919-1	PCB-1242 (AROCLOR 1242)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
MW-P1-2	460-224919-1	PCB-1221 (AROCLOR 1221)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
MW-P1-2	460-224919-1	PCB-1016 (AROCLOR 1016)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
MW-P1-2	460-224919-1	TOTAL PCBS	12/17/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
MW-P1-2	460-224919-1	PCB-1254 (AROCLOR 1254)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.11	ug/l
MW-P1-2	460-224919-1	PCB-1260 (AROCLOR 1260)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.11	ug/l
MW-P1-2	460-224919-1	PCB-1248 (AROCLOR 1248)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
MW-P2-2	460-224919-2	PCB-1262 (AROCLOR 1262)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.11	ug/l
MW-P2-2	460-224919-2	PCB-1248 (AROCLOR 1248)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
MW-P2-2	460-224919-2	PCB-1016 (AROCLOR 1016)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
MW-P2-2	460-224919-2	PCB-1221 (AROCLOR 1221)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
MW-P2-2	460-224919-2	PCB-1232 (AROCLOR 1232)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
MW-P2-2	460-224919-2	PCB-1242 (AROCLOR 1242)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
MW-P2-2	460-224919-2	PCB-1254 (AROCLOR 1254)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.11	ug/l
MW-P2-2	460-224919-2	PCB-1260 (AROCLOR 1260)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.11	ug/l
MW-P2-2	460-224919-2	PCB-1268 (AROCLOR 1268)	12/17/2020		Y	N	U	UJ	UJ	0.40	0.11	ug/l
MW-P2-2	460-224919-2	TOTAL PCBS	12/17/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EB20201	460-224919-3	TERT-BUTYL METHYL ETHER	12/18/2020		Y	N	U		U	1.0	0.22	ug/l
EB20201	460-224919-3	STYRENE	12/18/2020		Y	N	U		U	1.0	0.42	ug/l
EB20201	460-224919-3	O-XYLENE (1,2-DIMETHYLBENZENE)	12/18/2020		Y	N	U		U	1.0	0.36	ug/l

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Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EB20201	460-224919-3	TETRACHLOROETHYLENE(PCE)	12/18/2020		Y	N	U		U	1.0	0.25	ug/l
EB20201	460-224919-3	METHYLENE CHLORIDE	12/18/2020		Y	N	U		U	1.0	0.32	ug/l
EB20201	460-224919-3	TRANS-1,2-DICHLOROETHENE	12/18/2020		Y	N	U		U	1.0	0.24	ug/l
EB20201	460-224919-3	TRANS-1,3-DICHLOROPROPENE	12/18/2020		Y	N	U		U	1.0	0.22	ug/l
EB20201	460-224919-3	1,2,4-TRICHLOROBENZENE	12/18/2020		Y	N	U		U	1.0	0.37	ug/l
EB20201	460-224919-3	TOLUENE	12/18/2020		Y	N	U		U	1.0	0.38	ug/l
EB20201	460-224919-3	M,P-XYLENES	12/18/2020		Y	N	U		U	1.0	0.30	ug/l
EB20201	460-224919-3	CHLOROBENZENE	12/18/2020		Y	N	U		U	1.0	0.38	ug/l
EB20201	460-224919-3	CHLOROETHANE	12/18/2020		Y	N	U		U	1.0	0.32	ug/l
EB20201	460-224919-3	CHLOROFORM	12/18/2020		Y	N	U		U	1.0	0.33	ug/l
EB20201	460-224919-3	CHLOROMETHANE	12/18/2020		Y	N	U		U	1.0	0.40	ug/l
EB20201	460-224919-3	Cis-1,2-Dichloroethylene	12/18/2020		Y	N	U		U	1.0	0.22	ug/l
EB20201	460-224919-3	CIS-1,3-DICHLOROPROPENE	12/18/2020		Y	N	U		U	1.0	0.22	ug/l
EB20201	460-224919-3	CYCLOHEXANE	12/18/2020		Y	N	U		U	1.0	0.32	ug/l
EB20201	460-224919-3	DIBROMOCHLOROMETHANE	12/18/2020		Y	N	U		U	1.0	0.28	ug/l
EB20201	460-224919-3	CARBON TETRACHLORIDE	12/18/2020		Y	N	U		U	1.0	0.21	ug/l
EB20201	460-224919-3	ETHYLBENZENE	12/18/2020		Y	N	U		U	1.0	0.30	ug/l
EB20201	460-224919-3	Isopropylbenzene (Cumene)	12/18/2020		Y	N	U		U	1.0	0.34	ug/l
EB20201	460-224919-3	METHYL ETHYL KETONE (2-BUTANONE)	12/18/2020		Y	N	U		U	5.0	1.9	ug/l
EB20201	460-224919-3	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	12/18/2020		Y	N	U		U	5.0	1.3	ug/l
EB20201	460-224919-3	METHYLCYCLOHEXANE	12/18/2020		Y	N	U		U	1.0	0.71	ug/l
EB20201	460-224919-3	TRICHLOROETHYLENE (TCE)	12/18/2020		Y	N	U		U	1.0	0.31	ug/l
EB20201	460-224919-3	TRICHLOROFLUOROMETHANE	12/18/2020		Y	N	U		U	1.0	0.32	ug/l
EB20201	460-224919-3	VINYL CHLORIDE	12/18/2020		Y	N	U		U	1.0	0.17	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EB20201	460-224919-3	1,1-DICHLOROETHENE	12/18/2020		Y	N	U		U	1.0	0.26	ug/l
EB20201	460-224919-3	1,1,1-TRICHLOROETHANE	12/18/2020		Y	N	U		U	1.0	0.24	ug/l
EB20201	460-224919-3	DICHLORODIFLUOROMETHANE	12/18/2020		Y	N	U		U	1.0	0.31	ug/l
EB20201	460-224919-3	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	12/18/2020		Y	N	U		U	1.0	0.50	ug/l
EB20201	460-224919-3	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	12/18/2020		Y	N	U		U	1.0	0.31	ug/l
EB20201	460-224919-3	METHYL ACETATE	12/18/2020		Y	N	U		U	5.0	0.79	ug/l
EB20201	460-224919-3	1,1,2,2-TETRACHLOROETHANE	12/18/2020		Y	N	U		U	1.0	0.37	ug/l
EB20201	460-224919-3	CARBON DISULFIDE	12/18/2020		Y	N	U		U	1.0	0.82	ug/l
EB20201	460-224919-3	1,1,2-TRICHLOROETHANE	12/18/2020		Y	N	U		U	1.0	0.20	ug/l
EB20201	460-224919-3	1,1-DICHLOROETHANE	12/18/2020		Y	N	U		U	1.0	0.26	ug/l
EB20201	460-224919-3	1,2-DIBROMO-3-CHLOROPROPANE	12/18/2020		Y	N	U	UJ	UJ	1.0	0.38	ug/l
EB20201	460-224919-3	1,2-DICHLOROBENZENE	12/18/2020		Y	N	U		U	1.0	0.21	ug/l
EB20201	460-224919-3	1,2-DICHLOROETHANE	12/18/2020		Y	N	U		U	1.0	0.43	ug/l
EB20201	460-224919-3	1,2-DICHLOROPROPANE	12/18/2020		Y	N	U		U	1.0	0.35	ug/l
EB20201	460-224919-3	ACETONE	12/18/2020		Y	N	U		U	5.0	4.4	ug/l
EB20201	460-224919-3	BROMOFORM	12/18/2020		Y	N	U	UJ	UJ	1.0	0.54	ug/l
EB20201	460-224919-3	BROMODICHLOROMETHANE	12/18/2020		Y	N	U		U	1.0	0.34	ug/l
EB20201	460-224919-3	1,2,3-TRICHLOROBENZENE	12/18/2020		Y	N	U		U	1.0	0.36	ug/l
EB20201	460-224919-3	1,3-DICHLOROBENZENE	12/18/2020		Y	N	U		U	1.0	0.34	ug/l
EB20201	460-224919-3	BROMOMETHANE	12/18/2020		Y	N	U		U	1.0	0.55	ug/l
EB20201	460-224919-3	BENZENE	12/18/2020		Y	N	U		U	1.0	0.20	ug/l
EB20201	460-224919-3	BROMOCHLOROMETHANE	12/18/2020		Y	N	U		U	1.0	0.41	ug/l
EB20201	460-224919-3	2-HEXANONE	12/18/2020		Y	N	U		U	5.0	1.1	ug/l
EB20201	460-224919-3	1,4-DIOXANE (P-DIOXANE)	12/18/2020		Y	N	U		U	50	28	ug/l
EB20201	460-224919-3	1,4-DICHLOROBENZENE	12/18/2020		Y	N	U		U	1.0	0.33	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
FB20201	460-224919-4	ACETONE	12/18/2020		Y	N	U		U	5.0	4.4	ug/l
FB20201	460-224919-4	BROMOCHLOROMETHANE	12/18/2020		Y	N	U		U	1.0	0.41	ug/l
FB20201	460-224919-4	2-HEXANONE	12/18/2020		Y	N	U		U	5.0	1.1	ug/l
FB20201	460-224919-4	1,4-DIOXANE (P-DIOXANE)	12/18/2020		Y	N	U		U	50	28	ug/l
FB20201	460-224919-4	BENZENE	12/18/2020		Y	N	U		U	1.0	0.20	ug/l
FB20201	460-224919-4	VINYL CHLORIDE	12/18/2020		Y	N	U		U	1.0	0.17	ug/l
FB20201	460-224919-4	BROMOFORM	12/18/2020		Y	N	U	UJ	UJ	1.0	0.54	ug/l
FB20201	460-224919-4	1,4-DICHLOROBENZENE	12/18/2020		Y	N	U		U	1.0	0.33	ug/l
FB20201	460-224919-4	1,1,2-TRICHLOROETHANE	12/18/2020		Y	N	U		U	1.0	0.20	ug/l
FB20201	460-224919-4	BROMOMETHANE	12/18/2020		Y	N	U		U	1.0	0.55	ug/l
FB20201	460-224919-4	CARBON DISULFIDE	12/18/2020		Y	N	U		U	1.0	0.82	ug/l
FB20201	460-224919-4	BROMODICHLOROMETHANE	12/18/2020		Y	N	U		U	1.0	0.34	ug/l
FB20201	460-224919-4	1,3-DICHLOROBENZENE	12/18/2020		Y	N	U		U	1.0	0.34	ug/l
FB20201	460-224919-4	1,2-DICHLOROPROPANE	12/18/2020		Y	N	U		U	1.0	0.35	ug/l
FB20201	460-224919-4	1,2-DICHLOROETHANE	12/18/2020		Y	N	U		U	1.0	0.43	ug/l
FB20201	460-224919-4	1,2-DICHLOROBENZENE	12/18/2020		Y	N	U		U	1.0	0.21	ug/l
FB20201	460-224919-4	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	12/18/2020		Y	N	U		U	1.0	0.50	ug/l
FB20201	460-224919-4	1,2-DIBROMO-3-CHLOROPROPANE	12/18/2020		Y	N	U	UJ	UJ	1.0	0.38	ug/l
FB20201	460-224919-4	1,2,4-TRICHLOROBENZENE	12/18/2020		Y	N	U		U	1.0	0.37	ug/l
FB20201	460-224919-4	1,2,3-TRICHLOROBENZENE	12/18/2020		Y	N	U		U	1.0	0.36	ug/l
FB20201	460-224919-4	1,1-DICHLOROETHANE	12/18/2020		Y	N	U		U	1.0	0.26	ug/l
FB20201	460-224919-4	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	12/18/2020		Y	N	U		U	1.0	0.31	ug/l
FB20201	460-224919-4	1,1,2,2-TETRACHLOROETHANE	12/18/2020		Y	N	U		U	1.0	0.37	ug/l
FB20201	460-224919-4	CARBON TETRACHLORIDE	12/18/2020		Y	N	U		U	1.0	0.21	ug/l
FB20201	460-224919-4	TETRACHLOROETHYLENE(PCE)	12/18/2020		Y	N	U		U	1.0	0.25	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
FB20201	460-224919-4	1,1-DICHLOROETHENE	12/18/2020		Y	N	U		U	1.0	0.26	ug/l
FB20201	460-224919-4	METHYL ACETATE	12/18/2020		Y	N	U		U	5.0	0.79	ug/l
FB20201	460-224919-4	TRICHLOROFLUOROMETHANE	12/18/2020		Y	N	U		U	1.0	0.32	ug/l
FB20201	460-224919-4	TRICHLOROETHYLENE (TCE)	12/18/2020		Y	N	U		U	1.0	0.31	ug/l
FB20201	460-224919-4	TRANS-1,3-DICHLOROPROPENE	12/18/2020		Y	N	U		U	1.0	0.22	ug/l
FB20201	460-224919-4	TRANS-1,2-DICHLOROETHENE	12/18/2020		Y	N	U		U	1.0	0.24	ug/l
FB20201	460-224919-4	TOLUENE	12/18/2020		Y	N	U		U	1.0	0.38	ug/l
FB20201	460-224919-4	TERT-BUTYL METHYL ETHER	12/18/2020		Y	N	U		U	1.0	0.22	ug/l
FB20201	460-224919-4	1,1,1-TRICHLOROETHANE	12/18/2020		Y	N	U		U	1.0	0.24	ug/l
FB20201	460-224919-4	O-XYLENE (1,2-DIMETHYLBENZENE)	12/18/2020		Y	N	U		U	1.0	0.36	ug/l
FB20201	460-224919-4	METHYLENE CHLORIDE	12/18/2020		Y	N	U		U	1.0	0.32	ug/l
FB20201	460-224919-4	METHYLCYCLOHEXANE	12/18/2020		Y	N	U		U	1.0	0.71	ug/l
FB20201	460-224919-4	STYRENE	12/18/2020		Y	N	U		U	1.0	0.42	ug/l
FB20201	460-224919-4	METHYL ETHYL KETONE (2-BUTANONE)	12/18/2020		Y	N	U		U	5.0	1.9	ug/l
FB20201	460-224919-4	CHLOROBENZENE	12/18/2020		Y	N	U		U	1.0	0.38	ug/l
FB20201	460-224919-4	M,P-XYLENES	12/18/2020		Y	N	U		U	1.0	0.30	ug/l
FB20201	460-224919-4	Isopropylbenzene (Cumene)	12/18/2020		Y	N	U		U	1.0	0.34	ug/l
FB20201	460-224919-4	ETHYLBENZENE	12/18/2020		Y	N	U		U	1.0	0.30	ug/l
FB20201	460-224919-4	DICHLORODIFLUOROMETHANE	12/18/2020		Y	N	U		U	1.0	0.31	ug/l
FB20201	460-224919-4	DIBROMOCHLOROMETHANE	12/18/2020		Y	N	U		U	1.0	0.28	ug/l
FB20201	460-224919-4	CYCLOHEXANE	12/18/2020		Y	N	U		U	1.0	0.32	ug/l
FB20201	460-224919-4	CIS-1,3-DICHLOROPROPENE	12/18/2020		Y	N	U		U	1.0	0.22	ug/l
FB20201	460-224919-4	Cis-1,2-Dichloroethylene	12/18/2020		Y	N	U		U	1.0	0.22	ug/l
FB20201	460-224919-4	CHLOROMETHANE	12/18/2020		Y	N	U		U	1.0	0.40	ug/l
FB20201	460-224919-4	CHLOROFORM	12/18/2020		Y	N	U		U	1.0	0.33	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
FB20201	460-224919-4	CHLOROETHANE	12/18/2020		Y	N	U		U	1.0	0.32	ug/l
FB20201	460-224919-4	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	12/18/2020		Y	N	U		U	5.0	1.3	ug/l
MW-P1-2	460-224919-1	Isopropylbenzene (Cumene)	12/18/2020		Y	N	U		U	1.0	0.34	ug/l
MW-P1-2	460-224919-1	1,4-DICHLOROBENZENE	12/18/2020		Y	N	U		U	1.0	0.33	ug/l
MW-P1-2	460-224919-1	METHYL ACETATE	12/18/2020		Y	N	U		U	5.0	0.79	ug/l
MW-P1-2	460-224919-1	CHLOROBENZENE	12/18/2020		Y	N	U		U	1.0	0.38	ug/l
MW-P1-2	460-224919-1	CARBON TETRACHLORIDE	12/18/2020		Y	N	U		U	1.0	0.21	ug/l
MW-P1-2	460-224919-1	CARBON DISULFIDE	12/18/2020		Y	N	U		U	1.0	0.82	ug/l
MW-P1-2	460-224919-1	BROMOMETHANE	12/18/2020		Y	N	U		U	1.0	0.55	ug/l
MW-P1-2	460-224919-1	BROMOFORM	12/18/2020		Y	N	U	UJ	UJ	1.0	0.54	ug/l
MW-P1-2	460-224919-1	BROMODICHLOROMETHANE	12/18/2020		Y	N	U		U	1.0	0.34	ug/l
MW-P1-2	460-224919-1	BROMOCHLOROMETHANE	12/18/2020		Y	N	U		U	1.0	0.41	ug/l
MW-P1-2	460-224919-1	BENZENE	12/18/2020		Y	N	U		U	1.0	0.20	ug/l
MW-P1-2	460-224919-1	ACETONE	12/18/2020		Y	N	U		U	5.0	4.4	ug/l
MW-P1-2	460-224919-1	CHLOROMETHANE	12/18/2020		Y	N	U		U	1.0	0.40	ug/l
MW-P1-2	460-224919-1	1,4-DIOXANE (P-DIOXANE)	12/18/2020		Y	N	U		U	50	28	ug/l
MW-P1-2	460-224919-1	CIS-1,3-DICHLOROPROPENE	12/18/2020		Y	N	U		U	1.0	0.22	ug/l
MW-P1-2	460-224919-1	1,3-DICHLOROBENZENE	12/18/2020		Y	N	U		U	1.0	0.34	ug/l
MW-P1-2	460-224919-1	1,2-DICHLOROPROPANE	12/18/2020		Y	N	U		U	1.0	0.35	ug/l
MW-P1-2	460-224919-1	1,2-DICHLOROETHANE	12/18/2020		Y	N	U		U	1.0	0.43	ug/l
MW-P1-2	460-224919-1	1,2-DICHLOROBENZENE	12/18/2020		Y	N	U		U	1.0	0.21	ug/l
MW-P1-2	460-224919-1	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	12/18/2020		Y	N	U		U	1.0	0.50	ug/l
MW-P1-2	460-224919-1	1,2-DIBROMO-3-CHLOROPROPANE	12/18/2020		Y	N	U	UJ	UJ	1.0	0.38	ug/l
MW-P1-2	460-224919-1	1,2,4-TRICHLOROBENZENE	12/18/2020		Y	N	U		U	1.0	0.37	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
MW-P1-2	460-224919-1	1,2,3-TRICHLOROBENZENE	12/18/2020		Y	N	U		U	1.0	0.36	ug/l
MW-P1-2	460-224919-1	1,1-DICHLOROETHENE	12/18/2020		Y	N	U		U	1.0	0.26	ug/l
MW-P1-2	460-224919-1	1,1-DICHLOROETHANE	12/18/2020		Y	N	U		U	1.0	0.26	ug/l
MW-P1-2	460-224919-1	1,1,2-TRICHLOROETHANE	12/18/2020		Y	N	U		U	1.0	0.20	ug/l
MW-P1-2	460-224919-1	2-HEXANONE	12/18/2020		Y	N	U		U	5.0	1.1	ug/l
MW-P1-2	460-224919-1	VINYL CHLORIDE	12/18/2020		Y	N	U		U	1.0	0.17	ug/l
MW-P1-2	460-224919-1	Cis-1,2-Dichloroethylene	12/18/2020	1.3	Y	Y				1.0	0.22	ug/l
MW-P1-2	460-224919-1	TETRACHLOROETHYLENE(PCE)	12/18/2020	220	Y	Y				1.0	0.25	ug/l
MW-P1-2	460-224919-1	TRANS-1,2-DICHLOROETHENE	12/18/2020		Y	N	U		U	1.0	0.24	ug/l
MW-P1-2	460-224919-1	TOLUENE	12/18/2020		Y	N	U		U	1.0	0.38	ug/l
MW-P1-2	460-224919-1	TERT-BUTYL METHYL ETHER	12/18/2020		Y	N	U		U	1.0	0.22	ug/l
MW-P1-2	460-224919-1	STYRENE	12/18/2020		Y	N	U		U	1.0	0.42	ug/l
MW-P1-2	460-224919-1	O-XYLENE (1,2-DIMETHYLBENZENE)	12/18/2020		Y	N	U		U	1.0	0.36	ug/l
MW-P1-2	460-224919-1	1,1,1-TRICHLOROETHANE	12/18/2020		Y	N	U		U	1.0	0.24	ug/l
MW-P1-2	460-224919-1	1,1,2,2-TETRACHLOROETHANE	12/18/2020		Y	N	U		U	1.0	0.37	ug/l
MW-P1-2	460-224919-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	12/18/2020		Y	N	U		U	1.0	0.31	ug/l
MW-P1-2	460-224919-1	CHLOROETHANE	12/18/2020		Y	N	U		U	1.0	0.32	ug/l
MW-P1-2	460-224919-1	TRICHLOROFLUOROMETHANE	12/18/2020		Y	N	U		U	1.0	0.32	ug/l
MW-P1-2	460-224919-1	CHLOROFORM	12/18/2020	2.2	Y	Y				1.0	0.33	ug/l
MW-P1-2	460-224919-1	TRICHLOROETHYLENE (TCE)	12/18/2020	2.4	Y	Y				1.0	0.31	ug/l
MW-P1-2	460-224919-1	METHYLENE CHLORIDE	12/18/2020		Y	N	U		U	1.0	0.32	ug/l
MW-P1-2	460-224919-1	METHYLCYCLOHEXANE	12/18/2020		Y	N	U		U	1.0	0.71	ug/l
MW-P1-2	460-224919-1	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	12/18/2020		Y	N	U		U	5.0	1.3	ug/l
MW-P1-2	460-224919-1	METHYL ETHYL KETONE (2-BUTANONE)	12/18/2020		Y	N	U		U	5.0	1.9	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
MW-P1-2	460-224919-1	M,P-XYLENES	12/18/2020		Y	N	U		U	1.0	0.30	ug/l
MW-P1-2	460-224919-1	ETHYLBENZENE	12/18/2020		Y	N	U		U	1.0	0.30	ug/l
MW-P1-2	460-224919-1	DICHLORODIFLUOROMETHANE	12/18/2020		Y	N	U		U	1.0	0.31	ug/l
MW-P1-2	460-224919-1	DIBROMOCHLOROMETHANE	12/18/2020		Y	N	U		U	1.0	0.28	ug/l
MW-P1-2	460-224919-1	CYCLOHEXANE	12/18/2020		Y	N	U		U	1.0	0.32	ug/l
MW-P1-2	460-224919-1	TRANS-1,3-DICHLOROPROPENE	12/18/2020		Y	N	U		U	1.0	0.22	ug/l
MW-P2-2	460-224919-2	ETHYLBENZENE	12/18/2020		Y	N	U		U	1.0	0.30	ug/l
MW-P2-2	460-224919-2	TETRACHLOROETHYLENE(PCE)	12/18/2020	32	Y	Y				1.0	0.25	ug/l
MW-P2-2	460-224919-2	CHLOROBENZENE	12/18/2020		Y	N	U		U	1.0	0.38	ug/l
MW-P2-2	460-224919-2	BENZENE	12/18/2020		Y	N	U		U	1.0	0.20	ug/l
MW-P2-2	460-224919-2	BROMOCHLOROMETHANE	12/18/2020		Y	N	U		U	1.0	0.41	ug/l
MW-P2-2	460-224919-2	BROMODICHLOROMETHANE	12/18/2020		Y	N	U		U	1.0	0.34	ug/l
MW-P2-2	460-224919-2	BROMOFORM	12/18/2020		Y	N	U	UJ	UJ	1.0	0.54	ug/l
MW-P2-2	460-224919-2	BROMOMETHANE	12/18/2020		Y	N	U		U	1.0	0.55	ug/l
MW-P2-2	460-224919-2	DIBROMOCHLOROMETHANE	12/18/2020		Y	N	U		U	1.0	0.28	ug/l
MW-P2-2	460-224919-2	CARBON TETRACHLORIDE	12/18/2020		Y	N	U		U	1.0	0.21	ug/l
MW-P2-2	460-224919-2	1,4-DIOXANE (P-DIOXANE)	12/18/2020		Y	N	U		U	50	28	ug/l
MW-P2-2	460-224919-2	CHLOROETHANE	12/18/2020		Y	N	U		U	1.0	0.32	ug/l
MW-P2-2	460-224919-2	CHLOROFORM	12/18/2020		Y	N	U		U	1.0	0.33	ug/l
MW-P2-2	460-224919-2	CHLOROMETHANE	12/18/2020		Y	N	U		U	1.0	0.40	ug/l
MW-P2-2	460-224919-2	Cis-1,2-Dichloroethylene	12/18/2020		Y	N	U		U	1.0	0.22	ug/l
MW-P2-2	460-224919-2	CIS-1,3-DICHLOROPROPENE	12/18/2020		Y	N	U		U	1.0	0.22	ug/l
MW-P2-2	460-224919-2	CYCLOHEXANE	12/18/2020		Y	N	U		U	1.0	0.32	ug/l
MW-P2-2	460-224919-2	CARBON DISULFIDE	12/18/2020		Y	N	U		U	1.0	0.82	ug/l
MW-P2-2	460-224919-2	1,2-DIBROMO-3-CHLOROPROPANE	12/18/2020		Y	N	U	UJ	UJ	1.0	0.38	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
MW-P2-2	460-224919-2	1,1,1-TRICHLOROETHANE	12/18/2020		Y	N	U		U	1.0	0.24	ug/l
MW-P2-2	460-224919-2	1,1,2,2-TETRACHLOROETHANE	12/18/2020		Y	N	U		U	1.0	0.37	ug/l
MW-P2-2	460-224919-2	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	12/18/2020		Y	N	U		U	1.0	0.31	ug/l
MW-P2-2	460-224919-2	1,1,2-TRICHLOROETHANE	12/18/2020		Y	N	U		U	1.0	0.20	ug/l
MW-P2-2	460-224919-2	1,1-DICHLOROETHANE	12/18/2020		Y	N	U		U	1.0	0.26	ug/l
MW-P2-2	460-224919-2	1,1-DICHLOROETHENE	12/18/2020		Y	N	U		U	1.0	0.26	ug/l
MW-P2-2	460-224919-2	ACETONE	12/18/2020		Y	N	U		U	5.0	4.4	ug/l
MW-P2-2	460-224919-2	1,2,4-TRICHLOROBENZENE	12/18/2020		Y	N	U		U	1.0	0.37	ug/l
MW-P2-2	460-224919-2	2-HEXANONE	12/18/2020		Y	N	U		U	5.0	1.1	ug/l
MW-P2-2	460-224919-2	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	12/18/2020		Y	N	U		U	1.0	0.50	ug/l
MW-P2-2	460-224919-2	1,2-DICHLOROBENZENE	12/18/2020		Y	N	U		U	1.0	0.21	ug/l
MW-P2-2	460-224919-2	1,2-DICHLOROETHANE	12/18/2020		Y	N	U		U	1.0	0.43	ug/l
MW-P2-2	460-224919-2	M,P-XYLENES	12/18/2020		Y	N	U		U	1.0	0.30	ug/l
MW-P2-2	460-224919-2	1,3-DICHLOROBENZENE	12/18/2020		Y	N	U		U	1.0	0.34	ug/l
MW-P2-2	460-224919-2	1,4-DICHLOROBENZENE	12/18/2020		Y	N	U		U	1.0	0.33	ug/l
MW-P2-2	460-224919-2	1,2,3-TRICHLOROBENZENE	12/18/2020		Y	N	U		U	1.0	0.36	ug/l
MW-P2-2	460-224919-2	TRICHLOROETHYLENE (TCE)	12/18/2020		Y	N	U		U	1.0	0.31	ug/l
MW-P2-2	460-224919-2	DICHLORODIFLUOROMETHANE	12/18/2020		Y	N	U		U	1.0	0.31	ug/l
MW-P2-2	460-224919-2	1,2-DICHLOROPROPANE	12/18/2020		Y	N	U		U	1.0	0.35	ug/l
MW-P2-2	460-224919-2	TRICHLOROFLUOROMETHANE	12/18/2020		Y	N	U		U	1.0	0.32	ug/l
MW-P2-2	460-224919-2	TRANS-1,3-DICHLOROPROPENE	12/18/2020		Y	N	U		U	1.0	0.22	ug/l
MW-P2-2	460-224919-2	TRANS-1,2-DICHLOROETHENE	12/18/2020		Y	N	U		U	1.0	0.24	ug/l
MW-P2-2	460-224919-2	TOLUENE	12/18/2020		Y	N	U		U	1.0	0.38	ug/l
MW-P2-2	460-224919-2	TERT-BUTYL METHYL ETHER	12/18/2020		Y	N	U		U	1.0	0.22	ug/l
MW-P2-2	460-224919-2	O-XYLENE (1,2-DIMETHYLBENZENE)	12/18/2020		Y	N	U		U	1.0	0.36	ug/l

SDG: 4602249191

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
MW-P2-2	460-224919-2	METHYLENE CHLORIDE	12/18/2020		Y	N	U		U	1.0	0.32	ug/l
MW-P2-2	460-224919-2	METHYLCYCLOHEXANE	12/18/2020		Y	N	U		U	1.0	0.71	ug/l
MW-P2-2	460-224919-2	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	12/18/2020		Y	N	U		U	5.0	1.3	ug/l
MW-P2-2	460-224919-2	METHYL ETHYL KETONE (2-BUTANONE)	12/18/2020		Y	N	U		U	5.0	1.9	ug/l
MW-P2-2	460-224919-2	STYRENE	12/18/2020		Y	N	U		U	1.0	0.42	ug/l
MW-P2-2	460-224919-2	VINYL CHLORIDE	12/18/2020		Y	N	U		U	1.0	0.17	ug/l
MW-P2-2	460-224919-2	Isopropylbenzene (Cumene)	12/18/2020		Y	N	U		U	1.0	0.34	ug/l
MW-P2-2	460-224919-2	METHYL ACETATE	12/18/2020		Y	N	U		U	5.0	0.79	ug/l
TB20201	460-224919-5	CYCLOHEXANE	12/18/2020		Y	N	U		U	1.0	0.32	ug/l
TB20201	460-224919-5	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	12/18/2020		Y	N	U		U	5.0	1.3	ug/l
TB20201	460-224919-5	METHYL ETHYL KETONE (2-BUTANONE)	12/18/2020		Y	N	U		U	5.0	1.9	ug/l
TB20201	460-224919-5	METHYL ACETATE	12/18/2020		Y	N	U		U	5.0	0.79	ug/l
TB20201	460-224919-5	M,P-XYLENES	12/18/2020		Y	N	U		U	1.0	0.30	ug/l
TB20201	460-224919-5	Isopropylbenzene (Cumene)	12/18/2020		Y	N	U		U	1.0	0.34	ug/l
TB20201	460-224919-5	ETHYLBENZENE	12/18/2020		Y	N	U		U	1.0	0.30	ug/l
TB20201	460-224919-5	DIBROMOCHLOROMETHANE	12/18/2020		Y	N	U		U	1.0	0.28	ug/l
TB20201	460-224919-5	CIS-1,3-DICHLOROPROPENE	12/18/2020		Y	N	U		U	1.0	0.22	ug/l
TB20201	460-224919-5	METHYLCYCLOHEXANE	12/18/2020		Y	N	U		U	1.0	0.71	ug/l
TB20201	460-224919-5	TRICHLOROETHYLENE (TCE)	12/18/2020		Y	N	U		U	1.0	0.31	ug/l
TB20201	460-224919-5	DICHLORODIFLUOROMETHANE	12/18/2020		Y	N	U		U	1.0	0.31	ug/l
TB20201	460-224919-5	METHYLENE CHLORIDE	12/18/2020		Y	N	U		U	1.0	0.32	ug/l
TB20201	460-224919-5	O-XYLENE (1,2-DIMETHYLBENZENE)	12/18/2020		Y	N	U		U	1.0	0.36	ug/l
TB20201	460-224919-5	STYRENE	12/18/2020		Y	N	U		U	1.0	0.42	ug/l
TB20201	460-224919-5	TERT-BUTYL METHYL ETHER	12/18/2020		Y	N	U		U	1.0	0.22	ug/l

SDG: 4602249191

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
TB20201	460-224919-5	TETRACHLOROETHYLENE(PCE)	12/18/2020		Y	N	U		U	1.0	0.25	ug/l
TB20201	460-224919-5	TOLUENE	12/18/2020		Y	N	U		U	1.0	0.38	ug/l
TB20201	460-224919-5	Cis-1,2-Dichloroethylene	12/18/2020		Y	N	U		U	1.0	0.22	ug/l
TB20201	460-224919-5	TRANS-1,3-DICHLOROPROPENE	12/18/2020		Y	N	U		U	1.0	0.22	ug/l
TB20201	460-224919-5	BROMODICHLOROMETHANE	12/18/2020		Y	N	U		U	1.0	0.34	ug/l
TB20201	460-224919-5	TRICHLOROFLUOROMETHANE	12/18/2020		Y	N	U		U	1.0	0.32	ug/l
TB20201	460-224919-5	VINYL CHLORIDE	12/18/2020		Y	N	U		U	1.0	0.17	ug/l
TB20201	460-224919-5	1,2-DIBROMO-3-CHLOROPROPANE	12/18/2020		Y	N	U	UJ	UJ	1.0	0.38	ug/l
TB20201	460-224919-5	1,2,4-TRICHLOROBENZENE	12/18/2020		Y	N	U		U	1.0	0.37	ug/l
TB20201	460-224919-5	1,2,3-TRICHLOROBENZENE	12/18/2020		Y	N	U		U	1.0	0.36	ug/l
TB20201	460-224919-5	TRANS-1,2-DICHLOROETHENE	12/18/2020		Y	N	U		U	1.0	0.24	ug/l
TB20201	460-224919-5	1,2-DICHLOROETHANE	12/18/2020		Y	N	U		U	1.0	0.43	ug/l
TB20201	460-224919-5	1,1,1-TRICHLOROETHANE	12/18/2020		Y	N	U		U	1.0	0.24	ug/l
TB20201	460-224919-5	1,1,2,2-TETRACHLOROETHANE	12/18/2020		Y	N	U		U	1.0	0.37	ug/l
TB20201	460-224919-5	1,1-DICHLOROETHENE	12/18/2020		Y	N	U		U	1.0	0.26	ug/l
TB20201	460-224919-5	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	12/18/2020		Y	N	U		U	1.0	0.31	ug/l
TB20201	460-224919-5	1,1,2-TRICHLOROETHANE	12/18/2020		Y	N	U		U	1.0	0.20	ug/l
TB20201	460-224919-5	1,1-DICHLOROETHANE	12/18/2020		Y	N	U		U	1.0	0.26	ug/l
TB20201	460-224919-5	1,4-DIOXANE (P-DIOXANE)	12/18/2020		Y	N	U		U	50	28	ug/l
TB20201	460-224919-5	1,4-DICHLOROBENZENE	12/18/2020		Y	N	U		U	1.0	0.33	ug/l
TB20201	460-224919-5	BROMOMETHANE	12/18/2020		Y	N	U		U	1.0	0.55	ug/l
TB20201	460-224919-5	1,2-DICHLOROPROPANE	12/18/2020		Y	N	U		U	1.0	0.35	ug/l
TB20201	460-224919-5	CHLOROMETHANE	12/18/2020		Y	N	U		U	1.0	0.40	ug/l
TB20201	460-224919-5	BROMOFORM	12/18/2020		Y	N	U	UJ	UJ	1.0	0.54	ug/l
TB20201	460-224919-5	CHLOROFORM	12/18/2020		Y	N	U		U	1.0	0.33	ug/l

SDG: 4602249191

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
TB20201	460-224919-5	CHLOROETHANE	12/18/2020		Y	N	U		U	1.0	0.32	ug/l
TB20201	460-224919-5	CHLOROBENZENE	12/18/2020		Y	N	U		U	1.0	0.38	ug/l
TB20201	460-224919-5	1,3-DICHLOROBENZENE	12/18/2020		Y	N	U		U	1.0	0.34	ug/l
TB20201	460-224919-5	CARBON DISULFIDE	12/18/2020		Y	N	U		U	1.0	0.82	ug/l
TB20201	460-224919-5	1,2-DICHLOROBENZENE	12/18/2020		Y	N	U		U	1.0	0.21	ug/l
TB20201	460-224919-5	BROMOCHLOROMETHANE	12/18/2020		Y	N	U		U	1.0	0.41	ug/l
TB20201	460-224919-5	BENZENE	12/18/2020		Y	N	U		U	1.0	0.20	ug/l
TB20201	460-224919-5	ACETONE	12/18/2020		Y	N	U		U	5.0	4.4	ug/l
TB20201	460-224919-5	2-HEXANONE	12/18/2020		Y	N	U		U	5.0	1.1	ug/l
TB20201	460-224919-5	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	12/18/2020		Y	N	U		U	1.0	0.50	ug/l
TB20201	460-224919-5	CARBON TETRACHLORIDE	12/18/2020		Y	N	U		U	1.0	0.21	ug/l

Analytical Method SW8270E-SIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EB20201	460-224919-3	1,4-DIOXANE (P-DIOXANE)	12/19/2020		Y	N	U		U	0.20	0.016	ug/l
FB20201	460-224919-4	1,4-DIOXANE (P-DIOXANE)	12/19/2020		Y	N	U		U	0.20	0.016	ug/l
MW-P1-2	460-224919-1	1,4-DIOXANE (P-DIOXANE)	12/19/2020		Y	N	U		U	0.20	0.016	ug/l
MW-P2-2	460-224919-2	1,4-DIOXANE (P-DIOXANE)	12/19/2020		Y	N	U		U	0.20	0.016	ug/l

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

GEI Consultants
110 Walt Whitman Road, Suite 204
Huntington Station, NY 11746
ATTN: Mr. Bill Fitchett
Wfitchett@geiconsultants.com

January 19, 2021

SUBJECT: Long Island City, 30th Street, Data Usability Summary Report.

Dear Mr. Fitchett,

Enclosed are the final validation reports for the fractions listed below. This SDG was received on December 28, 2020. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #50106:

SDG #	Fraction
460-224520-1	Volatiles, Semivolatiles, 1,4-Dioxane, Chlorinated Pesticides, Polychlorinated Biphenyls, Metals

The data validation was performed under modified Category B guidelines using quality control summaries provided by the laboratory. The analyses were validated using the following documents, as applicable to each method:

- USEPA Region 2 Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-Method 8260B and 8260C, SOP HW-24, Revision 4; October 2014
- USEPA Region 2 Standard Operating Procedure for Semivolatile Data Validation SW-846 Method 8270D, SOP HW-35A, Revision 0; June 2015
- USEPA Region 2 Standard Procedure for Validating Pesticide Compounds Organochlorine Pesticides by Gas Chromatography SW-846 Method 8081B, SOP HW-44, Revision 1.1; December 2010
- USEPA Region 2 Standard Operating Procedure for Validating PCB Compounds, PCBs by Gas Chromatography SW-846 Method 8082A, SOP HW-45, Revision 1; October 2006
- USEPA Region 2 Standard Operating Procedure for the Evaluation of Metals for the Contract Laboratory Program, SOP HW-3b/c, Revision 1; September 2016
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, EPA 540-R-2017-002; January 2017
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, EPA 540-R-2017-001; January 2017

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- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Christina Rink

Christina Rink
crink@lab-data.com
Project Manager/Senior Chemist

71 pages-ADV EQUIS EDD/ NYDUSR Attachment 1

Category B **LDC #50106 (GEI Consultants, Inc. - Huntington Station, NY / 30th Street, Long Island City, Site No. C241214)**

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260D)		SVOA (8270E)		1,4-Diox (8270E -SIM)		Pest. (8081B)		PCBs (8082A)		Metals (6020B /7470A)																					
Matrix: Water/Soil				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	460-224520-1	12/28/20	01/19/21	6	0	5	0	5	0	5	0	5	0	5	0																				
Total	J/CR			6	0	5	0	5	0	5	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31

Shaded cells indicate Category B validation (all other cells are Category A validation). These sample counts do not include MS/MSD, and DUPs

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Site: Long Island City, 30th Street
Laboratory: Eurofins
Report No.: 460-224520-1
Reviewer: Josephine Go and Christina Rink/Laboratory Data Consultants for GEI Consultants, Inc. – Huntington Station, NY
Date: January 18, 2021

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
EB20201209	460-224520-1	VOC, SVOC, 1,4-Dioxane, Pesticide, PCB
FB20201209	460-224520-2	VOC, SVOC, 1,4-Dioxane, Pesticide, PCB
DUP20201209	460-224520-3	VOC, SVOC, 1,4-Dioxane, Pesticide, PCB
MW-P3	460-224520-4	VOC, SVOC, 1,4-Dioxane, Pesticide, PCB
MW-P4	460-224520-5	VOC, SVOC, 1,4-Dioxane, Pesticide, PCB
Trip Blank	460-224520-6	VOC

Associated QC Samples(s):
Field/Trip Blanks: Trip Blank, EB20201209, FB20201209
Field Duplicate pair: DUP20201209 and MW-P3

The above-listed water samples were collected on December 9, 2020 and were analyzed for volatile organic compounds (VOCs) by SW-846 method 8260D, semivolatile organic compounds (SVOCs) by SW-846 method 8270E, 1,4-dioxane by SW-846 method 8270E in selected ion monitor (SIM) mode, chlorinated pesticide by SW-846 method 8081B, and polychlorinated biphenyls (PCBs) by SW-846 method 8082A. The data validation was performed in accordance with the USEPA Region 2 *Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry,* SOP HW-24, Revision 4 (October 2014), USEPA Region 2 *Standard Operating Procedure for Semivolatile Data Validation SW-846 Method 8270D,* SOP HW-35A, Revision 0 (June 2015), the USEPA Region 2 *Standard Operating Procedure for Validating Pesticide Compounds, Organochlorine Pesticides by Gas Chromatography SW-846 Method 8081B* , SOP HW-44, Revision 1.1 (December 2010), the USEPA Region 2 *Standard Operating Procedure for Validating PCB Compounds, PCBs by Gas Chromatography SW-846 Method 8082A,* SOP HW-45, Revision 1 (October 2006), and the USEPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,* EPA 540-R-2017-002 (January 2017), modified as necessary to accommodate the non-CLP methodologies used.

The organic data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) Tunes
- GC/Electron Capture Detector (GC/ECD) Instrument Performance Checks
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Control Sample (LCS) Results
- Internal Standards
- Field Duplicate Results
- Quantitation Limits and Data Assessment
- Sample Quantitation and Compound Identification

Overall Evaluation of Data and Potential Usability Issues

All results are usable as reported or usable with minor qualification due to laboratory quality control outliers.

The validation findings were based on the following information.

Data Completeness

The data package was complete as defined under the requirements for the NYSDEC ASP category B laboratory deliverables.

Holding Times and Sample Preservation

All criteria were met.

GC/MS Tunes

VOC, SVOC, and 1,4-Dioxane

All criteria were met.

GC/ECD Instrument Performance Checks

Pesticide and PCB

All criteria were met.

Initial and Continuing Calibrations

VOC

Initial Calibration:

All criteria were met.

Continuing calibration:

Compounds that did not meet criteria are summarized in the following table.

Date	Standard ID	Compound	CC %D	Associated Samples		Validation Action
12/12/20	TT134526	Dichlorodifluoromethane	22.4	EB20201209	XX	UJ nondetects
		1,2-Dibromo-3-chloropropane	22.8	FB20201209	XX	UJ nondetects
				DUP20201209		
				MW-P3		
				MW-P4		
				Trip Blank		

X = Initial calibration (IC) relative standard deviation (%RSD) > 20; estimate (J/UJ) positive and nondetect results.
XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ) positive and nondetect results.
SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.
+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The dichlorodifluoromethane and 1,2-dibromo-3-chloropropane results for the samples listed above were estimated due to continuing calibration exceedances. The bias cannot be determined. The results can be used for project objectives as nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

SVOC

Initial Calibration:

All criteria were met.

Continuing calibration:

Compounds that did not meet criteria are summarized in the following table.

Date	Standard ID	Compound	CC %D	Associated Samples		Validation Action
12/12/20	A175670	Benzaldehyde	31.9	EB20201209	XX	UJ nondetects
		Benzo(a)pyrene	22.3	FB20201209	XX	UJ nondetects
		Indeno(1,2,3-cd)pyrene	42.5	DUP20201209	XX	UJ nondetects
		Dibenzo(a,h)anthracene	34.9	MW-P3	XX	UJ nondetects
		Benzo(g,h,i)perylene	25.4	MW-P4	XX	UJ nondetects

X = Initial calibration (IC) relative standard deviation (%RSD) > 20; estimate (J/UJ) positive and nondetect results.
XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ) positive and nondetect results.
SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.
+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The benzaldehyde, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene results for the samples listed above were estimated due to continuing calibration exceedances. The bias cannot be determined. The results can be used for project objectives as nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

1,4-Dioxane, Pesticide, and PCB

All criteria were met.

Blanks

VOC

Contamination was not detected in the method blanks.

No positive results were found in the trip blank sample Trip Blank, equipment blank sample EB20201209, and field blank sample FB20201209 for VOC analysis.

SVOC, 1,4-Dioxane, Pesticide, and PCB

Contamination was not detected in the method blanks.

No positive results were found in the equipment blank sample EB20201209 and field blank sample FB20201209 for SVOC, 1,4-dioxane, pesticide, and PCB analyses.

Surrogate Recoveries

VOC, SVOC, 1,4-Dioxane, and Pesticide

All criteria were met.

PCB

The following table lists the surrogate percent recoveries (%R) outside of control limits in the PCB analysis and the resulting validation actions.

Sample ID	Column	Surrogate	%R (Limits)	Validation Action
EB20201209	CLP 1	Tetrachloro-m-xylene	46 (48-125)	UJ nondetects
	CLP 2	Tetrachloro-m-xylene	44 (48-125)	UJ nondetects
DUP20201209	CLP 1	Tetrachloro-m-xylene	36 (48-125)	UJ nondetects
	CLP 2	Tetrachloro-m-xylene	37 (48-125)	UJ nondetects

Sample ID	Column	Surrogate	%R (Limits)	Validation Action
MW-P3	CLP 1	Tetrachloro-m-xylene	43 (48-125)	UJ nondetects
	CLP 2	Tetrachloro-m-xylene	44 (48-125)	UJ nondetects
MW-P4	CLP 1	Tetrachloro-m-xylene	39 (48-125)	UJ nondetects
	CLP 2	Tetrachloro-m-xylene	40 (48-125)	UJ nondetects

The EB20201209, DUP20201209, MW-P3, and MW-P4 PCB results may be biased low. The positive results can be used for project objectives as nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

MS/MSD Results

MS/MSD analyses were not associated with this sample set. Validation action was not required on this basis.

LCS Results

VOC, 1,4-Dioxane, Pesticide, and PCB

All criteria were met.

SVOC

The following table lists the LCS/LCSD percent recoveries (%R) outside of control limits in the SVOC analysis and the resulting validation actions.

LCS ID	Compound	LCS %R (Limits)	LCS/D %R (Limits)	Affected Sample	Validation Action
LCS/LCSD 460-746465/2,3-A	Atrazine	185 (10-150)	186 (10-150)	EB20201209	None
	Benzaldehyde	148 (47-134)	148 (47-134)	FB20201209	
	Benzo(a)pyrene	109 (67-106)	110 (67-106)	DUP20201209	
	Caprolactam	-	61 (10-60)	MW-P3	
				MW-P4	

- Within control limits

Validation action was not required for atrazine, benzaldehyde, benzo(a)pyrene, and caprolactam due to high LCS/LCSD percent recoveries as positive results only are affected and these compounds were not detected in the associated samples.

Internal Standards

All criteria were met.

Field Duplicate Results

Samples DUP20201209 and MW-P3 were submitted as the field duplicate pair with this sample group. The following table summarizes the concentrations.

VOC

Compound	Concentration (ug/L)		RPD
	DUP20201209	MW-P3	
Chloroform	0.81	0.83	2
Tetrachloroethene	110	110	0
Trichloroethene	1.5	1.5	0

SVOC, 1,4-Dioxane, Pesticide, and PCB

There were no detected compounds in the field duplicate pair for SVOC, 1,4-dioxane, pesticide, and PCB.

Quantitation Limits and Data Assessment

Results were reported which were below the reporting limit (RL) and above the method detection limit (MDL) in the VOC analysis. These results were qualified as estimated (J) by the laboratory.

No results were reported below the RL and above the MDL in the SVOC, 1,4-dioxane, pesticide, and PCB analyses.

Dilutions were not required for VOC, SVOC, 1,4-dioxane, pesticide, and PCB analyses.

Sample Quantitation and Compound Identification

Calculations were spot-checked; no discrepancies were noted.

DATA VALIDATION QUALIFIERS

U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.

J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.

JN - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.

R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

LDC #: 50106A1a
SDG #: 460-224520-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Category B

Date: 01/12/21
Page: 1 of 1
Reviewer: JMG
2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / A	ICAL ≤ 20% r² ICV ≤ 30%
IV.	Continuing calibration	SW	CCV ≤ 20%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	EB = 1 FB = 2 TB = 6
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	A	LCS/D
X.	Field duplicates	SW	D = 3/4
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	Results < RL > MDL = J dets
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID		Lab ID	Matrix	Date
1	EB20201209		460-224520-1	Water	12/09/20
2	FB20201209		460-224520-2	Water	12/09/20
3	DUP20201209	D	460-224520-3	Water	12/09/20
4	MW-P3	D	460-224520-4	Water	12/09/20
5	MW-P4		460-224520-5	Water	12/09/20
6	Trip Blank		460-224520-6	Water	12/09/20
7					
8					
9					

Notes:

-	MB 460-746428/8						

LDC #: 50166 A1a

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG

Method: Volatiles (EPA SW 846 Method 8260C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20% and relative response factors (RRF) within method criteria?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 30%?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 20% and relative response factors (RRF) within method criteria?		✓		
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks were identified in this SDG?	✓			
Were target compounds detected in the field blanks?		✓		
VII. Surrogate spikes				
Were all surrogate percent recovery (%R) within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	

LDC #: 50106 A1a

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
X. Field duplicates				
Were field duplicate pairs identified in this SDG?	✓			
Were target compounds detected in the field duplicates?	✓			
XI. Internal standards				
Were internal standard area counts within -50% to +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XII. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	AA. Tetrachloroethene	AAA. 1,3,5-Trimethylbenzene	AAAA. Ethyl tert-butyl ether	A1. 1,3-Butadiene	A2.
B. Bromomethane	BB. 1,1,2,2-Tetrachloroethane	BBB. 4-Chlorotoluene	BBBB. tert-Amyl methyl ether	B1. Hexane	B2.
C. Vinyl choride	CC. Toluene	CCC. tert-Butylbenzene	CCCC. 1-Chlorohexane	C1. Heptane	C2.
D. Chloroethane	DD. Chlorobenzene	DDD. 1,2,4-Trimethylbenzene	DDDD. Isopropyl alcohol	D1. Propylene	D2.
E. Methylene chloride	EE. Ethylbenzene	EEE. sec-Butylbenzene	EEEE. Acetonitrile	E1. Freon 11	E2.
F. Acetone	FF. Styrene	FFF. 1,3-Dichlorobenzene	FFFF. Acrolein	F1. Freon 12	F2.
G. Carbon disulfide	GG. Xylenes, total	GGG. p-Isopropyltoluene	GGGG. Acrylonitrile	G1. Freon 113	G2.
H. 1,1-Dichloroethene	HH. Vinyl acetate	HHH. 1,4-Dichlorobenzene	HHHH. 1,4-Dioxane	H1. Freon 114	H2.
I. 1,1-Dichloroethane	II. 2-Chloroethylvinyl ether	III. n-Butylbenzene	IIII. Isobutyl alcohol	I1. 2-Nitropropane	I2.
J. 1,2-Dichloroethene, total	JJ. Dichlorodifluoromethane	JJJ. 1,2-Dichlorobenzene	JJJJ. Methacrylonitrile	J1. Dimethyl disulfide	J2.
K. Chloroform	KK. Trichlorofluoromethane	KKK. 1,2,4-Trichlorobenzene	KKKK. Propionitrile	K1. 2,3-Dimethyl pentane	K2.
L. 1,2-Dichloroethane	LL. Methyl-tert-butyl ether	LLL. Hexachlorobutadiene	LLLL. Ethyl ether	L1. 2,4-Dimethyl pentane	L2.
M. 2-Butanone	MM. 1,2-Dibromo-3-chloropropane	MMM. Naphthalene	MMMM. Benzyl chloride	M1. 3,3-Dimethyl pentane	M2.
N. 1,1,1-Trichloroethane	NN. Methyl ethyl ketone	NNN. 1,2,3-Trichlorobenzene	NNNN. Iodomethane	N1. 2-Methylpentane	N2.
O. Carbon tetrachloride	OO. 2,2-Dichloropropane	OOO. 1,3,5-Trichlorobenzene	OOOO.1,1-Difluoroethane	O1. 3-Methylpentane	O2.
P. Bromodichloromethane	PP. Bromochloromethane	PPP. trans-1,2-Dichloroethene	PPPP. Tetrahydrofuran	P1. 3-Ethylpentane	P2.
Q. 1,2-Dichloropropane	QQ. 1,1-Dichloropropene	QQQ. cis-1,2-Dichloroethene	QQQQ. Methyl acetate	Q1. 2,2-Dimethylpentane	Q2.
R. cis-1,3-Dichloropropene	RR. Dibromomethane	RRR. m,p-Xylenes	RRRR. Ethyl acetate	R1. 2,2,3- Trimethylbutane	R2.
S. Trichloroethene	SS. 1,3-Dichloropropane	SSS. o-Xylene	SSSS. Cyclohexane	S1. 2,2,4-Trimethylpentane	S2.
T. Dibromochloromethane	TT. 1,2-Dibromoethane	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	TTTT. Methylcyclohexane	T1. 2-Methylhexane	T2.
U. 1,1,2-Trichloroethane	UU. 1,1,1,2-Tetrachloroethane	UUU. 1,2-Dichlorotetrafluoroethane	UUUU. Allyl chloride	U1. Nonanal	U2.
V. Benzene	VV. Isopropylbenzene	VVV. 4-Ethyltoluene	VVVV. Methyl methacrylate	V1. 2-Methylnaphthalene	V2.
W. trans-1,3-Dichloropropene	WW. Bromobenzene	WWW. Ethanol	WWWW. Ethyl methacrylate	W1. Methanol	W2.
X. Bromoform	XX. 1,2,3-Trichloropropane	XXX. Di-isopropyl ether	XXXX. cis-1,4-Dichloro-2-butene	X1. 1,2,3-Trimethylbenzene	X2.
Y. 4-Methyl-2-pentanone	YY. n-Propylbenzene	YYY. tert-Butanol	YYYY. trans-1,4-Dichloro-2-butene	Y1. 2-Propanol	Y2.
Z. 2-Hexanone	ZZ. 2-Chlorotoluene	ZZZ. tert-Butyl alcohol	ZZZZ. Pentachloroethane	Z1.	Z2.

LDC #: 50106 A1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260 D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Y N N/A Were percent differences (%D) ≤20 % and relative response factors (RRF) within the method criteria?

#	Date	Standard ID	Compound	Finding %D (Limit: <20.0%)	Finding RRF (Limit)	Associated Samples	Qualifications
	12/12/20	TT134526	JJ	22.4		All (ND)	J / UJ / A
			MM	22.8		↓ ↓	↓

Note: * = Ave RRF failed method criteria but within validation criteria

LDC #: 50106A1a

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

Compound	Concentration (ug/L)		RPD
	3	4	
K	0.81	0.83	2
AA	110	110	0
S	1.5	1.5	0

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LDC #: 50106A1a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

average RRF = sum of the RRFs/number of standards

%RSD = 100 * (S/X)

A_x = Area of Compound

C_x = Concentration of compound

S= Standard deviation of the RRFs

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 50 std)	Recalculated RRF (RRF 50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL CVOAMS17	11/13/2020	Acetone (BUT)	0.7291	0.7291	0.7930	0.7930	11.6	11.6
			cis-1,2-DCE (FBZ)	0.3605	0.3605	0.3570	0.3570	9.1	9.1
			1,4-Dioxane (DXE)	1.3035	1.3035	1.3689	1.3689	13.1	13.1
			Tetrachloroethene (CBZ)	0.4028	0.4028	0.3950	0.3950	9.9	9.9
			1,1,2,2-TCA (DCB)	1.1352	1.1352	1.0867	1.0867	8.5	8.5

LDC # 50106A1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CCV)	Recalculated RRF (CCV)	Reported % D	Recalculated %D
1	TT134526	12/12/2020	Acetone (BUT)	0.7930	0.7009	0.7009	11.6	11.6
			cis-1,2-DCE (FBZ)	0.3570	0.3312	0.3312	7.2	7.2
			1,4-Dioxane (DXE)	1.3689	1.3171	1.3171	3.8	3.8
			Tetrachloroethene (CBZ)	0.3950	0.3737	0.3737	5.4	5.4
			1,1,2,2-TCA (DCB)	1.0867	1.0737	1.0737	1.2	1.2

LDC #: 58106 A1a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: # 3

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	50.0	51.2	102	102	0
1,2-Dichloroethane-d4		55.6	111	111	
Toluene-d8		53.1	106	106	
Bromofluorobenzene		47.4	95	95	

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 50106A1q

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration
SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: LCS/D 460-74628/4,5

Compound	Spike Added (ug/L)		Spiked Sample Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
1,1-Dichloroethene	20.0	20.0	19.9	18.4	99	99.5	92	92	8	8
Trichloroethene	|	|	19.1	18.6	96	96	93	93	3	3
Benzene	|	|	22.7	21.7	113	113	108	108	4	4
Toluene	|	|	21.1	20.4	105	105	102	102	3	3
Chlorobenzene	✓	✓	19.9	20.0	100	100	100	100	0	0

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 50106A1a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The concentration of the sample was calculated for the compound identified below using the following calculation:

$$\text{Concentration} = \frac{(A_x)(I_s)(V_p)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample purged in milliliters (ml) or grams (g).

V_p = Purge Volume

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 4, PCE:

$$\text{Conc.} = \frac{(215233)(50)}{(282802)(0.3950)}$$

$$= 112.2$$

$$\approx 110 \text{ ug/L}$$

#	Sample ID	Compound	Reported Concentration (ug/L)	Calculated Concentration (ug/L)	Qualification
	4	PCE	110	110	—

LDC #: 50106A2a
SDG #: 460-224520-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Category B

Date: 01/12/21
Page: 1 of 1
Reviewer: JVG
2nd Reviewer:

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270E)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	ICAL ≤ 20% r ICV ≤ 30%
IV.	Continuing calibration	SW	CCV ≤ 20%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	EB = 1 FB = 2
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	SW	LCS/D
X.	Field duplicates	ND	D = 3/4
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	no result < RL
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID		Lab ID	Matrix	Date
1	EB20201209		460-224520-1	Water	12/09/20
2	FB20201209		460-224520-2	Water	12/09/20
3	DUP20201209	D	460-224520-3	Water	12/09/20
4	MW-P3	D	460-224520-4	Water	12/09/20
5	MW-P4		460-224520-5	Water	12/09/20
6					
7					
8					
9					

Notes:

	MB 460-746965/1-	A					

LDC #: 50106A2a

VALIDATION FINDINGS CHECKLIST

Method: Semivolatiles (EPA SW 846 Method 8270D)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. GC/MS Instrument performance check				
Were the DFTPP performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20% and relative response factors (RRF) within method criteria?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 30%?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 20% and relative response factors (RRF) within method criteria?		✓		
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks? If yes, please see the blanks validation findings worksheet.		✓		
VI. Field blanks				
Were field blanks were identified in this SDG?	✓			
Were target compounds detected in the field blanks?		✓		
VII. Surrogate spikes				
Were all surrogate percent recovery (%R) within QC limits?	✓			
If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any percent recoveries (%R) was less than 10%, was a reanalysis performed to confirm %R ?			✓	
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?		✓		
X. Field duplicates				
Were field duplicate pairs identified in this SDG?	✓			
Were target compounds detected in the field duplicates?		✓		
XI. Internal standards				
Were internal standard area counts within -50% to +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XII. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS SVOA

A. Phenol	GG. Acenaphthene	MMM. Bis(2-Chloroisopropyl)ether	SSSS. 2/3-Dimethyldibenzothiophene (4MDT)	Y1. 3,3'-Dimethylbenzidine
B. Bis (2-chloroethyl) ether	HH. 2,4-Dinitrophenol	NNN. Aniline	TTTT. 1-Methyldibenzothiophene (1MDT)	Z1. o-Toluidine
C. 2-Chlorophenol	II. 4-Nitrophenol	OOO. N-Nitrosodimethylamine	UUUU.. 2,3,4,6-Tetrachlorophenol	A2. Benzo(j)fluoranthene
D. 1,3-Dichlorobenzene	JJ. Dibenzofuran	PPP. Benzoic Acid	VVVV. 1,2,4,5-Tetrachlorobenzene	B2. Benzofluoranthenes, total
E. 1,4-Dichlorobenzene	KK. 2,4-Dinitrotoluene	QQQ. Benzyl alcohol	WWWW.. 2-Picoline	C2. trans-Decalin
F. 1,2-Dichlorobenzene	LL. Diethylphthalate	RRR. Pyridine	XXXX. 3-Methylcholanthrene	D2. cis-Decalin
G. 2-Methylphenol	MM. 4-Chlorophenyl-phenyl ether	SSS. Benzidine	YYYY. a,a-Dimethylphenethylamine	E2.
H. 2,2'-Oxybis(1-chloropropane)	NN. Fluorene	TTT. 1-Methylnaphthalene	ZZZZ. Hexachloropropene	F2.
I. 4-Methylphenol	OO. 4-Nitroaniline	UUU.Benzo(b)thiophene	A1. N-Nitrosodiethylamine	G2.
J. N-Nitroso-di-n-propylamine	PP. 4,6-Dinitro-2-methylphenol	VVV.Benzonaphthothiophene	B1. N-Nitrosodi-n-butylamine	H2.
K. Hexachloroethane	QQ. N-Nitrosodiphenylamine	WWW.Benzo(e)pyrene	C1. N-Nitrosomethylethylamine	I2.
L. Nitrobenzene	RR. 4-Bromophenyl-phenylether	XXX. 2,6-Dimethylnaphthalene	D1. N-Nitrosomorpholine	J2.
M. Isophorone	SS. Hexachlorobenzene	YYY. 2,3,5-Trimethylnaphthalene	E1. N-Nitrosopyrrolidine	K2.
N. 2-Nitrophenol	TT. Pentachlorophenol	ZZZ. Perylene	F1. Phenacetin	L2.
O. 2,4-Dimethylphenol	UU. Phenanthrene	AAAA. Dibenzothiophene	G1. 2-Acetylaminofluorene	M2.
P. Bis(2-chloroethoxy)methane	VV. Anthracene	BBBB. Benzo(a)fluoranthene	H1. Pronamide	N2.
Q. 2,4-Dichlorophenol	WW. Carbazole	CCCC. Benzo(b)fluorene	I1. Methyl methanesulfonate	O2.
R. 1,2,4-Trichlorobenzene	XX. Di-n-butylphthalate	DDDD. cis/trans-Decalin	J1. Ethyl methanesulfonate	P2.
S. Naphthalene	YY. Fluoranthene	EEEE. Biphenyl	K1. o,o',o''-Triethylphosphorothioate	Q2.
T. 4-Chloroaniline	ZZ. Pyrene	FFFF. Retene	L1. n-Phenylene diamine	R2.
U. Hexachlorobutadiene	AAA. Butylbenzylphthalate	GGGG. C30-Hopane	M1. 1,4-Naphthoquinone	S2.
V. 4-Chloro-3-methylphenol	BBB. 3,3'-Dichlorobenzidine	HHHH. 1-Methylphenanthrene	N1. N-Nitro-o-toluidine	T2.
W. 2-Methylnaphthalene	CCC. Benzo(a)anthracene	IIII. 1,4-Dioxane	O1. 1,3,5-Trinitrobenzene	U2.
X. Hexachlorocyclopentadiene	DDD. Chrysene	JJJJ. Acetophenone	P1. Pentachlorobenzene	V2..
Y. 2,4,6-Trichlorophenol	EEE. Bis(2-ethylhexyl)phthalate	KKKK. Atrazine	Q1. 4-Aminobiphenyl	W2
Z. 2,4,5-Trichlorophenol	FFF. Di-n-octylphthalate	LLLL. Benzaldehyde	R1. 2-Naphthylamine	X2..
AA. 2-Chloronaphthalene	GGG. Benzo(b)fluoranthene	MMMM. Caprolactam	S1. Triphenylene	Y2.
BB. 2-Nitroaniline	HHH. Benzo(k)fluoranthene	NNNN. 2,6-Dichlorophenol	T1. Octachlorostyrene	Z2.
CC. Dimethylphthalate	III. Benzo(a)pyrene	OOOO. 1,2-Diphenylhydrazine	U1. Famphur	
DD. Acenaphthylene	JJJ. Indeno(1,2,3-cd)pyrene	PPPP. 3-Methylphenol	V1. 1,4-phenylenediamine	
EE. 2,6-Dinitrotoluene	KKK. Dibenz(a,h)anthracene	QQQQ. 3&4-Methylphenol	W1. Methapyrilene	
FF. 3-Nitroaniline	LLL. Benzo(g,h,i)perylene	RRRR. 4-Dimethyldibenzothiophene	X1. Pentachloroethane	

LDC #: 50106A2a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Reviewer: JVG

METHOD: GC/MS BNA (EPA SW 846 Method 8270 C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours of sample analysis for each instrument?

Y N (N/A) Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?

Y (N) N/A Were all %D and RRFs within the validation criteria of ≤20 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: <20.0%)	Finding RRF (Limit: >0.05)	Associated Samples	Qualifications
	12/12/20	A175670	LLL	31.9		All (ND)	J/UJ/A
			III	22.3		↓ ↓	↓
			JJJ	42.5			
			KKK	34.9			
			LLL	25.4			

LDC #: 50106A2a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: JVG

METHOD: GC/MS BNA (EPA SW 846 Method 8270 E)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a LCS required?

Y N N/A Were the LCS/LCSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	LCS/D 460-746465/2,3-A	KKK	185 (10-150)	186 (10-150)	( )	All (ND)	J dets/P
		LLL	148 (47-134)	148 (47-134)	( )		
		III	109 (67-106)	110 (67-106)	( )		
		MMM	( )	61 (10-60)	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
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			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		

LDC #: 50106A2a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC/MS SVOA (EPA SW 846 Method 8270E)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound,
S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 10 Std)	Recalculated RRF (RRF 10 Std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL MS16	12/08/20	Phenol (DCB)	1.8570	1.8570	1.7669	1.7669	4.3	4.3
			Naphthalene (NPT)	1.1473	1.1473	1.0934	1.0934	4.4	4.4
			Diethylphthalate (ANT)	1.4938	1.4938	1.4833	1.4833	0.9	0.9
			Hexachlorobenzene (PHN)	0.2667	0.2667	0.2679	0.2679	5.7	5.7
			Chrysene (CRY)	1.3382	1.3382	1.3514	1.3514	3.6	3.6
			Benzo(a)pyrene (PRY)	1.1228	1.1228	0.9384	0.9384	16.9	16.9

LDC # _50106A2a

VALIDATION FINDINGS WORSHEET
Continuing Calibration Calculation Verification

Reviewer: __JVG___

METHOD: GC/MS SVOA (EPA SW 846 Method 8270E)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound,
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CCV)	Recalculated RRF (CCV)	Reported % D	Recalculated %D
1	A175670 MS16	12/12/20	Phenol (DCB)	1.7669	1.9958	1.9958	13.0	13.0
			Naphthalene (NPT)	1.0934	1.1361	1.1361	3.9	3.9
			Diethylphthalate (ANT)	1.4833	1.4120	1.4120	4.8	4.8
			Hexachlorobenzene (PHN)	0.2679	0.2684	0.2684	0.2	0.2
			Chrysene (CRY)	1.3514	1.3319	1.3319	1.4	1.4
			Benzo(a)pyrene (PRY)	0.9384	1.1475	1.1475	22.3	22.3

LDC #: 50106 A2a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: JVG

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270D) E

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: # 3

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5	10.0	8.21	82	82	0
2-Fluorobiphenyl		7.52	75	75	
Terphenyl-d14		8.49	85	85	
Phenol-d5		3.08	31	31	
2-Fluorophenol		4.42	44	44	
2,4,6-Tribromophenol		7.52	75	75	
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

LDC #: 50106A2a

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: JVG

METHOD: GC/MS BNA (EPA SW 846 Method 8270D)E

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA Where: SSC = Spike concentration
SA = Spike added

RPD = | LCSC - LCSDC | * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: LCS/D 460-74645/2,3-A

Compound	Spike Added (ug/L)		Spike Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Phenol	80.0	80.0	34.7	34.3	43	43	43	43	1	1
N-Nitroso-di-n-propylamine			73.9	74.3	92	92	93	93	1	1
4-Chloro-3-methylphenol			64.2	65.9	80	80	82	82	3	3
Acenaphthene			64.6	68.1	81	81	85	85	5	5
Pentachlorophenol	160.0	160.0	156	161	97	97	101	101	3	3
Pyrene	80.0	80.0	69.6	69.0	87	87	86	86	1	1

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 50106A2a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: JVG

METHOD: GC/MS PAH (EPA SW 846 Method 8270D) E

The concentration of the sample was calculated for the compound identified below using the following calculation:

$$\text{Concentration} = \frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
V_o	=	Volume or weight of sample extract in milliliters (ml) or grams (g).
V_i	=	Volume of extract injected in microliters (ul)
V_t	=	Volume of the concentrated extract in microliters (ul)
Df	=	Dilution Factor.
%S	=	Percent solids, applicable to soil and solid matrices only.
2.0	=	Factor of 2 to account for GPC cleanup

Example:

Sample I.D. MD , Phenol (LCS)

$$\text{Conc} = \frac{(224306)(10)(2\text{ mL})(0.8)(1000)}{(233941)(1.7669)(250\text{ mL})}$$

$$= 34.7\text{ ug/L}$$

#	Sample ID	Compound	Reported Concentration (ug/L)	Calculated Concentration (ug/L)	Qualification
	LCS	Phenol	34.7	34.7	←

LDC #: 50106A2b
SDG #: 460-224520-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Category B

Date: 01/12/21
Page: 1 of 1
Reviewer: JVG
2nd Reviewer:

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8270E-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / A	ICAL ≤ 20% ICV ≤ 30%
IV.	Continuing calibration	A	CCV ≤ 20%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	EB = 1 FB = 2
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	A	LCS/D
X.	Field duplicates	ND	D = 3/4
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	no result <RL
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	EB20201209	460-224520-1	Water	12/09/20
2	FB20201209	460-224520-2	Water	12/09/20
3	DUP20201209	460-224520-3	Water	12/09/20
4	MW-P3	460-224520-4	Water	12/09/20
5	MW-P4	460-224520-5	Water	12/09/20
6				
7				
8				
9				

Notes:

-	MB 460-746475/1	-					

LDC #: 50106A26

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG

Method: PAH (EPA SW 846 Method 8270~~D~~E-SIM)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. GC/MS Instrument performance check (Not required)				
Were the DFTPP performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20% and relative response factors (RRF) ≥ 0.05?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤30%?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 20% and relative response factors (RRF) ≥ 0.05?	✓			
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks identified in this SDG?	✓			
Were target compounds detected in the field blanks?		✓		
VII. Surrogate spikes				
Were all surrogate percent differences (%R) within QC limits?	✓			
If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any percent recoveries (%R) was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
X. Field duplicates				
Were field duplicate pairs identified in this SDG?	✓			
Were target compounds detected in the field duplicates?		✓		
XI. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XII. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

LDC #: 50106A2b

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: JVG

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8270E-SIM)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound,
S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 1.0 std)	Recalculated RRF (RRF 1.0 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL MS9	11/03/20	1,4-Dioxane (DXN)	1.2129	1.2129	1.2625	1.2625	4.0	4.0

LDC # _50106A2b_

VALIDATION FINDINGS WORSHEET
Continuing Calibration Calculation Verification

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8270E-SIM)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound,
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CCV)	Recalculated RRF (CCV)	Reported % D	Recalculated %D
1	C0601	08/11/20	1,4-Dioxane (DXN)	1.2625	1.3541	1.3541	7.3	7.3

LDC #: 50106 A 2b

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: JVG

METHOD: GC/MS SVOA (EPA SW 846 Method 8270E-SIM)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 3

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
2-Methylnaphthalene-d10					
Fluoranthene-d10					
1,4-Dioxane-d8	4.0	1.43	36	36	0

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
2-Methylnaphthalene-d10					
Fluoranthene-d10					
1,4-Dioxane-d8					

LDC #: 50106 A26

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: JVG

METHOD: GC/MS SVOA (EPA SW 846 Method 8270~~D~~E-SIM)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA Where: SSC = Spike concentration
SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: LCSD 460-74645/2,3-A

Compound	Spike Added (ug/L)		Spike Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Acenaphthene										
Pyrene										
1,4-Dioxane	1.60	1.60	1.34	1.47	84	84	92	92	9	9

Comments:

LDC #: 50106A26

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

METHOD: GC/MS SVOA (EPA SW 846 Method 8270E-SIM)

The concentration of the sample was calculated for the compound identified below using the folllowing calculation:

$$\text{Concentration} = \frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_l)(\%S)}$$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

V_o = Volume or weight of sample extract in milliliters (ml) or grams (g).

V_l = Volume of extract injected in microliters (ul)

V_t = Volume of the concentrated extract in microliters (ul)

Df = Dilution Factor.

%S = Percent solids, applicable to soil and solid matrices only.

2.0 = Factor of 2 to account for GPC cleanup

Example:

Sample I.D. ND, 1,4-Dioxane (LCS)

$$\text{Conc.} = \frac{(2235)(4.0)(2\ mL)}{(42126)(1.2625)(250\ mL)}$$

$$= 1.345\ ug/L$$

#	Sample ID	Compound	Reported Concentration (ug/L)	Calculated Concentration (ug/L)	Qualification
	LCS	1,4-Dioxane	1.34	1.34	—

LDC #: 50106A3a
SDG #: 460-224520-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Category B

Date: 01/12/21
Page: 1 of 1
Reviewer: JVG
2nd Reviewer:

METHOD: GC Chlorinated Pesticides (EPA SW846 Method 8081B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	GC Instrument Performance Check	A	
III.	Initial calibration/ICV	A / A	ICAL ≤ 20% ICV ≤ 20%
IV.	Continuing calibration	A	CCV ≤ 20%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	EB = 1 FB = 2
VII.	Surrogate spikes /IS	A/A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	A	LCS/D
X.	Field duplicates	ND	D = 3/4
XI.	Compound quantitation/RL/LOQ/LODs	A	no result < RL
XII.	Target compound identification	A	
XIII.	System Performance	A	
XIV	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID		Lab ID	Matrix	Date
1	EB20201209		460-224520-1	Water	12/09/20
2	FB20201209		460-224520-2	Water	12/09/20
3	DUP20201209	D	460-224520-3	Water	12/09/20
4	MW-P3	D	460-224520-4	Water	12/09/20
5	MW-P4		460-224520-5	Water	12/09/20
6					
7					
8					
9					
10					
11					

Notes:

-	MB 460-746871/1-A						

LDC #: 50106A3a

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG

Method: Pesticides/PCBs (EPA SW 846 Method 8081/8082)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. GC/ECD Instrument performance check				
Was the instrument performance found to be acceptable?	✓			
Were Evaluation mix standards analyzed prior to the initial calibration and at beginning of each 12-hour shift?	✓			
Were endrin and 4,4'-DDT breakdowns ≤ 15% for individual breakdown in the Evaluation mix standards?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?		✓		
Were the RT windows properly established?	✓			
IIIb. Initial calibration verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 20%?	✓			
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks identified in this SDG?	✓			
Were target compounds detected in the field blanks?		✓		
VII. Surrogate spikes/Internal Standards				
Were all surrogate percent recovery (%R) within the QC limits?	✓			
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			✓	

Validation Area	Yes	No	NA	Findings/Comments
If any percent recovery (%R) was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
Were internal standard area counts within ± 50% of the average area calculated during calibration?	✓			
VII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
IX. Laboratory control samples				
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
X. Field duplicates				
Were field duplicate pairs identified in this SDG?	✓			
Were target compounds detected in the field duplicates?		✓		
XI. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions, dry weight factors, and clean-up activities applicable to level IV validation?	✓			
Were relative percent difference (RPD) of the results between two columns ≤ 40%?	✓			
XII. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

LDC #: 50106A3a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: JVG

METHOD: GC Pesticides (EPA SW 846 Method 8081B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

average RRF = sum of the RRFs/number of standards

%RSD = 100 * (S/X)

Where

A_x = Area of Compound

C_x = Concentration of compound,

S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound	Reported RRF (100 std)	Recalculated RRF (100 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL GC5	11/19/2020	g-BHC (CLP1)	1.7404	1.7404	1.6513	1.6513	6.7	6.7
			4,4'-DDT (CLP1)	1.2569	1.2569	1.1818	1.1817	7.1	7.1
			g-BHC (CLP2)	1.6289	1.6289	1.5362	1.5362	6.6	6.6
			4,4'-DDT (CLP2)	1.1519	1.1519	1.0827	1.0827	6.2	6.2

IS= 1-Bromo-2-nitrobenzene - 100 ug/L

LDC # _50106A3a_

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer:__JVG__

METHOD: GC Pesticides (EPA SW 846 Method 8081B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound,
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound	Average RRF Conc	Reported RRF (CC)	Recalculated RRF (CC)	Reported % D	Recalculated % D
1	5F946672 GC5	12/15/2020	g-BHC (CLP1)	100.00	98.81	98.81	1.2	1.2
			4,4'-DDT (CLP1)	100.00	98.22	98.22	1.8	1.8
			g-BHC (CLP2)	100.00	95.65	95.65	4.4	4.4
			4,4'-DDT (CLP2)	100.00	101.72	101.72	1.7	1.7

LDC #: 50106A39

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: JVG

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: # 3

Surrogate	Column	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Tetrachloro-m-xylene	CLP 1	100	56.5	57	57	0
Tetrachloro-m-xylene	2		53.4	53	53	
Decachlorobiphenyl	1		74.8	75	75	
Decachlorobiphenyl	2		63.0	63	63	

Sample ID:

Surrogate	Column	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Tetrachloro-m-xylene						
Tetrachloro-m-xylene						
Decachlorobiphenyl						
Decachlorobiphenyl						

Sample ID:

Surrogate	Column	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Tetrachloro-m-xylene						
Tetrachloro-m-xylene						
Decachlorobiphenyl						
Decachlorobiphenyl						

Notes:

LDC #: 50106 A3a

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicate Results Verification

Reviewer: JVG

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

The percent recoveries (%R) and Relative Percent difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100* (SSC-SC)/SA

Where: SSC = Spiked sample concentration
SA = Spike added
SC = Concentration

RPD = I LCS - LCSD I * 2/(LCS + LCSD)

LCS = Laboratory control sample percent recovery

LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: LCS/D 466-746871/2,3-A

Compound	Spike Added (ug/L)		Spiked Sample Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
gamma-BHC CLP 1	0.800	0.800	0.828	0.823	104	103 104	103	103	1	1
gamma-BHC 2			0.810	0.812	101	102 101	102	102	0	0
4,4'-DDT 1			0.874	0.861	109	109	108	108	2	2
4,4'-DDT 2			0.808	0.805	101	101	101	101	0	0
Aroclor 1260										

Comments: _____

LDC #: 50106A3a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: JVG

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

The concentration of the sample was calculated for the compound identified below using the following calculation:

$$\text{Concentration} = \frac{(A)\,(Fv)\,(Df)}{(RF)\,(Vs \text{ or } Ws)\,(\%S/100)}$$

A = Area of compound
Fv = Final Volume of extract
Df = Dilution Factor
RF = Average Response Factor of compound in ICal
Vs = Initial Volume of sample
Ws = Initial Weight of sample
%S = Percent Solid

Example:

Sample I.D. ND DDT (LCS) CUP2

$$\text{Conc.} = \frac{(7702856\text{4})(100)}{(32275870)\,(1.1818)\,(250\text{ mL})}$$

$= 0.8077$

≈ 0.808 ug/L

#	Sample ID	Compound	Reported Concentration (ug/L)	Calculated Concentration (ug/L)	Qualification
	LCS	DDT	0.808	0.808	—

Note: _____

LDC #: 50106A3b
SDG #: 460-224520-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Category B

Date: 01/12/21
Page: 1 of 1
Reviewer: JVC
2nd Reviewer:

METHOD: GC Polychlorinated Biphenyls (EPA SW846 Method 8082A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	Initial calibration/ICV	A / A	ICAL ≤ 20% ICV ≤ 20%
III.	Continuing calibration	A	CCV ≤ 20%
IV.	Laboratory Blanks	A	
V.	Field blanks	ND	EB = 1 FB = 2
VI.	Surrogate spikes /IS	SW/A	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	A	LCS/D
IX.	Field duplicates	ND	D = 3/4
X.	Compound quantitation/RL/LOQ/LODs	A	no result < RL
XI.	Target compound identification	A	
XII.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID		Lab ID	Matrix	Date
1	EB20201209		460-224520-1	Water	12/09/20
2	FB20201209		460-224520-2	Water	12/09/20
3	DUP20201209	D	460-224520-3	Water	12/09/20
4	MW-P3	D	460-224520-4	Water	12/09/20
5	MW-P4		460-224520-5	Water	12/09/20
6					
7					
8					
9					
10					
11					
12					
13					

Notes:

	MB 460-746307/1-	A					

LDC #: 50106A36

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG

Method: Pesticides/PCBs (EPA SW 846 Method 8081/8082)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. GC/ECD Instrument performance check				
Was the instrument performance found to be acceptable?	✓			
Were Evaluation mix standards analyzed prior to the initial calibration and at beginning of each 12-hour shift?			✓	
Were endrin and 4,4'-DDT breakdowns ≤ 15% for individual breakdown in the Evaluation mix standards?			✓	
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
Were the RT windows properly established?	✓			
IIIb. Initial calibration verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 20%?	✓			
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks identified in this SDG?	✓			
Were target compounds detected in the field blanks?		✓		
VII. Surrogate spikes/Internal Standards				
Were all surrogate percent recovery (%R) within the QC limits?	✓			
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			✓	

Validation Area	Yes	No	NA	Findings/Comments
If any percent recovery (%R) was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
Were internal standard area counts within ± 50% of the average area calculated during calibration?	✓			
VII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
IX. Laboratory control samples				
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
X. Field duplicates				
Were field duplicate pairs identified in this SDG?	✓			
Were target compounds detected in the field duplicates?		✓		
XI. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions, dry weight factors, and clean-up activities applicable to level IV validation?	✓			
Were relative percent difference (RPD) of the results between two columns ≤ 40%?	✓			
XII. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

LDC #: 50106A36

VALIDATION FINDINGS WORKSHEET
Surrogate Spikes

Reviewer: JVG

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

Please see qualification below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Were surrogates spiked into all samples, standards and blanks?

Y (N) N/A Did all surrogate percent recoveries (%R) meet the QC limits?

#	Sample ID	Column	Surrogate Compound	%R (Limits)	Qualifications
	1 (ND)	CLP 1	A	46 (48-125)	J/UJ/P
		↓ 2		44 ( )	
				( )	
	3	CLP 1		36 ( )	
		↓ 2		37 ( )	
				( )	
	4	CLP 1		43 ( )	
		↓ 2		44 ( )	
				( )	
	5	CLP 1		39 ( )	
		↓ 2		40 ( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

Letter Designation	Surrogate Compound	Recovery QC Limits (Soil)	Recovery QC Limits (Water)	Comments
A	Tetrachloro-m-xylene			
B	Decachlorobiphenyl			

LDC #: 50106A3b

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: JVG

METHOD: GC / HPLC _____

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where:
A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound (IS)	Reported CF (1000 std)	Recalculated CF (1000 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL GC8	12/01/20	Aroclor 1260-1 CLP1 (BNB)	0.0581	0.0581	0.0587	0.0587	3.9	3.9
			Aroclor 1260-1 CLP2 (BNB)	0.0302	0.0302	0.0304	0.0304	4.3	4.3

LDC#: 50106A3a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: JVG

METHOD: GC / HPLC____

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration percent difference (%D) values were recalculated for the compounds identified below using the following calculation:

Percent difference (%D) = 100 * (N - C)/N

Where:
N = Initial Calibration Factor or Nominal Amount
C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	CF	Reported CF	Recalculated CF	Reported %D	Recalculated %D
1	8F117585 GC8	12/14/2020	Aroclor 1260-1 CLP1 (BNB)	0.0587	0.0642	0.0642	9.3	9.3
			Aroclor 1260-1 CLP2 (BNB)	0.0304	0.0324	0.0324	6.6	6.6

LDC #: 50106A36

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: JVG

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #3

Surrogate	Column	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Tetrachloro-m-xylene	CLP 1	150	36.0	36	36	9
Tetrachloro-m-xylene	2		37.0	37	37	
Decachlorobiphenyl	1		49.5	50	50	
Decachlorobiphenyl	2	✓	52.1	52	52	✓

Sample ID:

Surrogate	Column	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Tetrachloro-m-xylene						
Tetrachloro-m-xylene						
Decachlorobiphenyl						
Decachlorobiphenyl						

Sample ID:

Surrogate	Column	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Tetrachloro-m-xylene						
Tetrachloro-m-xylene						
Decachlorobiphenyl						
Decachlorobiphenyl						

Notes:

LDC #: 50106A3b

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicate Results Verification

Reviewer: JVG

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

The percent recoveries (%R) and Relative Percent difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100* (SSC-SC)/SA

Where: SSC = Spiked sample concentration
SA = Spike added
SC = Concentration

RPD = I LCS - LCSD I * 2/(LCS + LCSD)

LCS = Laboratory control sample percent recovery

LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: LCSD 466-746367/2,3-A

Compound	Spike Added (ug/L)		Spiked Sample Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
gamma-BHC										
4,4'-DDT										
Aroclor 1260 (1,2)	4.00	4.00	4.79 4.65	4.49 4.42	120 116	120 116	112 111	112 111	6 5	6 5

Comments: _____

LDC #: 50106A3b

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: JVG

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

The concentration of the sample was calculated for the compound identified below using the following calculation:

$$\text{Concentration} = \frac{(A)\,(Fv)\,(Df)}{(RF)\,(Vs \text{ or } Ws)\,(\%S/100)}$$

A = Area of compound
Fv = Final Volume of extract
Df = Dilution Factor
RF = Average Response Factor of compound in ICal
Vs = Initial Volume of sample
Ws = Initial Weight of sample
%S = Percent Solid

Example:

Sample I.D. ND 1260 LCS CUP1

1260-1

Conc. = $\frac{(5475500)(20)}{(1635580)(0.0587)}$

= 1140.63

1260 Ave. = $\frac{1140.8 + 1126.6 + 1200.9 + 1216.3 + 1194.0 + 1205.7 + 1194.6 + 1291.3}{8}$

= 1196.3

final conc. = $\frac{(1196.3)(1\,mL)}{(250\,mL)}$ = 4.785 ug/L

#	Sample ID	Compound	Reported Concentration (ug/L)	Calculated Concentration (ug/L)	Qualification
	LCS	1260	4.79	4.79	—

Note: _____

Site: Long Island City, 30th Street
Laboratory: Eurofins
Report No.: 460-224520-1
Reviewer: An Le and Christina Rink/Laboratory Data Consultants for GEI Consultants, Inc. – Huntington Station, NY
Date: January 18, 2021

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
EB20201209	460-224520-1	Metals
FB20201209	460-224520-2	Metals
DUP20201209	460-224520-3	Metals
MW-P3	460-224520-4	Metals
MW-P4	460-224520-5	Metals
MW-P3MS	460-224520-4MS	Metals
MW-P3DUP	460-224520-4DUP	Metals

Associated QC Samples(s):
Field/Trip Blanks: EB20201209, FB20201209
Field Duplicate pair: DUP20201209 and MW-P3

The above-listed water samples were collected on December 9, 2020 and were analyzed for metals by SW-846 methods 6020B/7470A. The data validation was performed in accordance with the USEPA Region 2 *Standard Operating Procedure for the Evaluation of Metals for the Contract Laboratory Program,* SOP HW-3b/c, Revision 1 (September 2016) and the USEPA *Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review,* EPA 540-R-2017-001 (January 2017), modified as necessary to accommodate the non-CLP methodologies used.

The inorganic data were evaluated based on the following parameters:

- Overall Evaluation of Data and Potential Usability Issues
- Data Completeness
- Holding Times and Sample Preservation
- Inductively Coupled Plasma Mass Spectrometry (ICP-MS) Tune
- Instrument Calibration
- Contract Required Quantitation Limit (CRQL) Standard Recoveries
- Blank Analysis Results
- Inductively Coupled Plasma (ICP) Interference Check Sample (ICS) Results
- Matrix Spike (MS) Results
- Laboratory Duplicate Results
- Field Duplicate Results
- Laboratory Control Sample (LCS) Results
- Serial Dilution Results
- Internal Standards
- Detection Limits Results
- Sample Quantitation Results

Overall Evaluation of Data and Potential Usability Issues

All results are usable as reported or usable with minor qualification due to laboratory quality control outliers.

The validation findings were based on the following information.

Data Completeness

The data package was complete as defined under the requirements for the NYSDEC ASP category B laboratory deliverables.

Holding Times and Sample Preservation

All criteria were met.

ICP-MS Tune

All criteria were met.

Instrument Calibration

All criteria were met.

CRQL Standard Recoveries

All criteria were met.

Blank Results

Contamination was not detected in the laboratory blank samples.

No positive results were found in the field blank sample FB20201209 for metals analyses.

Contamination was detected in the equipment blank sample EB20201209 for the metals analyses. The following table summarizes the contamination greater than the reporting limit and validation actions taken.

Blank ID	Analyte	Level Detected	Action Level	Associated Samples
EB20201209	Aluminum	38.8 ug/L	RL	DUP20201209
	Calcium	32.5 ug/L	RL	MW-P3
	Iron	52.7 ug/L	RL	MW-P4
	Nickel	0.47 ug/L	RL	
	Sodium	161 ug/L	RL	

Blank Actions for analytes detected above the reporting limit (RL).
If the sample result is < RL and < action level; report the result as nondetect (U) at the RL.
If the sample result is > RL and < action level; report the result as nondetect (U) at the reported value.
If the sample result is > action level or nondetect, no action is required.

Qualified sample results are listed in the table below.

Sample	Analyte	Reported Level	Validation Action
DUP20201209	Nickel	1.1 ug/L	4.0U ug/L
MW-P3	Nickel	0.96 ug/L	4.0U ug/L
MW-P4	Iron	85.4 ug/L	120U ug/L
	Nickel	0.88 ug/L	4.0U ug/L

These results can be used for project objectives as nondetect (U) values which may have a minor impact on the data usability.

ICP ICS Results

Analytes were within control limits in the ICSA and ICSAB analyses.

MS Results

MS analyses were performed on sample MW-P3 for metals analyses. For MW-P3MS, no data were qualified for calcium, magnesium, and sodium percent recoveries (%R) outside the QC limits since the parent sample results were greater than 4X the spike concentration.

Laboratory Duplicate Results

Laboratory duplicates were performed on sample MW-P3 for metals analyses. All criteria were met.

Field Duplicate Results

Samples DUP20201209 and MW-P3 were submitted as the field duplicate pair with this sample group. The following table summarizes the concentrations.

Analyte	Concentration (ug/L)		RPD
	DUP20201209	MW-P3	
Aluminum	65.5	52.6	22
Barium	101	94.9	6
Calcium	103000	97500	5
Chromium	7.0	6.8	3
Cobalt	0.98	0.98	0
Iron	144	129	11
Magnesium	34900	33800	3
Manganese	37.3	36.8	1
Nickel	1.1	0.96	14
Potassium	3550	3380	5
Selenium	2.7	2.5	8
Sodium	129000	119000	8
Vanadium	1.2	1.2	0

LCS Results

All criteria were met.

Serial Dilution Results

A serial dilution analysis was performed on sample MW-P3 for metals analyses. All criteria were met.

Internal Standards

All criteria were met.

Detection Limits Results

Results were reported which were below the reporting limit (RL) and above the method detection limit (MDL) in the metals analyses. These results were qualified as estimated (J) by the laboratory.

Dilutions were not required for metals analyses.

Sample Quantitation Results

Calculations were spot-checked; no discrepancies were noted.

DATA VALIDATION QUALIFIERS

U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.

J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.

R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

LDC #: 50106A4a
SDG #: 460-224520-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Category B

Date: 1/13/21
Page: 1 of 1
Reviewer: ATL
2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/7470A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	
VI.	Field Blanks	SW	EB=1, FB=2
VII.	Matrix Spike/Matrix Spike Duplicates	A	6 : Ca, Mg, Na > 4X
VIII.	Duplicate sample analysis	A	7
IX.	Serial Dilution	A	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	SW	(3,4)
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	A	MDL < samples < RL : Jdet/A
XIV	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	EB20201209	460-224520-1	Water	12/09/20
2	FB20201209	460-224520-2	Water	12/09/20
3	DUP20201209	460-224520-3	Water	12/09/20
4	MW-P3	460-224520-4	Water	12/09/20
5	MW-P4	460-224520-5	Water	12/09/20
6	MW-P3MS	460-224520-4MS	Water	12/09/20
7	MW-P3DUP	460-224520-4DUP	Water	12/09/20
8				
9				
10				
11				
12				
13				

Notes:

Method: Metals (EPA SW 846 Method 6010/6020/7000)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. ICP/MS Tune				
Were all isotopes in the tuning solution mass resolution within 0.1 amu?	✓			
Were %RSD of isotopes in the tuning solution ≤5%?	✓			
III. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury) QC limits?	✓			
Were the low standard checks within 70-130%	✓			
Were all initial calibration correlation coefficients within limits as specified by the method?	✓			
IV. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
V. ICP Interference Check Sample				
Were ICP interference check samples performed daily?	✓			
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?	✓			
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.	✓			
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of +/- RL(+/-2X RL for soil) was used for samples that were ≤ 5X the RL, including when only one of the duplicate sample values were ≤ 5X the RL.	✓			
VII. Laboratory control samples				
Was an LCS anaylzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils?	✓			

Validation Area	Yes	No	NA	Findings/Comments
VIII. Internal Standards (EPA SW 846 Method 6020/EPA 200.8)				
Were all the percent recoveries (%R) within the 30-120% (6020)/60-125% (200.8) of the intensity of the internal standard in the associated initial calibration?	✓			
If the %Rs were outside the criteria, was a reanalysis performed?		✓		
IX. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the MDL (ICP)/>100X the MDL(ICP/MS)?	✓			
Were all percent differences (%Ds) < 10%?	✓			
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.		✓		
X. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XI. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XII. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target analytes were detected in the field duplicates.	✓			
XIII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target analytes were detected in the field blanks.	✓			

LDC #: 50106A4a

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: ATL

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-25	W	(Al) (Sb) (As) (Ba) (Be) (Cd) (Ca) (Cr) (Co) (Cu) (Fe) (Pb) (Mg) (Mn) (Hg) (Ni) (K) (Se) (Ag) (Na) (Tl) (V) (Zn), Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
QC		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
6,7	W	(Al) (Sb) (As) (Ba) (Be) (Cd) (Ca) (Cr) (Co) (Cu) (Fe) (Pb) (Mg) (Mn) Hg, (Ni) (K) (Se) (Ag) (Na) (Tl) (V) (Zn), Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___

Comments: Mercury by CVAA if performed

LDC #: 50106A4a

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: ATL

METHOD: Trace Metals (EPA SW846 6010B/7000)

Blank units: ug/L **Associated sample units:** ug/L
Sampling date: 12/09/20 Soil factor applied _____
Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: 3,4,5

Analyte	Blank ID	Sample Identification										
	1	Action Limit	3	4	5							
Al	38.8											
Ca	32.5											
Fe	52.7				85.4/120							
Ni	0.47		1.1/4.0	0.96/4.0	0.88/4.0							
Na	161											

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC#: 50106A4a

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: ATL

METHOD: Metals (EPA Method 6010/6020/7000/200.7/200.8)

Analyte	Concentration (ug/L)		RPD	
	3	4		
Aluminum	65.5	52.6	22	
Barium	101	94.9	6	
Calcium	103000	97500	5	
Chromium	7.0	6.8	3	
Cobalt	0.98	0.98	0	
Iron	144	129	11	
Magnesium	34900	33800	3	
Manganese	37.3	36.8	1	
Nickel	1.1	0.96	14	
Potassium	3550	3380	5	
Selenium	2.7	2.5	8	
Sodium	129000	119000	8	
Vanadium	1.2	1.2	0	

LDC #: 50106A4a

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Reviewer: ATV

METHOD: Trace metals (EPA SW 846 Method 6010/6020/7000)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

$\%R = \frac{Found}{True} \times 100$ Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated %R	Reported %R	Acceptable (Y/N)
	ICP (Low Level calibration)						
CRI	ICP/MS (Low Level calibration)	Ni	4.165	4.00	104	104	Y
	ICP (Initial calibration)						
ICV	ICP/MS (Initial calibration)	Cr	81.104	80.00	101	101	Y
ICV	CVAA (Initial calibration)	Hg	5.0146	5.00	100	100	Y
	ICP (Continuing calibration)						
CCV	ICP/MS (Continuing calibration) 12/11 @ 20:21	Mg	26610.388	25000	106	106	Y
CCV	CVAA (Continuing calibration) 12/11 @ 14:18	Hg	4.8580	5.00	97	97	Y

ICP-MS TUNE	Calculation	Mass	Actual (Mean Counts / Axis)	Required (Counts / Axis)	Recalculated %RSD	Acceptable (Y/N)
	Mass Axis	25	24.95	± 0.1 AMU	NA	Y
	%RSD	207	17730	≤ 5% RSD	0.966	Y

Comments:

LDC #: 50106A4a

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Reviewer: ATL

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$\%R = \frac{Found}{True} \times 100$ Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$ Where, S = Original sample concentration
D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$\%D = \frac{|I-SDR|}{I} \times 100$ Where, I = Initial Sample Result (mg/L)
SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	µg/L Found / S / I (units)	µg/L True / D / SDR (units)	Recalculated %R / RPD / %D	Reported %R / RPD / %D	Acceptable (Y/N)
ICSAB	ICP interference check	Zn	181.439	200.00	91	91	Y
LCS	Laboratory control sample	Hg	1.0566	1.00	106	106	Y
6	Matrix spike	Sb	(SSR-SR) 27.043	25.00	108	108	Y
7	Duplicate	Mn	38.024	36.770	3	3	Y
4	Post digestion spike	Cd	26.797	25.00	107	107	Y
4	ICP serial dilution	Ca	101629.71	97506.469	4.2	4.2	Y

Comments: _____

LDC #: 50106A4a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: ATL

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Have results been reported and calculated correctly?
(Y) N N/A Are results within the calibrated range of the instruments and within the linear range of the ICP?
(Y) N N/A Are all detection limits below the CRDL?

Detected analyte results for Ba were recalculated and verified using the following equation:

Concentration = $\frac{(RD)(FV)(Dil)}{(In.\ Vol.)}$

Recalculation: #3

100.582 ≈ 101

RD = Raw data concentration
FV = Final volume (ml)
In. Vol. = Initial volume (ml) or weight (G)
Dil = Dilution factor

#	Sample ID	Analyte	Reported Concentration (µg/L)	Calculated Concentration (µg/L)	Acceptable (Y/N)
	1	Fe	52.7	52.744	Y
	2	Ag (all ND)	ND	ND	↓
	3	Ba	101	100.582	
	4	Se	2.5	2.515	
	5	Na	126000	125907.524	
	1→5	Hg	ND	ND	

Note: _____

Long Island City, 30th Street - LDC# 50106

SDG: 4602245201

Analytical Method 8270E

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EB20201209-20201209	460-224520-1	DI-N-BUTYL PHTHALATE	12/12/2020		Y	N	U		U	10	0.84	ug/l
EB20201209-20201209	460-224520-1	ATRAZINE	12/12/2020		Y	N	UT		U	10	1.3	ug/l
EB20201209-20201209	460-224520-1	BENZO(B)FLUORANTHENE	12/12/2020		Y	N	U		U	2.0	0.68	ug/l
EB20201209-20201209	460-224520-1	BENZO(K)FLUORANTHENE	12/12/2020		Y	N	U		U	1.0	0.67	ug/l
EB20201209-20201209	460-224520-1	BENZYL BUTYL PHTHALATE	12/12/2020		Y	N	U		U	10	0.85	ug/l
EB20201209-20201209	460-224520-1	BIPHENYL (DIPHENYL)	12/12/2020		Y	N	U		U	10	1.2	ug/l
EB20201209-20201209	460-224520-1	DIBENZ(A,H)ANTHRACENE	12/12/2020		Y	N	U	UJ	UJ	1.0	0.72	ug/l
EB20201209-20201209	460-224520-1	BIS(2-CHLOROETHOXY) METHANE	12/12/2020		Y	N	U		U	10	0.59	ug/l
EB20201209-20201209	460-224520-1	BIS(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	12/12/2020		Y	N	U		U	1.0	0.63	ug/l
EB20201209-20201209	460-224520-1	BIS(2-CHLOROISOPROPYL) ETHER	12/12/2020		Y	N	U		U	10	0.63	ug/l
EB20201209-20201209	460-224520-1	BIS(2-ETHYLHEXYL) PHTHALATE	12/12/2020		Y	N	U		U	10	0.80	ug/l
EB20201209-20201209	460-224520-1	CARBAZOLE	12/12/2020		Y	N	U		U	10	0.68	ug/l
EB20201209-20201209	460-224520-1	DIBENZOFURAN	12/12/2020		Y	N	U		U	10	1.1	ug/l
EB20201209-20201209	460-224520-1	ANTHRACENE	12/12/2020		Y	N	U		U	10	1.3	ug/l
EB20201209-20201209	460-224520-1	DIMETHYL PHTHALATE	12/12/2020		Y	N	U		U	10	0.77	ug/l
EB20201209-20201209	460-224520-1	ACETOPHENONE	12/12/2020		Y	N	U		U	10	2.3	ug/l
EB20201209-20201209	460-224520-1	DI-N-OCTYLPHTHALATE	12/12/2020		Y	N	U		U	10	0.75	ug/l
EB20201209-20201209	460-224520-1	FLUORANTHENE	12/12/2020		Y	N	U		U	10	0.84	ug/l
EB20201209-20201209	460-224520-1	FLUORENE	12/12/2020		Y	N	U		U	10	0.91	ug/l
EB20201209-20201209	460-224520-1	HEXACHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.40	ug/l
EB20201209-20201209	460-224520-1	HEXACHLOROBUTADIENE	12/12/2020		Y	N	U		U	2.0	0.78	ug/l
EB20201209-20201209	460-224520-1	HEXACHLOROCYCLOPENTADIENE	12/12/2020		Y	N	U		U	10	3.6	ug/l
EB20201209-20201209	460-224520-1	HEXACHLOROETHANE	12/12/2020		Y	N	U		U	2.0	0.80	ug/l

SDG: 4602245201

Analytical Method 8270E

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EB20201209-20201209	460-224520-1	BENZO(A)PYRENE	12/12/2020		Y	N	UT	UJ	UJ	1.0	0.41	ug/l
EB20201209-20201209	460-224520-1	ISOPHORONE	12/12/2020		Y	N	U		U	10	0.80	ug/l
EB20201209-20201209	460-224520-1	NAPHTHALENE	12/12/2020		Y	N	U		U	2.0	0.54	ug/l
EB20201209-20201209	460-224520-1	NITROBENZENE	12/12/2020		Y	N	U		U	1.0	0.57	ug/l
EB20201209-20201209	460-224520-1	BENZO(G,H,I)PERYLENE	12/12/2020		Y	N	U	UJ	UJ	10	0.70	ug/l
EB20201209-20201209	460-224520-1	CAPROLACTAM	12/12/2020		Y	N	UT		U	10	2.2	ug/l
EB20201209-20201209	460-224520-1	DIETHYL PHTHALATE	12/12/2020		Y	N	U		U	10	0.98	ug/l
EB20201209-20201209	460-224520-1	2-NITROANILINE	12/12/2020		Y	N	U		U	20	0.47	ug/l
EB20201209-20201209	460-224520-1	1,2,4,5-TETRACHLOROBENZENE	12/12/2020		Y	N	U		U	10	1.2	ug/l
EB20201209-20201209	460-224520-1	2,3,4,6-TETRACHLOROPHENOL	12/12/2020		Y	N	U		U	10	0.75	ug/l
EB20201209-20201209	460-224520-1	2,4,5-TRICHLOROPHENOL	12/12/2020		Y	N	U		U	10	0.88	ug/l
EB20201209-20201209	460-224520-1	2,4,6-TRICHLOROPHENOL	12/12/2020		Y	N	U		U	10	0.86	ug/l
EB20201209-20201209	460-224520-1	2,4-DICHLOROPHENOL	12/12/2020		Y	N	U		U	10	1.1	ug/l
EB20201209-20201209	460-224520-1	2,4-DIMETHYLPHENOL	12/12/2020		Y	N	U		U	10	0.62	ug/l
EB20201209-20201209	460-224520-1	2,4-DINITROPHENOL	12/12/2020		Y	N	U		U	30	2.6	ug/l
EB20201209-20201209	460-224520-1	2,4-DINITROTOLUENE	12/12/2020		Y	N	U		U	2.0	1.0	ug/l
EB20201209-20201209	460-224520-1	2,6-DINITROTOLUENE	12/12/2020		Y	N	U		U	2.0	0.83	ug/l
EB20201209-20201209	460-224520-1	2-CHLORONAPHTHALENE	12/12/2020		Y	N	U		U	10	1.2	ug/l
EB20201209-20201209	460-224520-1	2-CHLOROPHENOL	12/12/2020		Y	N	U		U	10	0.38	ug/l
EB20201209-20201209	460-224520-1	2-Methylnaphthalene	12/12/2020		Y	N	U		U	10	0.53	ug/l
EB20201209-20201209	460-224520-1	BENZO(A)ANTHRACENE	12/12/2020		Y	N	U		U	1.0	0.59	ug/l
EB20201209-20201209	460-224520-1	2-Methylphenol (O-Cresol)	12/12/2020		Y	N	U		U	10	0.67	ug/l
EB20201209-20201209	460-224520-1	CHRYSENE	12/12/2020		Y	N	U		U	10	0.91	ug/l
EB20201209-20201209	460-224520-1	2-NITROPHENOL	12/12/2020		Y	N	U		U	10	0.75	ug/l
EB20201209-20201209	460-224520-1	3,3'-DICHLOROBENZIDINE	12/12/2020		Y	N	U		U	20	1.4	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EB20201209-20201209	460-224520-1	3-NITROANILINE	12/12/2020		Y	N	U		U	20	1.9	ug/l
EB20201209-20201209	460-224520-1	4,6-DINITRO-2-METHYLPHENOL	12/12/2020		Y	N	U		U	30	3.0	ug/l
EB20201209-20201209	460-224520-1	4-BROMOPHENYL PHENYL ETHER	12/12/2020		Y	N	U		U	10	0.75	ug/l
EB20201209-20201209	460-224520-1	4-CHLORO-3-METHYLPHENOL	12/12/2020		Y	N	U		U	10	0.58	ug/l
EB20201209-20201209	460-224520-1	4-CHLOROANILINE	12/12/2020		Y	N	U		U	1.0	1.9	ug/l
EB20201209-20201209	460-224520-1	4-CHLOROPHENYL PHENYL ETHER	12/12/2020		Y	N	U		U	10	1.3	ug/l
EB20201209-20201209	460-224520-1	4-METHYLPHENOL (P-CRESOL)	12/12/2020		Y	N	U		U	10	0.65	ug/l
EB20201209-20201209	460-224520-1	4-NITROANILINE	12/12/2020		Y	N	U		U	20	1.2	ug/l
EB20201209-20201209	460-224520-1	4-NITROPHENOL	12/12/2020		Y	N	U		U	30	4.0	ug/l
EB20201209-20201209	460-224520-1	ACENAPHTHENE	12/12/2020		Y	N	U		U	10	1.1	ug/l
EB20201209-20201209	460-224520-1	ACENAPHTHYLENE	12/12/2020		Y	N	U		U	10	0.82	ug/l
EB20201209-20201209	460-224520-1	INDENO(1,2,3-C,D)PYRENE	12/12/2020		Y	N	U	UJ	UJ	2.0	0.94	ug/l
EB20201209-20201209	460-224520-1	PHENANTHRENE	12/12/2020		Y	N	U		U	10	1.3	ug/l
EB20201209-20201209	460-224520-1	PYRENE	12/12/2020		Y	N	U		U	10	1.6	ug/l
EB20201209-20201209	460-224520-1	PHENOL	12/12/2020		Y	N	U		U	10	0.29	ug/l
EB20201209-20201209	460-224520-1	PENTACHLOROPHENOL	12/12/2020		Y	N	U		U	30	1.4	ug/l
EB20201209-20201209	460-224520-1	N-NITROSODIPHENYLAMINE	12/12/2020		Y	N	U		U	10	0.89	ug/l
EB20201209-20201209	460-224520-1	N-NITROSODI-N-PROPYLAMINE	12/12/2020		Y	N	U		U	1.0	0.43	ug/l
EB20201209-20201209	460-224520-1	BENZALDEHYDE	12/12/2020		Y	N	UT	UJ	UJ	10	2.1	ug/l
FB20201209-20201209	460-224520-2	HEXACHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.40	ug/l
FB20201209-20201209	460-224520-2	PYRENE	12/12/2020		Y	N	U		U	10	1.6	ug/l
FB20201209-20201209	460-224520-2	NAPHTHALENE	12/12/2020		Y	N	U		U	2.0	0.54	ug/l
FB20201209-20201209	460-224520-2	ISOPHORONE	12/12/2020		Y	N	U		U	10	0.80	ug/l
FB20201209-20201209	460-224520-2	BENZO(G,H,I)PERYLENE	12/12/2020		Y	N	U	UJ	UJ	10	0.70	ug/l
FB20201209-20201209	460-224520-2	HEXACHLOROETHANE	12/12/2020		Y	N	U		U	2.0	0.80	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
FB20201209-20201209	460-224520-2	N-NITROSODI-N-PROPYLAMINE	12/12/2020		Y	N	U		U	1.0	0.43	ug/l
FB20201209-20201209	460-224520-2	HEXACHLOROBUTADIENE	12/12/2020		Y	N	U		U	2.0	0.78	ug/l
FB20201209-20201209	460-224520-2	N-NITROSODIPHENYLAMINE	12/12/2020		Y	N	U		U	10	0.89	ug/l
FB20201209-20201209	460-224520-2	FLUORENE	12/12/2020		Y	N	U		U	10	0.91	ug/l
FB20201209-20201209	460-224520-2	FLUORANTHENE	12/12/2020		Y	N	U		U	10	0.84	ug/l
FB20201209-20201209	460-224520-2	DI-N-OCTYLPHTHALATE	12/12/2020		Y	N	U		U	10	0.75	ug/l
FB20201209-20201209	460-224520-2	DI-N-BUTYL PHTHALATE	12/12/2020		Y	N	U		U	10	0.84	ug/l
FB20201209-20201209	460-224520-2	DIMETHYL PHTHALATE	12/12/2020		Y	N	U		U	10	0.77	ug/l
FB20201209-20201209	460-224520-2	4,6-DINITRO-2-METHYLPHENOL	12/12/2020		Y	N	U		U	30	3.0	ug/l
FB20201209-20201209	460-224520-2	HEXACHLOROCYCLOPENTADIENE	12/12/2020		Y	N	U		U	10	3.6	ug/l
FB20201209-20201209	460-224520-2	1,2,4,5-TETRACHLOROBENZENE	12/12/2020		Y	N	U		U	10	1.2	ug/l
FB20201209-20201209	460-224520-2	4-NITROANILINE	12/12/2020		Y	N	U		U	20	1.2	ug/l
FB20201209-20201209	460-224520-2	4-NITROPHENOL	12/12/2020		Y	N	U		U	30	4.0	ug/l
FB20201209-20201209	460-224520-2	DIBENZ(A,H)ANTHRACENE	12/12/2020		Y	N	U	UJ	UJ	1.0	0.72	ug/l
FB20201209-20201209	460-224520-2	INDENO(1,2,3-C,D)PYRENE	12/12/2020		Y	N	U	UJ	UJ	2.0	0.94	ug/l
FB20201209-20201209	460-224520-2	ATRAZINE	12/12/2020		Y	N	UT		U	10	1.3	ug/l
FB20201209-20201209	460-224520-2	NITROBENZENE	12/12/2020		Y	N	U		U	1.0	0.57	ug/l
FB20201209-20201209	460-224520-2	4-CHLOROPHENYL PHENYL ETHER	12/12/2020		Y	N	U		U	10	1.3	ug/l
FB20201209-20201209	460-224520-2	4-METHYLPHENOL (P-CRESOL)	12/12/2020		Y	N	U		U	10	0.65	ug/l
FB20201209-20201209	460-224520-2	4-CHLOROANILINE	12/12/2020		Y	N	U		U	1.0	1.9	ug/l
FB20201209-20201209	460-224520-2	4-CHLORO-3-METHYLPHENOL	12/12/2020		Y	N	U		U	10	0.58	ug/l
FB20201209-20201209	460-224520-2	PENTACHLOROPHENOL	12/12/2020		Y	N	U		U	30	1.4	ug/l
FB20201209-20201209	460-224520-2	4-BROMOPHENYL PHENYL ETHER	12/12/2020		Y	N	U		U	10	0.75	ug/l
FB20201209-20201209	460-224520-2	DIETHYL PHTHALATE	12/12/2020		Y	N	U		U	10	0.98	ug/l
FB20201209-20201209	460-224520-2	PHENANTHRENE	12/12/2020		Y	N	U		U	10	1.3	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
FB20201209-20201209	460-224520-2	CAPROLACTAM	12/12/2020		Y	N	UT		U	10	2.2	ug/l
FB20201209-20201209	460-224520-2	2,6-DINITROTOLUENE	12/12/2020		Y	N	U		U	2.0	0.83	ug/l
FB20201209-20201209	460-224520-2	2,4-DICHLOROPHENOL	12/12/2020		Y	N	U		U	10	1.1	ug/l
FB20201209-20201209	460-224520-2	ACETOPHENONE	12/12/2020		Y	N	U		U	10	2.3	ug/l
FB20201209-20201209	460-224520-2	ACENAPHTHYLENE	12/12/2020		Y	N	U		U	10	0.82	ug/l
FB20201209-20201209	460-224520-2	3-NITROANILINE	12/12/2020		Y	N	U		U	20	1.9	ug/l
FB20201209-20201209	460-224520-2	2-Methylnaphthalene	12/12/2020		Y	N	U		U	10	0.53	ug/l
FB20201209-20201209	460-224520-2	2,4-DIMETHYLPHENOL	12/12/2020		Y	N	U		U	10	0.62	ug/l
FB20201209-20201209	460-224520-2	ANTHRACENE	12/12/2020		Y	N	U		U	10	1.3	ug/l
FB20201209-20201209	460-224520-2	2,4-DINITROTOLUENE	12/12/2020		Y	N	U		U	2.0	1.0	ug/l
FB20201209-20201209	460-224520-2	ACENAPHTHENE	12/12/2020		Y	N	U		U	10	1.1	ug/l
FB20201209-20201209	460-224520-2	2-CHLORONAPHTHALENE	12/12/2020		Y	N	U		U	10	1.2	ug/l
FB20201209-20201209	460-224520-2	2-CHLOROPHENOL	12/12/2020		Y	N	U		U	10	0.38	ug/l
FB20201209-20201209	460-224520-2	DIBENZOFURAN	12/12/2020		Y	N	U		U	10	1.1	ug/l
FB20201209-20201209	460-224520-2	PHENOL	12/12/2020		Y	N	U		U	10	0.29	ug/l
FB20201209-20201209	460-224520-2	2-NITROPHENOL	12/12/2020		Y	N	U		U	10	0.75	ug/l
FB20201209-20201209	460-224520-2	2-NITROANILINE	12/12/2020		Y	N	U		U	20	0.47	ug/l
FB20201209-20201209	460-224520-2	2-Methylphenol (O-Cresol)	12/12/2020		Y	N	U		U	10	0.67	ug/l
FB20201209-20201209	460-224520-2	2,4-DINITROPHENOL	12/12/2020		Y	N	U		U	30	2.6	ug/l
FB20201209-20201209	460-224520-2	BENZYL BUTYL PHTHALATE	12/12/2020		Y	N	U		U	10	0.85	ug/l
FB20201209-20201209	460-224520-2	BIS(2-ETHYLHEXYL) PHTHALATE	12/12/2020		Y	N	U		U	10	0.80	ug/l
FB20201209-20201209	460-224520-2	CARBAZOLE	12/12/2020		Y	N	U		U	10	0.68	ug/l
FB20201209-20201209	460-224520-2	BIS(2-CHLOROISOPROPYL) ETHER	12/12/2020		Y	N	U		U	10	0.63	ug/l
FB20201209-20201209	460-224520-2	BIS(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	12/12/2020		Y	N	U		U	1.0	0.63	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
FB20201209-20201209	460-224520-2	3,3'-DICHLOROBENZIDINE	12/12/2020		Y	N	U		U	20	1.4	ug/l
FB20201209-20201209	460-224520-2	2,4,6-TRICHLOROPHENOL	12/12/2020		Y	N	U		U	10	0.86	ug/l
FB20201209-20201209	460-224520-2	CHRYSENE	12/12/2020		Y	N	U		U	10	0.91	ug/l
FB20201209-20201209	460-224520-2	BIPHENYL (DIPHENYL)	12/12/2020		Y	N	U		U	10	1.2	ug/l
FB20201209-20201209	460-224520-2	BENZO(K)FLUORANTHENE	12/12/2020		Y	N	U		U	1.0	0.67	ug/l
FB20201209-20201209	460-224520-2	BENZO(B)FLUORANTHENE	12/12/2020		Y	N	U		U	2.0	0.68	ug/l
FB20201209-20201209	460-224520-2	BENZO(A)PYRENE	12/12/2020		Y	N	UT	UJ	UJ	1.0	0.41	ug/l
FB20201209-20201209	460-224520-2	BENZO(A)ANTHRACENE	12/12/2020		Y	N	U		U	1.0	0.59	ug/l
FB20201209-20201209	460-224520-2	2,3,4,6-TETRACHLOROPHENOL	12/12/2020		Y	N	U		U	10	0.75	ug/l
FB20201209-20201209	460-224520-2	2,4,5-TRICHLOROPHENOL	12/12/2020		Y	N	U		U	10	0.88	ug/l
FB20201209-20201209	460-224520-2	BENZALDEHYDE	12/12/2020		Y	N	UT	UJ	UJ	10	2.1	ug/l
FB20201209-20201209	460-224520-2	BIS(2-CHLOROETHOXY) METHANE	12/12/2020		Y	N	U		U	10	0.59	ug/l
DUP20201209-20201209	460-224520-3	ANTHRACENE	12/13/2020		Y	N	U		U	10	1.3	ug/l
DUP20201209-20201209	460-224520-3	BIS(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	12/13/2020		Y	N	U		U	1.0	0.63	ug/l
DUP20201209-20201209	460-224520-3	ACENAPHTHENE	12/13/2020		Y	N	U		U	10	1.1	ug/l
DUP20201209-20201209	460-224520-3	BIS(2-CHLOROETHOXY) METHANE	12/13/2020		Y	N	U		U	10	0.59	ug/l
DUP20201209-20201209	460-224520-3	BIS(2-CHLOROISOPROPYL) ETHER	12/13/2020		Y	N	U		U	10	0.63	ug/l
DUP20201209-20201209	460-224520-3	BIPHENYL (DIPHENYL)	12/13/2020		Y	N	U		U	10	1.2	ug/l
DUP20201209-20201209	460-224520-3	BENZYL BUTYL PHTHALATE	12/13/2020		Y	N	U		U	10	0.85	ug/l
DUP20201209-20201209	460-224520-3	BENZO(K)FLUORANTHENE	12/13/2020		Y	N	U		U	1.0	0.67	ug/l
DUP20201209-20201209	460-224520-3	BENZALDEHYDE	12/13/2020		Y	N	UT	UJ	UJ	10	2.1	ug/l
DUP20201209-20201209	460-224520-3	BENZO(A)ANTHRACENE	12/13/2020		Y	N	U		U	1.0	0.59	ug/l
DUP20201209-20201209	460-224520-3	ACETOPHENONE	12/13/2020		Y	N	U		U	10	2.3	ug/l
DUP20201209-20201209	460-224520-3	ACENAPHTHYLENE	12/13/2020		Y	N	U		U	10	0.82	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
DUP20201209-20201209	460-224520-3	DI-N-OCTYLPHTHALATE	12/13/2020		Y	N	U		U	10	0.75	ug/l
DUP20201209-20201209	460-224520-3	BENZO(B)FLUORANTHENE	12/13/2020		Y	N	U		U	2.0	0.68	ug/l
DUP20201209-20201209	460-224520-3	HEXACHLOROBUTADIENE	12/13/2020		Y	N	U		U	2.0	0.78	ug/l
DUP20201209-20201209	460-224520-3	NITROBENZENE	12/13/2020		Y	N	U		U	1.0	0.57	ug/l
DUP20201209-20201209	460-224520-3	NAPHTHALENE	12/13/2020		Y	N	U		U	2.0	0.54	ug/l
DUP20201209-20201209	460-224520-3	ISOPHORONE	12/13/2020		Y	N	U		U	10	0.80	ug/l
DUP20201209-20201209	460-224520-3	4-BROMOPHENYL PHENYL ETHER	12/13/2020		Y	N	U		U	10	0.75	ug/l
DUP20201209-20201209	460-224520-3	4-NITROPHENOL	12/13/2020		Y	N	U		U	30	4.0	ug/l
DUP20201209-20201209	460-224520-3	N-NITROSODI-N-PROPYLAMINE	12/13/2020		Y	N	U		U	1.0	0.43	ug/l
DUP20201209-20201209	460-224520-3	N-NITROSODIPHENYLAMINE	12/13/2020		Y	N	U		U	10	0.89	ug/l
DUP20201209-20201209	460-224520-3	PENTACHLOROPHENOL	12/13/2020		Y	N	U		U	30	1.4	ug/l
DUP20201209-20201209	460-224520-3	PHENANTHRENE	12/13/2020		Y	N	U		U	10	1.3	ug/l
DUP20201209-20201209	460-224520-3	PHENOL	12/13/2020		Y	N	U		U	10	0.29	ug/l
DUP20201209-20201209	460-224520-3	DIMETHYL PHTHALATE	12/13/2020		Y	N	U		U	10	0.77	ug/l
DUP20201209-20201209	460-224520-3	HEXACHLOROCYCLOPENTADIENE	12/13/2020		Y	N	U		U	10	3.6	ug/l
DUP20201209-20201209	460-224520-3	BIS(2-ETHYLHEXYL) PHTHALATE	12/13/2020		Y	N	U		U	10	0.80	ug/l
DUP20201209-20201209	460-224520-3	HEXACHLOROBENZENE	12/13/2020		Y	N	U		U	1.0	0.40	ug/l
DUP20201209-20201209	460-224520-3	FLUORENE	12/13/2020		Y	N	U		U	10	0.91	ug/l
DUP20201209-20201209	460-224520-3	FLUORANTHENE	12/13/2020		Y	N	U		U	10	0.84	ug/l
DUP20201209-20201209	460-224520-3	DI-N-BUTYL PHTHALATE	12/13/2020		Y	N	U		U	10	0.84	ug/l
DUP20201209-20201209	460-224520-3	DIETHYL PHTHALATE	12/13/2020		Y	N	U		U	10	0.98	ug/l
DUP20201209-20201209	460-224520-3	DIBENZOFURAN	12/13/2020		Y	N	U		U	10	1.1	ug/l
DUP20201209-20201209	460-224520-3	CHRYSENE	12/13/2020		Y	N	U		U	10	0.91	ug/l
DUP20201209-20201209	460-224520-3	DIBENZ(A,H)ANTHRACENE	12/13/2020		Y	N	U	UJ	UJ	1.0	0.72	ug/l
DUP20201209-20201209	460-224520-3	INDENO(1,2,3-C,D)PYRENE	12/13/2020		Y	N	U	UJ	UJ	2.0	0.94	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
DUP20201209-20201209	460-224520-3	CARBAZOLE	12/13/2020		Y	N	U		U	10	0.68	ug/l
DUP20201209-20201209	460-224520-3	PYRENE	12/13/2020		Y	N	U		U	10	1.6	ug/l
DUP20201209-20201209	460-224520-3	2-Methylnaphthalene	12/13/2020		Y	N	U		U	10	0.53	ug/l
DUP20201209-20201209	460-224520-3	2,4-DICHLOROPHENOL	12/13/2020		Y	N	U		U	10	1.1	ug/l
DUP20201209-20201209	460-224520-3	2,4-DIMETHYLPHENOL	12/13/2020		Y	N	U		U	10	0.62	ug/l
DUP20201209-20201209	460-224520-3	2,4-DINITROPHENOL	12/13/2020		Y	N	U		U	30	2.6	ug/l
DUP20201209-20201209	460-224520-3	4,6-DINITRO-2-METHYLPHENOL	12/13/2020		Y	N	U		U	30	3.0	ug/l
DUP20201209-20201209	460-224520-3	2,4-DINITROTOLUENE	12/13/2020		Y	N	U		U	2.0	1.0	ug/l
DUP20201209-20201209	460-224520-3	2,4,6-TRICHLOROPHENOL	12/13/2020		Y	N	U		U	10	0.86	ug/l
DUP20201209-20201209	460-224520-3	2-CHLORONAPHTHALENE	12/13/2020		Y	N	U		U	10	1.2	ug/l
DUP20201209-20201209	460-224520-3	2-CHLOROPHENOL	12/13/2020		Y	N	U		U	10	0.38	ug/l
DUP20201209-20201209	460-224520-3	2-Methylphenol (O-Cresol)	12/13/2020		Y	N	U		U	10	0.67	ug/l
DUP20201209-20201209	460-224520-3	2-NITROANILINE	12/13/2020		Y	N	U		U	20	0.47	ug/l
DUP20201209-20201209	460-224520-3	2-NITROPHENOL	12/13/2020		Y	N	U		U	10	0.75	ug/l
DUP20201209-20201209	460-224520-3	3,3'-DICHLOROBENZIDINE	12/13/2020		Y	N	U		U	20	1.4	ug/l
DUP20201209-20201209	460-224520-3	3-NITROANILINE	12/13/2020		Y	N	U		U	20	1.9	ug/l
DUP20201209-20201209	460-224520-3	4-NITROANILINE	12/13/2020		Y	N	U		U	20	1.2	ug/l
DUP20201209-20201209	460-224520-3	2,6-DINITROTOLUENE	12/13/2020		Y	N	U		U	2.0	0.83	ug/l
DUP20201209-20201209	460-224520-3	BENZO(A)PYRENE	12/13/2020		Y	N	UT	UJ	UJ	1.0	0.41	ug/l
DUP20201209-20201209	460-224520-3	2,3,4,6-TETRACHLOROPHENOL	12/13/2020		Y	N	U		U	10	0.75	ug/l
DUP20201209-20201209	460-224520-3	CAPROLACTAM	12/13/2020		Y	N	UT		U	10	2.2	ug/l
DUP20201209-20201209	460-224520-3	1,2,4,5-TETRACHLOROBENZENE	12/13/2020		Y	N	U		U	10	1.2	ug/l
DUP20201209-20201209	460-224520-3	BENZO(G,H,I)PERYLENE	12/13/2020		Y	N	U	UJ	UJ	10	0.70	ug/l
DUP20201209-20201209	460-224520-3	HEXACHLOROETHANE	12/13/2020		Y	N	U		U	2.0	0.80	ug/l
DUP20201209-20201209	460-224520-3	4-METHYLPHENOL (P-CRESOL)	12/13/2020		Y	N	U		U	10	0.65	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
DUP20201209-20201209	460-224520-3	4-CHLOROPHENYL PHENYL ETHER	12/13/2020		Y	N	U		U	10	1.3	ug/l
DUP20201209-20201209	460-224520-3	4-CHLORO-3-METHYLPHENOL	12/13/2020		Y	N	U		U	10	0.58	ug/l
DUP20201209-20201209	460-224520-3	ATRAZINE	12/13/2020		Y	N	UT		U	10	1.3	ug/l
DUP20201209-20201209	460-224520-3	4-CHLOROANILINE	12/13/2020		Y	N	U		U	1.0	1.9	ug/l
DUP20201209-20201209	460-224520-3	2,4,5-TRICHLOROPHENOL	12/13/2020		Y	N	U		U	10	0.88	ug/l
MW-P3-20201209	460-224520-4	BENZO(K)FLUORANTHENE	12/12/2020		Y	N	U		U	1.0	0.67	ug/l
MW-P3-20201209	460-224520-4	BENZO(B)FLUORANTHENE	12/12/2020		Y	N	U		U	2.0	0.68	ug/l
MW-P3-20201209	460-224520-4	BENZO(A)ANTHRACENE	12/12/2020		Y	N	U		U	1.0	0.59	ug/l
MW-P3-20201209	460-224520-4	BENZO(G,H,I)PERYLENE	12/12/2020		Y	N	U	UJ	UJ	10	0.70	ug/l
MW-P3-20201209	460-224520-4	DIBENZOFURAN	12/12/2020		Y	N	U		U	10	1.1	ug/l
MW-P3-20201209	460-224520-4	BENZYL BUTYL PHTHALATE	12/12/2020		Y	N	U		U	10	0.85	ug/l
MW-P3-20201209	460-224520-4	ACETOPHENONE	12/12/2020		Y	N	U		U	10	2.3	ug/l
MW-P3-20201209	460-224520-4	DIETHYL PHTHALATE	12/12/2020		Y	N	U		U	10	0.98	ug/l
MW-P3-20201209	460-224520-4	ACENAPHTHYLENE	12/12/2020		Y	N	U		U	10	0.82	ug/l
MW-P3-20201209	460-224520-4	ANTHRACENE	12/12/2020		Y	N	U		U	10	1.3	ug/l
MW-P3-20201209	460-224520-4	BIPHENYL (DIPHENYL)	12/12/2020		Y	N	U		U	10	1.2	ug/l
MW-P3-20201209	460-224520-4	BIS(2-CHLOROETHOXY) METHANE	12/12/2020		Y	N	U		U	10	0.59	ug/l
MW-P3-20201209	460-224520-4	BIS(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	12/12/2020		Y	N	U		U	1.0	0.63	ug/l
MW-P3-20201209	460-224520-4	CAPROLACTAM	12/12/2020		Y	N	UT		U	10	2.2	ug/l
MW-P3-20201209	460-224520-4	BIS(2-ETHYLHEXYL) PHTHALATE	12/12/2020		Y	N	U		U	10	0.80	ug/l
MW-P3-20201209	460-224520-4	CARBAZOLE	12/12/2020		Y	N	U		U	10	0.68	ug/l
MW-P3-20201209	460-224520-4	CHRYSENE	12/12/2020		Y	N	U		U	10	0.91	ug/l
MW-P3-20201209	460-224520-4	ATRAZINE	12/12/2020		Y	N	UT		U	10	1.3	ug/l
MW-P3-20201209	460-224520-4	ACENAPHTHENE	12/12/2020		Y	N	U		U	10	1.1	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
MW-P3-20201209	460-224520-4	4-CHLOROPHENYL PHENYL ETHER	12/12/2020		Y	N	U		U	10	1.3	ug/l
MW-P3-20201209	460-224520-4	DIBENZ(A,H)ANTHRACENE	12/12/2020		Y	N	U	UJ	UJ	1.0	0.72	ug/l
MW-P3-20201209	460-224520-4	BENZO(A)PYRENE	12/12/2020		Y	N	UT	UJ	UJ	1.0	0.41	ug/l
MW-P3-20201209	460-224520-4	BIS(2-CHLOROISOPROPYL) ETHER	12/12/2020		Y	N	U		U	10	0.63	ug/l
MW-P3-20201209	460-224520-4	HEXACHLOROETHANE	12/12/2020		Y	N	U		U	2.0	0.80	ug/l
MW-P3-20201209	460-224520-4	2,4,6-TRICHLOROPHENOL	12/12/2020		Y	N	U		U	10	0.86	ug/l
MW-P3-20201209	460-224520-4	4-NITROANILINE	12/12/2020		Y	N	U		U	20	1.2	ug/l
MW-P3-20201209	460-224520-4	2,4,5-TRICHLOROPHENOL	12/12/2020		Y	N	U		U	10	0.88	ug/l
MW-P3-20201209	460-224520-4	2,3,4,6-TETRACHLOROPHENOL	12/12/2020		Y	N	U		U	10	0.75	ug/l
MW-P3-20201209	460-224520-4	1,2,4,5-TETRACHLOROBENZENE	12/12/2020		Y	N	U		U	10	1.2	ug/l
MW-P3-20201209	460-224520-4	DI-N-OCTYLPHTHALATE	12/12/2020		Y	N	U		U	10	0.75	ug/l
MW-P3-20201209	460-224520-4	FLUORANTHENE	12/12/2020		Y	N	U		U	10	0.84	ug/l
MW-P3-20201209	460-224520-4	FLUORENE	12/12/2020		Y	N	U		U	10	0.91	ug/l
MW-P3-20201209	460-224520-4	HEXACHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.40	ug/l
MW-P3-20201209	460-224520-4	4-NITROPHENOL	12/12/2020		Y	N	U		U	30	4.0	ug/l
MW-P3-20201209	460-224520-4	HEXACHLOROCYCLOPENTADIENE	12/12/2020		Y	N	U		U	10	3.6	ug/l
MW-P3-20201209	460-224520-4	2,4-DICHLOROPHENOL	12/12/2020		Y	N	U		U	10	1.1	ug/l
MW-P3-20201209	460-224520-4	ISOPHORONE	12/12/2020		Y	N	U		U	10	0.80	ug/l
MW-P3-20201209	460-224520-4	NAPHTHALENE	12/12/2020		Y	N	U		U	2.0	0.54	ug/l
MW-P3-20201209	460-224520-4	NITROBENZENE	12/12/2020		Y	N	U		U	1.0	0.57	ug/l
MW-P3-20201209	460-224520-4	N-NITROSODI-N-PROPYLAMINE	12/12/2020		Y	N	U		U	1.0	0.43	ug/l
MW-P3-20201209	460-224520-4	N-NITROSODIPHENYLAMINE	12/12/2020		Y	N	U		U	10	0.89	ug/l
MW-P3-20201209	460-224520-4	PENTACHLOROPHENOL	12/12/2020		Y	N	U		U	30	1.4	ug/l
MW-P3-20201209	460-224520-4	PHENANTHRENE	12/12/2020		Y	N	U		U	10	1.3	ug/l
MW-P3-20201209	460-224520-4	PHENOL	12/12/2020		Y	N	U		U	10	0.29	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
MW-P3-20201209	460-224520-4	BENZALDEHYDE	12/12/2020		Y	N	UT	UJ	UJ	10	2.1	ug/l
MW-P3-20201209	460-224520-4	HEXACHLOROBUTADIENE	12/12/2020		Y	N	U		U	2.0	0.78	ug/l
MW-P3-20201209	460-224520-4	2-NITROPHENOL	12/12/2020		Y	N	U		U	10	0.75	ug/l
MW-P3-20201209	460-224520-4	PYRENE	12/12/2020		Y	N	U		U	10	1.6	ug/l
MW-P3-20201209	460-224520-4	4-METHYLPHENOL (P-CRESOL)	12/12/2020		Y	N	U		U	10	0.65	ug/l
MW-P3-20201209	460-224520-4	4-CHLOROANILINE	12/12/2020		Y	N	U		U	1.0	1.9	ug/l
MW-P3-20201209	460-224520-4	DIMETHYL PHTHALATE	12/12/2020		Y	N	U		U	10	0.77	ug/l
MW-P3-20201209	460-224520-4	4-CHLORO-3-METHYLPHENOL	12/12/2020		Y	N	U		U	10	0.58	ug/l
MW-P3-20201209	460-224520-4	4-BROMOPHENYL PHENYL ETHER	12/12/2020		Y	N	U		U	10	0.75	ug/l
MW-P3-20201209	460-224520-4	DI-N-BUTYL PHTHALATE	12/12/2020		Y	N	U		U	10	0.84	ug/l
MW-P3-20201209	460-224520-4	4,6-DINITRO-2-METHYLPHENOL	12/12/2020		Y	N	U		U	30	3.0	ug/l
MW-P3-20201209	460-224520-4	3,3'-DICHLOROBENZIDINE	12/12/2020		Y	N	U		U	20	1.4	ug/l
MW-P3-20201209	460-224520-4	2,4-DIMETHYLPHENOL	12/12/2020		Y	N	U		U	10	0.62	ug/l
MW-P3-20201209	460-224520-4	2-NITROANILINE	12/12/2020		Y	N	U		U	20	0.47	ug/l
MW-P3-20201209	460-224520-4	2-Methylphenol (O-Cresol)	12/12/2020		Y	N	U		U	10	0.67	ug/l
MW-P3-20201209	460-224520-4	2-Methylnaphthalene	12/12/2020		Y	N	U		U	10	0.53	ug/l
MW-P3-20201209	460-224520-4	2-CHLOROPHENOL	12/12/2020		Y	N	U		U	10	0.38	ug/l
MW-P3-20201209	460-224520-4	2-CHLORONAPHTHALENE	12/12/2020		Y	N	U		U	10	1.2	ug/l
MW-P3-20201209	460-224520-4	2,6-DINITROTOLUENE	12/12/2020		Y	N	U		U	2.0	0.83	ug/l
MW-P3-20201209	460-224520-4	2,4-DINITROTOLUENE	12/12/2020		Y	N	U		U	2.0	1.0	ug/l
MW-P3-20201209	460-224520-4	INDENO(1,2,3-C,D)PYRENE	12/12/2020		Y	N	U	UJ	UJ	2.0	0.94	ug/l
MW-P3-20201209	460-224520-4	2,4-DINITROPHENOL	12/12/2020		Y	N	U		U	30	2.6	ug/l
MW-P3-20201209	460-224520-4	3-NITROANILINE	12/12/2020		Y	N	U		U	20	1.9	ug/l
MW-P4-20201209	460-224520-5	BENZALDEHYDE	12/13/2020		Y	N	UT	UJ	UJ	10	2.1	ug/l
MW-P4-20201209	460-224520-5	BENZO(G,H,I)PERYLENE	12/13/2020		Y	N	U	UJ	UJ	10	0.70	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
MW-P4-20201209	460-224520-5	2,3,4,6-TETRACHLOROPHENOL	12/13/2020		Y	N	U		U	10	0.75	ug/l
MW-P4-20201209	460-224520-5	1,2,4,5-TETRACHLOROBENZENE	12/13/2020		Y	N	U		U	10	1.2	ug/l
MW-P4-20201209	460-224520-5	4-NITROPHENOL	12/13/2020		Y	N	U		U	30	4.0	ug/l
MW-P4-20201209	460-224520-5	BIS(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	12/13/2020		Y	N	U		U	1.0	0.63	ug/l
MW-P4-20201209	460-224520-5	BIS(2-CHLOROETHOXY) METHANE	12/13/2020		Y	N	U		U	10	0.59	ug/l
MW-P4-20201209	460-224520-5	BIPHENYL (DIPHENYL)	12/13/2020		Y	N	U		U	10	1.2	ug/l
MW-P4-20201209	460-224520-5	BENZYL BUTYL PHTHALATE	12/13/2020		Y	N	U		U	10	0.85	ug/l
MW-P4-20201209	460-224520-5	BENZO(K)FLUORANTHENE	12/13/2020		Y	N	U		U	1.0	0.67	ug/l
MW-P4-20201209	460-224520-5	BENZO(B)FLUORANTHENE	12/13/2020		Y	N	U		U	2.0	0.68	ug/l
MW-P4-20201209	460-224520-5	ATRAZINE	12/13/2020		Y	N	UT		U	10	1.3	ug/l
MW-P4-20201209	460-224520-5	BENZO(A)ANTHRACENE	12/13/2020		Y	N	U		U	1.0	0.59	ug/l
MW-P4-20201209	460-224520-5	ANTHRACENE	12/13/2020		Y	N	U		U	10	1.3	ug/l
MW-P4-20201209	460-224520-5	ACETOPHENONE	12/13/2020		Y	N	U		U	10	2.3	ug/l
MW-P4-20201209	460-224520-5	2-NITROANILINE	12/13/2020		Y	N	U		U	20	0.47	ug/l
MW-P4-20201209	460-224520-5	ACENAPHTHENE	12/13/2020		Y	N	U		U	10	1.1	ug/l
MW-P4-20201209	460-224520-5	CARBAZOLE	12/13/2020		Y	N	U		U	10	0.68	ug/l
MW-P4-20201209	460-224520-5	4-NITROANILINE	12/13/2020		Y	N	U		U	20	1.2	ug/l
MW-P4-20201209	460-224520-5	4-METHYLPHENOL (P-CRESOL)	12/13/2020		Y	N	U		U	10	0.65	ug/l
MW-P4-20201209	460-224520-5	4-CHLOROPHENYL PHENYL ETHER	12/13/2020		Y	N	U		U	10	1.3	ug/l
MW-P4-20201209	460-224520-5	4-CHLOROANILINE	12/13/2020		Y	N	U		U	1.0	1.9	ug/l
MW-P4-20201209	460-224520-5	4-CHLORO-3-METHYLPHENOL	12/13/2020		Y	N	U		U	10	0.58	ug/l
MW-P4-20201209	460-224520-5	4-BROMOPHENYL PHENYL ETHER	12/13/2020		Y	N	U		U	10	0.75	ug/l
MW-P4-20201209	460-224520-5	4,6-DINITRO-2-METHYLPHENOL	12/13/2020		Y	N	U		U	30	3.0	ug/l
MW-P4-20201209	460-224520-5	3-NITROANILINE	12/13/2020		Y	N	U		U	20	1.9	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
MW-P4-20201209	460-224520-5	3,3'-DICHLOROBENZIDINE	12/13/2020		Y	N	U		U	20	1.4	ug/l
MW-P4-20201209	460-224520-5	2-NITROPHENOL	12/13/2020		Y	N	U		U	10	0.75	ug/l
MW-P4-20201209	460-224520-5	ACENAPHTHYLENE	12/13/2020		Y	N	U		U	10	0.82	ug/l
MW-P4-20201209	460-224520-5	HEXACHLOROCYCLOPENTADIENE	12/13/2020		Y	N	U		U	10	3.6	ug/l
MW-P4-20201209	460-224520-5	BENZO(A)PYRENE	12/13/2020		Y	N	UT	UJ	UJ	1.0	0.41	ug/l
MW-P4-20201209	460-224520-5	CAPROLACTAM	12/13/2020		Y	N	UT		U	10	2.2	ug/l
MW-P4-20201209	460-224520-5	INDENO(1,2,3-C,D)PYRENE	12/13/2020		Y	N	U	UJ	UJ	2.0	0.94	ug/l
MW-P4-20201209	460-224520-5	PYRENE	12/13/2020		Y	N	U		U	10	1.6	ug/l
MW-P4-20201209	460-224520-5	PHENOL	12/13/2020		Y	N	U		U	10	0.29	ug/l
MW-P4-20201209	460-224520-5	PHENANTHRENE	12/13/2020		Y	N	U		U	10	1.3	ug/l
MW-P4-20201209	460-224520-5	PENTACHLOROPHENOL	12/13/2020		Y	N	U		U	30	1.4	ug/l
MW-P4-20201209	460-224520-5	DIBENZ(A,H)ANTHRACENE	12/13/2020		Y	N	U	UJ	UJ	1.0	0.72	ug/l
MW-P4-20201209	460-224520-5	N-NITROSODI-N-PROPYLAMINE	12/13/2020		Y	N	U		U	1.0	0.43	ug/l
MW-P4-20201209	460-224520-5	NAPHTHALENE	12/13/2020		Y	N	U		U	2.0	0.54	ug/l
MW-P4-20201209	460-224520-5	BIS(2-CHLOROISOPROPYL) ETHER	12/13/2020		Y	N	U		U	10	0.63	ug/l
MW-P4-20201209	460-224520-5	HEXACHLOROETHANE	12/13/2020		Y	N	U		U	2.0	0.80	ug/l
MW-P4-20201209	460-224520-5	BIS(2-ETHYLHEXYL) PHTHALATE	12/13/2020		Y	N	U		U	10	0.80	ug/l
MW-P4-20201209	460-224520-5	HEXACHLOROBUTADIENE	12/13/2020		Y	N	U		U	2.0	0.78	ug/l
MW-P4-20201209	460-224520-5	HEXACHLOROBENZENE	12/13/2020		Y	N	U		U	1.0	0.40	ug/l
MW-P4-20201209	460-224520-5	FLUORENE	12/13/2020		Y	N	U		U	10	0.91	ug/l
MW-P4-20201209	460-224520-5	FLUORANTHENE	12/13/2020		Y	N	U		U	10	0.84	ug/l
MW-P4-20201209	460-224520-5	DI-N-OCTYLPHTHALATE	12/13/2020		Y	N	U		U	10	0.75	ug/l
MW-P4-20201209	460-224520-5	DI-N-BUTYL PHTHALATE	12/13/2020		Y	N	U		U	10	0.84	ug/l
MW-P4-20201209	460-224520-5	DIMETHYL PHTHALATE	12/13/2020		Y	N	U		U	10	0.77	ug/l
MW-P4-20201209	460-224520-5	DIETHYL PHTHALATE	12/13/2020		Y	N	U		U	10	0.98	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
MW-P4-20201209	460-224520-5	DIBENZOFURAN	12/13/2020		Y	N	U		U	10	1.1	ug/l
MW-P4-20201209	460-224520-5	CHRYSENE	12/13/2020		Y	N	U		U	10	0.91	ug/l
MW-P4-20201209	460-224520-5	NITROBENZENE	12/13/2020		Y	N	U		U	1.0	0.57	ug/l
MW-P4-20201209	460-224520-5	ISOPHORONE	12/13/2020		Y	N	U		U	10	0.80	ug/l
MW-P4-20201209	460-224520-5	2,4,5-TRICHLOROPHENOL	12/13/2020		Y	N	U		U	10	0.88	ug/l
MW-P4-20201209	460-224520-5	2,4,6-TRICHLOROPHENOL	12/13/2020		Y	N	U		U	10	0.86	ug/l
MW-P4-20201209	460-224520-5	2-Methylphenol (O-Cresol)	12/13/2020		Y	N	U		U	10	0.67	ug/l
MW-P4-20201209	460-224520-5	N-NITROSODIPHENYLAMINE	12/13/2020		Y	N	U		U	10	0.89	ug/l
MW-P4-20201209	460-224520-5	2,4-DICHLOROPHENOL	12/13/2020		Y	N	U		U	10	1.1	ug/l
MW-P4-20201209	460-224520-5	2,4-DIMETHYLPHENOL	12/13/2020		Y	N	U		U	10	0.62	ug/l
MW-P4-20201209	460-224520-5	2,4-DINITROPHENOL	12/13/2020		Y	N	U		U	30	2.6	ug/l
MW-P4-20201209	460-224520-5	2,4-DINITROTOLUENE	12/13/2020		Y	N	U		U	2.0	1.0	ug/l
MW-P4-20201209	460-224520-5	2,6-DINITROTOLUENE	12/13/2020		Y	N	U		U	2.0	0.83	ug/l
MW-P4-20201209	460-224520-5	2-CHLORONAPHTHALENE	12/13/2020		Y	N	U		U	10	1.2	ug/l
MW-P4-20201209	460-224520-5	2-CHLOROPHENOL	12/13/2020		Y	N	U		U	10	0.38	ug/l
MW-P4-20201209	460-224520-5	2-Methylnaphthalene	12/13/2020		Y	N	U		U	10	0.53	ug/l

Analytical Method SW6020

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EB20201209-20201209	460-224520-1	CALCIUM	12/11/2020	32.5	Y	Y	J		J	200	22.7	ug/l
EB20201209-20201209	460-224520-1	MAGNESIUM	12/11/2020		Y	N	U		U	200	15.4	ug/l
EB20201209-20201209	460-224520-1	THALLIUM	12/11/2020		Y	N	U		U	0.80	0.17	ug/l
EB20201209-20201209	460-224520-1	SODIUM	12/11/2020	161	Y	Y	J		J	200	58.2	ug/l
EB20201209-20201209	460-224520-1	SILVER	12/11/2020		Y	N	U		U	2.0	0.19	ug/l
EB20201209-20201209	460-224520-1	SELENIUM	12/11/2020		Y	N	U		U	2.5	0.46	ug/l

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Analytical Method SW6020

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EB20201209-20201209	460-224520-1	POTASSIUM	12/11/2020		Y	N	U		U	200	112	ug/l
EB20201209-20201209	460-224520-1	MANGANESE	12/11/2020		Y	N	U		U	8.0	1.1	ug/l
EB20201209-20201209	460-224520-1	ZINC	12/11/2020		Y	N	U		U	16.0	5.1	ug/l
EB20201209-20201209	460-224520-1	IRON	12/11/2020	52.7	Y	Y	J		J	120	8.5	ug/l
EB20201209-20201209	460-224520-1	LEAD	12/11/2020		Y	N	U		U	1.2	0.11	ug/l
EB20201209-20201209	460-224520-1	COPPER	12/11/2020		Y	N	U		U	4.0	2.5	ug/l
EB20201209-20201209	460-224520-1	NICKEL	12/11/2020	0.47	Y	Y	J		J	4.0	0.45	ug/l
EB20201209-20201209	460-224520-1	CHROMIUM, TOTAL	12/11/2020		Y	N	U		U	4.0	0.69	ug/l
EB20201209-20201209	460-224520-1	VANADIUM	12/11/2020		Y	N	U		U	4.0	0.37	ug/l
EB20201209-20201209	460-224520-1	CADMIUM	12/11/2020		Y	N	U		U	2.0	0.16	ug/l
EB20201209-20201209	460-224520-1	BERYLLIUM	12/11/2020		Y	N	U		U	0.80	0.098	ug/l
EB20201209-20201209	460-224520-1	BARIUM	12/11/2020		Y	N	U		U	4.0	0.91	ug/l
EB20201209-20201209	460-224520-1	ARSENIC	12/11/2020		Y	N	U		U	2.0	0.89	ug/l
EB20201209-20201209	460-224520-1	COBALT	12/11/2020		Y	N	U		U	4.0	0.26	ug/l
EB20201209-20201209	460-224520-1	ALUMINUM	12/11/2020	38.8	Y	Y	J		J	40.0	8.0	ug/l
EB20201209-20201209	460-224520-1	ANTIMONY	12/11/2020		Y	N	U		U	2.0	0.76	ug/l
FB20201209-20201209	460-224520-2	POTASSIUM	12/11/2020		Y	N	U		U	200	112	ug/l
FB20201209-20201209	460-224520-2	ALUMINUM	12/11/2020		Y	N	U		U	40.0	8.0	ug/l
FB20201209-20201209	460-224520-2	ZINC	12/11/2020		Y	N	U		U	16.0	5.1	ug/l
FB20201209-20201209	460-224520-2	ANTIMONY	12/11/2020		Y	N	U		U	2.0	0.76	ug/l
FB20201209-20201209	460-224520-2	VANADIUM	12/11/2020		Y	N	U		U	4.0	0.37	ug/l
FB20201209-20201209	460-224520-2	THALLIUM	12/11/2020		Y	N	U		U	0.80	0.17	ug/l
FB20201209-20201209	460-224520-2	SODIUM	12/11/2020		Y	N	U		U	200	58.2	ug/l
FB20201209-20201209	460-224520-2	SELENIUM	12/11/2020		Y	N	U		U	2.5	0.46	ug/l
FB20201209-20201209	460-224520-2	NICKEL	12/11/2020		Y	N	U		U	4.0	0.45	ug/l

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Analytical Method SW6020

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
FB20201209-20201209	460-224520-2	MANGANESE	12/11/2020		Y	N	U		U	8.0	1.1	ug/l
FB20201209-20201209	460-224520-2	CADMIUM	12/11/2020		Y	N	U		U	2.0	0.16	ug/l
FB20201209-20201209	460-224520-2	ARSENIC	12/11/2020		Y	N	U		U	2.0	0.89	ug/l
FB20201209-20201209	460-224520-2	SILVER	12/11/2020		Y	N	U		U	2.0	0.19	ug/l
FB20201209-20201209	460-224520-2	BERYLLIUM	12/11/2020		Y	N	U		U	0.80	0.098	ug/l
FB20201209-20201209	460-224520-2	MAGNESIUM	12/11/2020		Y	N	U		U	200	15.4	ug/l
FB20201209-20201209	460-224520-2	CALCIUM	12/11/2020		Y	N	U		U	200	22.7	ug/l
FB20201209-20201209	460-224520-2	CHROMIUM, TOTAL	12/11/2020		Y	N	U		U	4.0	0.69	ug/l
FB20201209-20201209	460-224520-2	COBALT	12/11/2020		Y	N	U		U	4.0	0.26	ug/l
FB20201209-20201209	460-224520-2	COPPER	12/11/2020		Y	N	U		U	4.0	2.5	ug/l
FB20201209-20201209	460-224520-2	IRON	12/11/2020		Y	N	U		U	120	8.5	ug/l
FB20201209-20201209	460-224520-2	LEAD	12/11/2020		Y	N	U		U	1.2	0.11	ug/l
FB20201209-20201209	460-224520-2	BARIUM	12/11/2020		Y	N	U		U	4.0	0.91	ug/l
DUP20201209-20201209	460-224520-3	POTASSIUM	12/11/2020	3550	Y	Y				200	112	ug/l
DUP20201209-20201209	460-224520-3	ZINC	12/11/2020		Y	N	U		U	16.0	5.1	ug/l
DUP20201209-20201209	460-224520-3	VANADIUM	12/11/2020	1.2	Y	Y	J		J	4.0	0.37	ug/l
DUP20201209-20201209	460-224520-3	THALLIUM	12/11/2020		Y	N	U		U	0.80	0.17	ug/l
DUP20201209-20201209	460-224520-3	SODIUM	12/11/2020	129000	Y	Y				200	58.2	ug/l
DUP20201209-20201209	460-224520-3	SELENIUM	12/11/2020	2.7	Y	Y				2.5	0.46	ug/l
DUP20201209-20201209	460-224520-3	ANTIMONY	12/11/2020		Y	N	U		U	2.0	0.76	ug/l
DUP20201209-20201209	460-224520-3	COPPER	12/11/2020		Y	N	U		U	4.0	2.5	ug/l
DUP20201209-20201209	460-224520-3	CHROMIUM, TOTAL	12/11/2020	7.0	Y	Y				4.0	0.69	ug/l
DUP20201209-20201209	460-224520-3	SILVER	12/11/2020		Y	N	U		U	2.0	0.19	ug/l
DUP20201209-20201209	460-224520-3	IRON	12/11/2020	144	Y	Y				120	8.5	ug/l
DUP20201209-20201209	460-224520-3	BERYLLIUM	12/11/2020		Y	N	U		U	0.80	0.098	ug/l

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Analytical Method SW6020

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
DUP20201209-20201209	460-224520-3	CADMIUM	12/11/2020		Y	N	U		U	2.0	0.16	ug/l
DUP20201209-20201209	460-224520-3	CALCIUM	12/11/2020	103000	Y	Y				200	22.7	ug/l
DUP20201209-20201209	460-224520-3	COBALT	12/11/2020	0.98	Y	Y	J		J	4.0	0.26	ug/l
DUP20201209-20201209	460-224520-3	BARIUM	12/11/2020	101	Y	Y				4.0	0.91	ug/l
DUP20201209-20201209	460-224520-3	NICKEL	12/11/2020		Y	N	J	U	U	4.0	0.45	ug/l
DUP20201209-20201209	460-224520-3	LEAD	12/11/2020		Y	N	U		U	1.2	0.11	ug/l
DUP20201209-20201209	460-224520-3	MAGNESIUM	12/11/2020	34900	Y	Y				200	15.4	ug/l
DUP20201209-20201209	460-224520-3	MANGANESE	12/11/2020	37.3	Y	Y				8.0	1.1	ug/l
DUP20201209-20201209	460-224520-3	ARSENIC	12/11/2020		Y	N	U		U	2.0	0.89	ug/l
DUP20201209-20201209	460-224520-3	ALUMINUM	12/11/2020	65.5	Y	Y				40.0	8.0	ug/l
MW-P3-20201209	460-224520-4	CHROMIUM, TOTAL	12/11/2020	6.8	Y	Y				4.0	0.69	ug/l
MW-P3-20201209	460-224520-4	IRON	12/11/2020	129	Y	Y				120	8.5	ug/l
MW-P3-20201209	460-224520-4	MANGANESE	12/11/2020	36.8	Y	Y				8.0	1.1	ug/l
MW-P3-20201209	460-224520-4	POTASSIUM	12/11/2020	3380	Y	Y				200	112	ug/l
MW-P3-20201209	460-224520-4	SODIUM	12/11/2020	119000	Y	Y				200	58.2	ug/l
MW-P3-20201209	460-224520-4	MAGNESIUM	12/11/2020	33800	Y	Y				200	15.4	ug/l
MW-P3-20201209	460-224520-4	LEAD	12/11/2020		Y	N	U		U	1.2	0.11	ug/l
MW-P3-20201209	460-224520-4	COBALT	12/11/2020	0.98	Y	Y	J		J	4.0	0.26	ug/l
MW-P3-20201209	460-224520-4	CALCIUM	12/11/2020	97500	Y	Y				200	22.7	ug/l
MW-P3-20201209	460-224520-4	COPPER	12/11/2020		Y	N	U		U	4.0	2.5	ug/l
MW-P3-20201209	460-224520-4	SELENIUM	12/11/2020	2.5	Y	Y				2.5	0.46	ug/l
MW-P3-20201209	460-224520-4	SILVER	12/11/2020		Y	N	U		U	2.0	0.19	ug/l
MW-P3-20201209	460-224520-4	VANADIUM	12/11/2020	1.2	Y	Y	J		J	4.0	0.37	ug/l
MW-P3-20201209	460-224520-4	NICKEL	12/11/2020		Y	N	J	U	U	4.0	0.45	ug/l
MW-P3-20201209	460-224520-4	ZINC	12/11/2020		Y	N	U		U	16.0	5.1	ug/l

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Analytical Method SW6020

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
MW-P3-20201209	460-224520-4	ALUMINUM	12/11/2020	52.6	Y	Y				40.0	8.0	ug/l
MW-P3-20201209	460-224520-4	ANTIMONY	12/11/2020		Y	N	U		U	2.0	0.76	ug/l
MW-P3-20201209	460-224520-4	ARSENIC	12/11/2020		Y	N	U		U	2.0	0.89	ug/l
MW-P3-20201209	460-224520-4	BARIUM	12/11/2020	94.9	Y	Y				4.0	0.91	ug/l
MW-P3-20201209	460-224520-4	BERYLLIUM	12/11/2020		Y	N	U		U	0.80	0.098	ug/l
MW-P3-20201209	460-224520-4	CADMIUM	12/11/2020		Y	N	U		U	2.0	0.16	ug/l
MW-P3-20201209	460-224520-4	THALLIUM	12/11/2020		Y	N	U		U	0.80	0.17	ug/l
MW-P4-20201209	460-224520-5	NICKEL	12/11/2020		Y	N	J	U	U	4.0	0.45	ug/l
MW-P4-20201209	460-224520-5	IRON	12/11/2020		Y	N	J	U	U	120	8.5	ug/l
MW-P4-20201209	460-224520-5	THALLIUM	12/11/2020		Y	N	U		U	0.80	0.17	ug/l
MW-P4-20201209	460-224520-5	ARSENIC	12/11/2020		Y	N	U		U	2.0	0.89	ug/l
MW-P4-20201209	460-224520-5	ZINC	12/11/2020		Y	N	U		U	16.0	5.1	ug/l
MW-P4-20201209	460-224520-5	ANTIMONY	12/11/2020		Y	N	U		U	2.0	0.76	ug/l
MW-P4-20201209	460-224520-5	BARIUM	12/11/2020	87.8	Y	Y				4.0	0.91	ug/l
MW-P4-20201209	460-224520-5	BERYLLIUM	12/11/2020		Y	N	U		U	0.80	0.098	ug/l
MW-P4-20201209	460-224520-5	CADMIUM	12/11/2020		Y	N	U		U	2.0	0.16	ug/l
MW-P4-20201209	460-224520-5	CALCIUM	12/11/2020	75900	Y	Y				200	22.7	ug/l
MW-P4-20201209	460-224520-5	CHROMIUM, TOTAL	12/11/2020	8.2	Y	Y				4.0	0.69	ug/l
MW-P4-20201209	460-224520-5	COBALT	12/11/2020	1.7	Y	Y	J		J	4.0	0.26	ug/l
MW-P4-20201209	460-224520-5	COPPER	12/11/2020	2.5	Y	Y	J		J	4.0	2.5	ug/l
MW-P4-20201209	460-224520-5	MAGNESIUM	12/11/2020	27200	Y	Y				200	15.4	ug/l
MW-P4-20201209	460-224520-5	MANGANESE	12/11/2020	5.2	Y	Y	J		J	8.0	1.1	ug/l
MW-P4-20201209	460-224520-5	POTASSIUM	12/11/2020	3780	Y	Y				200	112	ug/l
MW-P4-20201209	460-224520-5	SELENIUM	12/11/2020	3.7	Y	Y				2.5	0.46	ug/l
MW-P4-20201209	460-224520-5	SILVER	12/11/2020		Y	N	U		U	2.0	0.19	ug/l

SDG: 4602245201

Analytical Method SW6020

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
MW-P4-20201209	460-224520-5	SODIUM	12/11/2020	126000	Y	Y				200	58.2	ug/l
MW-P4-20201209	460-224520-5	VANADIUM	12/11/2020	1.2	Y	Y	J		J	4.0	0.37	ug/l
MW-P4-20201209	460-224520-5	ALUMINUM	12/11/2020	68.3	Y	Y				40.0	8.0	ug/l
MW-P4-20201209	460-224520-5	LEAD	12/11/2020		Y	N	U		U	1.2	0.11	ug/l

Analytical Method SW7470A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EB20201209-20201209	460-224520-1	MERCURY	12/11/2020		Y	N	U		U	0.20	0.091	ug/l
FB20201209-20201209	460-224520-2	MERCURY	12/11/2020		Y	N	U		U	0.20	0.091	ug/l
DUP20201209-20201209	460-224520-3	MERCURY	12/11/2020		Y	N	U		U	0.20	0.091	ug/l
MW-P3-20201209	460-224520-4	MERCURY	12/11/2020		Y	N	U		U	0.20	0.091	ug/l
MW-P4-20201209	460-224520-5	MERCURY	12/11/2020		Y	N	U		U	0.20	0.091	ug/l

Analytical Method SW8081B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EB20201209-20201209	460-224520-1	DIELDRIN	12/15/2020		Y	N	U		U	0.020	0.0030	ug/l
EB20201209-20201209	460-224520-1	ENDRIN ALDEHYDE	12/15/2020		Y	N	U		U	0.020	0.0080	ug/l
EB20201209-20201209	460-224520-1	ENDRIN	12/15/2020		Y	N	U		U	0.020	0.0040	ug/l
EB20201209-20201209	460-224520-1	ALDRIN	12/15/2020		Y	N	U		U	0.020	0.0030	ug/l
EB20201209-20201209	460-224520-1	ENDOSULFAN SULFATE	12/15/2020		Y	N	U		U	0.020	0.0060	ug/l
EB20201209-20201209	460-224520-1	ENDRIN KETONE	12/15/2020		Y	N	U		U	0.020	0.0080	ug/l
EB20201209-20201209	460-224520-1	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	12/15/2020		Y	N	U		U	0.020	0.0050	ug/l
EB20201209-20201209	460-224520-1	P,P'-DDE	12/15/2020		Y	N	U		U	0.020	0.0020	ug/l
EB20201209-20201209	460-224520-1	Chlordane (Technical)	12/15/2020		Y	N	U		U	0.50	0.055	ug/l
EB20201209-20201209	460-224520-1	BETA ENDOSULFAN	12/15/2020		Y	N	U		U	0.020	0.0040	ug/l

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Analytical Method SW8081B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EB20201209-20201209	460-224520-1	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	12/15/2020		Y	N	U		U	0.020	0.0040	ug/l
EB20201209-20201209	460-224520-1	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	12/15/2020		Y	N	U		U	0.020	0.0070	ug/l
EB20201209-20201209	460-224520-1	ALPHA ENDOSULFAN	12/15/2020		Y	N	U		U	0.020	0.0020	ug/l
EB20201209-20201209	460-224520-1	HEPTACHLOR	12/15/2020		Y	N	U		U	0.020	0.0030	ug/l
EB20201209-20201209	460-224520-1	HEPTACHLOR EPOXIDE	12/15/2020		Y	N	U		U	0.020	0.0050	ug/l
EB20201209-20201209	460-224520-1	P,P'-DDD	12/15/2020		Y	N	U		U	0.020	0.0060	ug/l
EB20201209-20201209	460-224520-1	P,P'-DDT	12/15/2020		Y	N	U		U	0.020	0.0040	ug/l
EB20201209-20201209	460-224520-1	TOXAPHENE	12/15/2020		Y	N	U		U	0.50	0.11	ug/l
EB20201209-20201209	460-224520-1	GAMMA BHC (LINDANE)	12/15/2020		Y	N	U		U	0.020	0.012	ug/l
EB20201209-20201209	460-224520-1	METHOXYCHLOR	12/15/2020		Y	N	U		U	0.020	0.0040	ug/l
FB20201209-20201209	460-224520-2	TOXAPHENE	12/15/2020		Y	N	U		U	0.50	0.11	ug/l
FB20201209-20201209	460-224520-2	ENDRIN KETONE	12/15/2020		Y	N	U		U	0.020	0.0080	ug/l
FB20201209-20201209	460-224520-2	GAMMA BHC (LINDANE)	12/15/2020		Y	N	U		U	0.020	0.012	ug/l
FB20201209-20201209	460-224520-2	HEPTACHLOR	12/15/2020		Y	N	U		U	0.020	0.0030	ug/l
FB20201209-20201209	460-224520-2	HEPTACHLOR EPOXIDE	12/15/2020		Y	N	U		U	0.020	0.0050	ug/l
FB20201209-20201209	460-224520-2	ENDRIN ALDEHYDE	12/15/2020		Y	N	U		U	0.020	0.0080	ug/l
FB20201209-20201209	460-224520-2	P,P'-DDT	12/15/2020		Y	N	U		U	0.020	0.0040	ug/l
FB20201209-20201209	460-224520-2	METHOXYCHLOR	12/15/2020		Y	N	U		U	0.020	0.0040	ug/l
FB20201209-20201209	460-224520-2	P,P'-DDD	12/15/2020		Y	N	U		U	0.020	0.0060	ug/l
FB20201209-20201209	460-224520-2	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	12/15/2020		Y	N	U		U	0.020	0.0070	ug/l
FB20201209-20201209	460-224520-2	P,P'-DDE	12/15/2020		Y	N	U		U	0.020	0.0020	ug/l
FB20201209-20201209	460-224520-2	ENDRIN	12/15/2020		Y	N	U		U	0.020	0.0040	ug/l
FB20201209-20201209	460-224520-2	ALDRIN	12/15/2020		Y	N	U		U	0.020	0.0030	ug/l
FB20201209-20201209	460-224520-2	ALPHA ENDOSULFAN	12/15/2020		Y	N	U		U	0.020	0.0020	ug/l

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Analytical Method SW8081B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
FB20201209-20201209	460-224520-2	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	12/15/2020		Y	N	U		U	0.020	0.0040	ug/l
FB20201209-20201209	460-224520-2	BETA ENDOSULFAN	12/15/2020		Y	N	U		U	0.020	0.0040	ug/l
FB20201209-20201209	460-224520-2	Chlordane (Technical)	12/15/2020		Y	N	U		U	0.50	0.055	ug/l
FB20201209-20201209	460-224520-2	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	12/15/2020		Y	N	U		U	0.020	0.0050	ug/l
FB20201209-20201209	460-224520-2	DIELDRIN	12/15/2020		Y	N	U		U	0.020	0.0030	ug/l
FB20201209-20201209	460-224520-2	ENDOSULFAN SULFATE	12/15/2020		Y	N	U		U	0.020	0.0060	ug/l
DUP20201209-20201209	460-224520-3	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	12/15/2020		Y	N	U		U	0.020	0.0070	ug/l
DUP20201209-20201209	460-224520-3	HEPTACHLOR EPOXIDE	12/15/2020		Y	N	U		U	0.020	0.0050	ug/l
DUP20201209-20201209	460-224520-3	ENDRIN	12/15/2020		Y	N	U		U	0.020	0.0040	ug/l
DUP20201209-20201209	460-224520-3	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	12/15/2020		Y	N	U		U	0.020	0.0040	ug/l
DUP20201209-20201209	460-224520-3	BETA ENDOSULFAN	12/15/2020		Y	N	U		U	0.020	0.0040	ug/l
DUP20201209-20201209	460-224520-3	Chlordane (Technical)	12/15/2020		Y	N	U		U	0.50	0.055	ug/l
DUP20201209-20201209	460-224520-3	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	12/15/2020		Y	N	U		U	0.020	0.0050	ug/l
DUP20201209-20201209	460-224520-3	DIELDRIN	12/15/2020		Y	N	U		U	0.020	0.0030	ug/l
DUP20201209-20201209	460-224520-3	ENDOSULFAN SULFATE	12/15/2020		Y	N	U		U	0.020	0.0060	ug/l
DUP20201209-20201209	460-224520-3	ALPHA ENDOSULFAN	12/15/2020		Y	N	U		U	0.020	0.0020	ug/l
DUP20201209-20201209	460-224520-3	ENDRIN ALDEHYDE	12/15/2020		Y	N	U		U	0.020	0.0080	ug/l
DUP20201209-20201209	460-224520-3	TOXAPHENE	12/15/2020		Y	N	U		U	0.50	0.11	ug/l
DUP20201209-20201209	460-224520-3	P,P'-DDT	12/15/2020		Y	N	U		U	0.020	0.0040	ug/l
DUP20201209-20201209	460-224520-3	ENDRIN KETONE	12/15/2020		Y	N	U		U	0.020	0.0080	ug/l
DUP20201209-20201209	460-224520-3	HEPTACHLOR	12/15/2020		Y	N	U		U	0.020	0.0030	ug/l
DUP20201209-20201209	460-224520-3	METHOXYCHLOR	12/15/2020		Y	N	U		U	0.020	0.0040	ug/l
DUP20201209-20201209	460-224520-3	P,P'-DDD	12/15/2020		Y	N	U		U	0.020	0.0060	ug/l

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Analytical Method SW8081B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
DUP20201209-20201209	460-224520-3	P,P'-DDE	12/15/2020		Y	N	U		U	0.020	0.0020	ug/l
DUP20201209-20201209	460-224520-3	ALDRIN	12/15/2020		Y	N	U		U	0.020	0.0030	ug/l
DUP20201209-20201209	460-224520-3	GAMMA BHC (LINDANE)	12/15/2020		Y	N	U		U	0.020	0.012	ug/l
MW-P3-20201209	460-224520-4	ENDRIN KETONE	12/15/2020		Y	N	U		U	0.020	0.0080	ug/l
MW-P3-20201209	460-224520-4	ALDRIN	12/15/2020		Y	N	U		U	0.020	0.0030	ug/l
MW-P3-20201209	460-224520-4	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	12/15/2020		Y	N	U		U	0.020	0.0070	ug/l
MW-P3-20201209	460-224520-4	ALPHA ENDOSULFAN	12/15/2020		Y	N	U		U	0.020	0.0020	ug/l
MW-P3-20201209	460-224520-4	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	12/15/2020		Y	N	U		U	0.020	0.0040	ug/l
MW-P3-20201209	460-224520-4	BETA ENDOSULFAN	12/15/2020		Y	N	U		U	0.020	0.0040	ug/l
MW-P3-20201209	460-224520-4	ENDOSULFAN SULFATE	12/15/2020		Y	N	U		U	0.020	0.0060	ug/l
MW-P3-20201209	460-224520-4	Chlordane (Technical)	12/15/2020		Y	N	U		U	0.50	0.055	ug/l
MW-P3-20201209	460-224520-4	DIELDRIN	12/15/2020		Y	N	U		U	0.020	0.0030	ug/l
MW-P3-20201209	460-224520-4	ENDRIN ALDEHYDE	12/15/2020		Y	N	U		U	0.020	0.0080	ug/l
MW-P3-20201209	460-224520-4	TOXAPHENE	12/15/2020		Y	N	U		U	0.50	0.11	ug/l
MW-P3-20201209	460-224520-4	GAMMA BHC (LINDANE)	12/15/2020		Y	N	U		U	0.020	0.012	ug/l
MW-P3-20201209	460-224520-4	HEPTACHLOR	12/15/2020		Y	N	U		U	0.020	0.0030	ug/l
MW-P3-20201209	460-224520-4	HEPTACHLOR EPOXIDE	12/15/2020		Y	N	U		U	0.020	0.0050	ug/l
MW-P3-20201209	460-224520-4	METHOXYCHLOR	12/15/2020		Y	N	U		U	0.020	0.0040	ug/l
MW-P3-20201209	460-224520-4	P,P'-DDD	12/15/2020		Y	N	U		U	0.020	0.0060	ug/l
MW-P3-20201209	460-224520-4	P,P'-DDE	12/15/2020		Y	N	U		U	0.020	0.0020	ug/l
MW-P3-20201209	460-224520-4	P,P'-DDT	12/15/2020		Y	N	U		U	0.020	0.0040	ug/l
MW-P3-20201209	460-224520-4	ENDRIN	12/15/2020		Y	N	U		U	0.020	0.0040	ug/l
MW-P3-20201209	460-224520-4	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	12/15/2020		Y	N	U		U	0.020	0.0050	ug/l

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Analytical Method	SW8081B											
Sample ID	**Lab Sample ID**	**Chemical Name**	**Anal Date**	**Result**	**Validated**	**Detect**	**Lab Qual**	**Val Qual**	**Final qual**	**RL**	**MDL**	**Units**
MW-P4-20201209	460-224520-5	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	12/15/2020		Y	N	U		U	0.020	0.0070	ug/l
MW-P4-20201209	460-224520-5	ALPHA ENDOSULFAN	12/15/2020		Y	N	U		U	0.020	0.0020	ug/l
MW-P4-20201209	460-224520-5	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	12/15/2020		Y	N	U		U	0.020	0.0040	ug/l
MW-P4-20201209	460-224520-5	BETA ENDOSULFAN	12/15/2020		Y	N	U		U	0.020	0.0040	ug/l
MW-P4-20201209	460-224520-5	Chlordane (Technical)	12/15/2020		Y	N	U		U	0.50	0.055	ug/l
MW-P4-20201209	460-224520-5	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	12/15/2020		Y	N	U		U	0.020	0.0050	ug/l
MW-P4-20201209	460-224520-5	ENDOSULFAN SULFATE	12/15/2020		Y	N	U		U	0.020	0.0060	ug/l
MW-P4-20201209	460-224520-5	ALDRIN	12/15/2020		Y	N	U		U	0.020	0.0030	ug/l
MW-P4-20201209	460-224520-5	ENDRIN KETONE	12/15/2020		Y	N	U		U	0.020	0.0080	ug/l
MW-P4-20201209	460-224520-5	DIELDRIN	12/15/2020		Y	N	U		U	0.020	0.0030	ug/l
MW-P4-20201209	460-224520-5	GAMMA BHC (LINDANE)	12/15/2020		Y	N	U		U	0.020	0.012	ug/l
MW-P4-20201209	460-224520-5	HEPTACHLOR	12/15/2020		Y	N	U		U	0.020	0.0030	ug/l
MW-P4-20201209	460-224520-5	HEPTACHLOR EPOXIDE	12/15/2020		Y	N	U		U	0.020	0.0050	ug/l
MW-P4-20201209	460-224520-5	METHOXYCHLOR	12/15/2020		Y	N	U		U	0.020	0.0040	ug/l
MW-P4-20201209	460-224520-5	P,P'-DDD	12/15/2020		Y	N	U		U	0.020	0.0060	ug/l
MW-P4-20201209	460-224520-5	P,P'-DDE	12/15/2020		Y	N	U		U	0.020	0.0020	ug/l
MW-P4-20201209	460-224520-5	P,P'-DDT	12/15/2020		Y	N	U		U	0.020	0.0040	ug/l
MW-P4-20201209	460-224520-5	TOXAPHENE	12/15/2020		Y	N	U		U	0.50	0.11	ug/l
MW-P4-20201209	460-224520-5	ENDRIN ALDEHYDE	12/15/2020		Y	N	U		U	0.020	0.0080	ug/l
MW-P4-20201209	460-224520-5	ENDRIN	12/15/2020		Y	N	U		U	0.020	0.0040	ug/l

Analytical Method	SW8082A											
Sample ID	**Lab Sample ID**	**Chemical Name**	**Anal Date**	**Result**	**Validated**	**Detect**	**Lab Qual**	**Val Qual**	**Final qual**	**RL**	**MDL**	**Units**
EB20201209-20201209	460-224520-1	TOTAL PCBS	12/14/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l

SDG: 4602245201

Analytical Method SW8082A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EB20201209-20201209	460-224520-1	PCB-1016 (AROCLOR 1016)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
EB20201209-20201209	460-224520-1	PCB-1260 (AROCLOR 1260)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.11	ug/l
EB20201209-20201209	460-224520-1	PCB-1254 (AROCLOR 1254)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.11	ug/l
EB20201209-20201209	460-224520-1	PCB-1248 (AROCLOR 1248)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
EB20201209-20201209	460-224520-1	PCB-1242 (AROCLOR 1242)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
EB20201209-20201209	460-224520-1	PCB-1232 (AROCLOR 1232)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
EB20201209-20201209	460-224520-1	PCB-1221 (AROCLOR 1221)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
EB20201209-20201209	460-224520-1	PCB-1268 (AROCLOR 1268)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.11	ug/l
EB20201209-20201209	460-224520-1	PCB-1262 (AROCLOR 1262)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.11	ug/l
FB20201209-20201209	460-224520-2	PCB-1221 (AROCLOR 1221)	12/14/2020		Y	N	U		U	0.40	0.12	ug/l
FB20201209-20201209	460-224520-2	PCB-1242 (AROCLOR 1242)	12/14/2020		Y	N	U		U	0.40	0.12	ug/l
FB20201209-20201209	460-224520-2	PCB-1232 (AROCLOR 1232)	12/14/2020		Y	N	U		U	0.40	0.12	ug/l
FB20201209-20201209	460-224520-2	PCB-1248 (AROCLOR 1248)	12/14/2020		Y	N	U		U	0.40	0.12	ug/l
FB20201209-20201209	460-224520-2	PCB-1260 (AROCLOR 1260)	12/14/2020		Y	N	U		U	0.40	0.11	ug/l
FB20201209-20201209	460-224520-2	PCB-1262 (AROCLOR 1262)	12/14/2020		Y	N	U		U	0.40	0.11	ug/l
FB20201209-20201209	460-224520-2	PCB-1268 (AROCLOR 1268)	12/14/2020		Y	N	U		U	0.40	0.11	ug/l
FB20201209-20201209	460-224520-2	TOTAL PCBS	12/14/2020		Y	N	U		U	0.40	0.12	ug/l
FB20201209-20201209	460-224520-2	PCB-1016 (AROCLOR 1016)	12/14/2020		Y	N	U		U	0.40	0.12	ug/l
FB20201209-20201209	460-224520-2	PCB-1254 (AROCLOR 1254)	12/14/2020		Y	N	U		U	0.40	0.11	ug/l
DUP20201209-20201209	460-224520-3	TOTAL PCBS	12/14/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
DUP20201209-20201209	460-224520-3	PCB-1242 (AROCLOR 1242)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
DUP20201209-20201209	460-224520-3	PCB-1260 (AROCLOR 1260)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.11	ug/l
DUP20201209-20201209	460-224520-3	PCB-1262 (AROCLOR 1262)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.11	ug/l
DUP20201209-20201209	460-224520-3	PCB-1268 (AROCLOR 1268)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.11	ug/l
DUP20201209-20201209	460-224520-3	PCB-1016 (AROCLOR 1016)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l

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Analytical Method SW8082A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
DUP20201209-20201209	460-224520-3	PCB-1232 (AROCLOR 1232)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
DUP20201209-20201209	460-224520-3	PCB-1248 (AROCLOR 1248)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
DUP20201209-20201209	460-224520-3	PCB-1221 (AROCLOR 1221)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
DUP20201209-20201209	460-224520-3	PCB-1254 (AROCLOR 1254)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.11	ug/l
MW-P3-20201209	460-224520-4	PCB-1260 (AROCLOR 1260)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.11	ug/l
MW-P3-20201209	460-224520-4	PCB-1254 (AROCLOR 1254)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.11	ug/l
MW-P3-20201209	460-224520-4	PCB-1248 (AROCLOR 1248)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
MW-P3-20201209	460-224520-4	PCB-1242 (AROCLOR 1242)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
MW-P3-20201209	460-224520-4	PCB-1232 (AROCLOR 1232)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
MW-P3-20201209	460-224520-4	PCB-1016 (AROCLOR 1016)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
MW-P3-20201209	460-224520-4	PCB-1262 (AROCLOR 1262)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.11	ug/l
MW-P3-20201209	460-224520-4	TOTAL PCBS	12/14/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
MW-P3-20201209	460-224520-4	PCB-1268 (AROCLOR 1268)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.11	ug/l
MW-P3-20201209	460-224520-4	PCB-1221 (AROCLOR 1221)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
MW-P4-20201209	460-224520-5	PCB-1248 (AROCLOR 1248)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
MW-P4-20201209	460-224520-5	TOTAL PCBS	12/14/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
MW-P4-20201209	460-224520-5	PCB-1262 (AROCLOR 1262)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.11	ug/l
MW-P4-20201209	460-224520-5	PCB-1260 (AROCLOR 1260)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.11	ug/l
MW-P4-20201209	460-224520-5	PCB-1268 (AROCLOR 1268)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.11	ug/l
MW-P4-20201209	460-224520-5	PCB-1242 (AROCLOR 1242)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
MW-P4-20201209	460-224520-5	PCB-1232 (AROCLOR 1232)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
MW-P4-20201209	460-224520-5	PCB-1221 (AROCLOR 1221)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
MW-P4-20201209	460-224520-5	PCB-1016 (AROCLOR 1016)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.12	ug/l
MW-P4-20201209	460-224520-5	PCB-1254 (AROCLOR 1254)	12/14/2020		Y	N	U	UJ	UJ	0.40	0.11	ug/l

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Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EB20201209-20201209	460-224520-1	TRICHLOROFLUOROMETHANE	12/12/2020		Y	N	U		U	1.0	0.32	ug/l
EB20201209-20201209	460-224520-1	DIBROMOCHLOROMETHANE	12/12/2020		Y	N	U		U	1.0	0.28	ug/l
EB20201209-20201209	460-224520-1	CHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.38	ug/l
EB20201209-20201209	460-224520-1	BROMOFORM	12/12/2020		Y	N	U		U	1.0	0.54	ug/l
EB20201209-20201209	460-224520-1	1,2-DICHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.43	ug/l
EB20201209-20201209	460-224520-1	1,2-DICHLOROPROPANE	12/12/2020		Y	N	U		U	1.0	0.35	ug/l
EB20201209-20201209	460-224520-1	1,3-DICHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.34	ug/l
EB20201209-20201209	460-224520-1	1,4-DICHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.33	ug/l
EB20201209-20201209	460-224520-1	1,4-DIOXANE (P-DIOXANE)	12/12/2020		Y	N	U		U	50	28	ug/l
EB20201209-20201209	460-224520-1	2-HEXANONE	12/12/2020		Y	N	U		U	5.0	1.1	ug/l
EB20201209-20201209	460-224520-1	ACETONE	12/12/2020		Y	N	U		U	5.0	4.4	ug/l
EB20201209-20201209	460-224520-1	BENZENE	12/12/2020		Y	N	U		U	1.0	0.20	ug/l
EB20201209-20201209	460-224520-1	CHLOROFORM	12/12/2020		Y	N	U		U	1.0	0.33	ug/l
EB20201209-20201209	460-224520-1	BROMODICHLOROMETHANE	12/12/2020		Y	N	U		U	1.0	0.34	ug/l
EB20201209-20201209	460-224520-1	CIS-1,3-DICHLOROPROPENE	12/12/2020		Y	N	U		U	1.0	0.22	ug/l
EB20201209-20201209	460-224520-1	DICHLORODIFLUOROMETHANE	12/12/2020		Y	N	U	UJ	UJ	1.0	0.31	ug/l
EB20201209-20201209	460-224520-1	VINYL CHLORIDE	12/12/2020		Y	N	U		U	1.0	0.17	ug/l
EB20201209-20201209	460-224520-1	BROMOMETHANE	12/12/2020		Y	N	U		U	1.0	0.55	ug/l
EB20201209-20201209	460-224520-1	CARBON DISULFIDE	12/12/2020		Y	N	U		U	1.0	0.82	ug/l
EB20201209-20201209	460-224520-1	CARBON TETRACHLORIDE	12/12/2020		Y	N	U		U	1.0	0.21	ug/l
EB20201209-20201209	460-224520-1	CHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.32	ug/l
EB20201209-20201209	460-224520-1	CHLOROMETHANE	12/12/2020		Y	N	U		U	1.0	0.40	ug/l
EB20201209-20201209	460-224520-1	Cis-1,2-Dichloroethylene	12/12/2020		Y	N	U		U	1.0	0.22	ug/l
EB20201209-20201209	460-224520-1	BROMOCHLOROMETHANE	12/12/2020		Y	N	U		U	1.0	0.41	ug/l
EB20201209-20201209	460-224520-1	1,2,4-TRICHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.37	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EB20201209-20201209	460-224520-1	METHYLCYCLOHEXANE	12/12/2020		Y	N	U		U	1.0	0.71	ug/l
EB20201209-20201209	460-224520-1	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	12/12/2020		Y	N	U		U	5.0	1.3	ug/l
EB20201209-20201209	460-224520-1	METHYL ETHYL KETONE (2-BUTANONE)	12/12/2020		Y	N	U		U	5.0	1.9	ug/l
EB20201209-20201209	460-224520-1	O-XYLENE (1,2-DIMETHYLBENZENE)	12/12/2020		Y	N	U		U	1.0	0.36	ug/l
EB20201209-20201209	460-224520-1	STYRENE	12/12/2020		Y	N	U		U	1.0	0.42	ug/l
EB20201209-20201209	460-224520-1	TERT-BUTYL METHYL ETHER	12/12/2020		Y	N	U		U	1.0	0.22	ug/l
EB20201209-20201209	460-224520-1	TETRACHLOROETHYLENE(PCE)	12/12/2020		Y	N	U		U	1.0	0.25	ug/l
EB20201209-20201209	460-224520-1	TOLUENE	12/12/2020		Y	N	U		U	1.0	0.38	ug/l
EB20201209-20201209	460-224520-1	ETHYLBENZENE	12/12/2020		Y	N	U		U	1.0	0.30	ug/l
EB20201209-20201209	460-224520-1	CYCLOHEXANE	12/12/2020		Y	N	U		U	1.0	0.32	ug/l
EB20201209-20201209	460-224520-1	1,2-DICHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.21	ug/l
EB20201209-20201209	460-224520-1	METHYLENE CHLORIDE	12/12/2020		Y	N	U		U	1.0	0.32	ug/l
EB20201209-20201209	460-224520-1	1,2-DIBROMO-3-CHLOROPROPANE	12/12/2020		Y	N	U	UJ	UJ	1.0	0.38	ug/l
EB20201209-20201209	460-224520-1	1,1,2,2-TETRACHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.37	ug/l
EB20201209-20201209	460-224520-1	Isopropylbenzene (Cumene)	12/12/2020		Y	N	U		U	1.0	0.34	ug/l
EB20201209-20201209	460-224520-1	M,P-XYLENES	12/12/2020		Y	N	U		U	1.0	0.30	ug/l
EB20201209-20201209	460-224520-1	METHYL ACETATE	12/12/2020		Y	N	U		U	5.0	0.79	ug/l
EB20201209-20201209	460-224520-1	TRICHLOROETHYLENE (TCE)	12/12/2020		Y	N	U		U	1.0	0.31	ug/l
EB20201209-20201209	460-224520-1	TRANS-1,3-DICHLOROPROPENE	12/12/2020		Y	N	U		U	1.0	0.22	ug/l
EB20201209-20201209	460-224520-1	TRANS-1,2-DICHLOROETHENE	12/12/2020		Y	N	U		U	1.0	0.24	ug/l
EB20201209-20201209	460-224520-1	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	12/12/2020		Y	N	U		U	1.0	0.50	ug/l
EB20201209-20201209	460-224520-1	1,1,1-TRICHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.24	ug/l
EB20201209-20201209	460-224520-1	1,2,3-TRICHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.36	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EB20201209-20201209	460-224520-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	12/12/2020		Y	N	U		U	1.0	0.31	ug/l
EB20201209-20201209	460-224520-1	1,1,2-TRICHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.20	ug/l
EB20201209-20201209	460-224520-1	1,1-DICHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.26	ug/l
EB20201209-20201209	460-224520-1	1,1-DICHLOROETHENE	12/12/2020		Y	N	U		U	1.0	0.26	ug/l
FB20201209-20201209	460-224520-2	1,2-DICHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.21	ug/l
FB20201209-20201209	460-224520-2	1,2-DICHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.43	ug/l
FB20201209-20201209	460-224520-2	1,2-DICHLOROPROPANE	12/12/2020		Y	N	U		U	1.0	0.35	ug/l
FB20201209-20201209	460-224520-2	1,1-DICHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.26	ug/l
FB20201209-20201209	460-224520-2	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	12/12/2020		Y	N	U		U	1.0	0.50	ug/l
FB20201209-20201209	460-224520-2	TRANS-1,2-DICHLOROETHENE	12/12/2020		Y	N	U		U	1.0	0.24	ug/l
FB20201209-20201209	460-224520-2	1,2-DIBROMO-3-CHLOROPROPANE	12/12/2020		Y	N	U	UJ	UJ	1.0	0.38	ug/l
FB20201209-20201209	460-224520-2	1,2,4-TRICHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.37	ug/l
FB20201209-20201209	460-224520-2	1,3-DICHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.34	ug/l
FB20201209-20201209	460-224520-2	1,1-DICHLOROETHENE	12/12/2020		Y	N	U		U	1.0	0.26	ug/l
FB20201209-20201209	460-224520-2	O-XYLENE (1,2-DIMETHYLBENZENE)	12/12/2020		Y	N	U		U	1.0	0.36	ug/l
FB20201209-20201209	460-224520-2	1,1,2-TRICHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.20	ug/l
FB20201209-20201209	460-224520-2	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	12/12/2020		Y	N	U		U	1.0	0.31	ug/l
FB20201209-20201209	460-224520-2	1,1,2,2-TETRACHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.37	ug/l
FB20201209-20201209	460-224520-2	1,1,1-TRICHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.24	ug/l
FB20201209-20201209	460-224520-2	TRANS-1,3-DICHLOROPROPENE	12/12/2020		Y	N	U		U	1.0	0.22	ug/l
FB20201209-20201209	460-224520-2	TRICHLOROETHYLENE (TCE)	12/12/2020		Y	N	U		U	1.0	0.31	ug/l
FB20201209-20201209	460-224520-2	TRICHLOROFLUOROMETHANE	12/12/2020		Y	N	U		U	1.0	0.32	ug/l
FB20201209-20201209	460-224520-2	VINYL CHLORIDE	12/12/2020		Y	N	U		U	1.0	0.17	ug/l
FB20201209-20201209	460-224520-2	1,2,3-TRICHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.36	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
FB20201209-20201209	460-224520-2	CYCLOHEXANE	12/12/2020		Y	N	U		U	1.0	0.32	ug/l
FB20201209-20201209	460-224520-2	2-HEXANONE	12/12/2020		Y	N	U		U	5.0	1.1	ug/l
FB20201209-20201209	460-224520-2	ACETONE	12/12/2020		Y	N	U		U	5.0	4.4	ug/l
FB20201209-20201209	460-224520-2	BENZENE	12/12/2020		Y	N	U		U	1.0	0.20	ug/l
FB20201209-20201209	460-224520-2	BROMOCHLOROMETHANE	12/12/2020		Y	N	U		U	1.0	0.41	ug/l
FB20201209-20201209	460-224520-2	BROMODICHLOROMETHANE	12/12/2020		Y	N	U		U	1.0	0.34	ug/l
FB20201209-20201209	460-224520-2	BROMOFORM	12/12/2020		Y	N	U		U	1.0	0.54	ug/l
FB20201209-20201209	460-224520-2	BROMOMETHANE	12/12/2020		Y	N	U		U	1.0	0.55	ug/l
FB20201209-20201209	460-224520-2	CARBON DISULFIDE	12/12/2020		Y	N	U		U	1.0	0.82	ug/l
FB20201209-20201209	460-224520-2	CARBON TETRACHLORIDE	12/12/2020		Y	N	U		U	1.0	0.21	ug/l
FB20201209-20201209	460-224520-2	CHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.38	ug/l
FB20201209-20201209	460-224520-2	CHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.32	ug/l
FB20201209-20201209	460-224520-2	CHLOROFORM	12/12/2020		Y	N	U		U	1.0	0.33	ug/l
FB20201209-20201209	460-224520-2	CHLOROMETHANE	12/12/2020		Y	N	U		U	1.0	0.40	ug/l
FB20201209-20201209	460-224520-2	TERT-BUTYL METHYL ETHER	12/12/2020		Y	N	U		U	1.0	0.22	ug/l
FB20201209-20201209	460-224520-2	METHYL ACETATE	12/12/2020		Y	N	U		U	5.0	0.79	ug/l
FB20201209-20201209	460-224520-2	1,4-DIOXANE (P-DIOXANE)	12/12/2020		Y	N	U		U	50	28	ug/l
FB20201209-20201209	460-224520-2	TOLUENE	12/12/2020		Y	N	U		U	1.0	0.38	ug/l
FB20201209-20201209	460-224520-2	TETRACHLOROETHYLENE(PCE)	12/12/2020		Y	N	U		U	1.0	0.25	ug/l
FB20201209-20201209	460-224520-2	STYRENE	12/12/2020		Y	N	U		U	1.0	0.42	ug/l
FB20201209-20201209	460-224520-2	METHYLCYCLOHEXANE	12/12/2020		Y	N	U		U	1.0	0.71	ug/l
FB20201209-20201209	460-224520-2	Cis-1,2-Dichloroethylene	12/12/2020		Y	N	U		U	1.0	0.22	ug/l
FB20201209-20201209	460-224520-2	METHYL ETHYL KETONE (2-BUTANONE)	12/12/2020		Y	N	U		U	5.0	1.9	ug/l
FB20201209-20201209	460-224520-2	CIS-1,3-DICHLOROPROPENE	12/12/2020		Y	N	U		U	1.0	0.22	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
FB20201209-20201209	460-224520-2	M,P-XYLENES	12/12/2020		Y	N	U		U	1.0	0.30	ug/l
FB20201209-20201209	460-224520-2	Isopropylbenzene (Cumene)	12/12/2020		Y	N	U		U	1.0	0.34	ug/l
FB20201209-20201209	460-224520-2	ETHYLBENZENE	12/12/2020		Y	N	U		U	1.0	0.30	ug/l
FB20201209-20201209	460-224520-2	DICHLORODIFLUOROMETHANE	12/12/2020		Y	N	U	UJ	UJ	1.0	0.31	ug/l
FB20201209-20201209	460-224520-2	DIBROMOCHLOROMETHANE	12/12/2020		Y	N	U		U	1.0	0.28	ug/l
FB20201209-20201209	460-224520-2	1,4-DICHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.33	ug/l
FB20201209-20201209	460-224520-2	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	12/12/2020		Y	N	U		U	5.0	1.3	ug/l
FB20201209-20201209	460-224520-2	METHYLENE CHLORIDE	12/12/2020		Y	N	U		U	1.0	0.32	ug/l
DUP20201209-20201209	460-224520-3	1,2-DICHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.43	ug/l
DUP20201209-20201209	460-224520-3	CARBON DISULFIDE	12/12/2020		Y	N	U		U	1.0	0.82	ug/l
DUP20201209-20201209	460-224520-3	BROMOMETHANE	12/12/2020		Y	N	U		U	1.0	0.55	ug/l
DUP20201209-20201209	460-224520-3	BROMOFORM	12/12/2020		Y	N	U		U	1.0	0.54	ug/l
DUP20201209-20201209	460-224520-3	BROMODICHLOROMETHANE	12/12/2020		Y	N	U		U	1.0	0.34	ug/l
DUP20201209-20201209	460-224520-3	BROMOCHLOROMETHANE	12/12/2020		Y	N	U		U	1.0	0.41	ug/l
DUP20201209-20201209	460-224520-3	BENZENE	12/12/2020		Y	N	U		U	1.0	0.20	ug/l
DUP20201209-20201209	460-224520-3	ACETONE	12/12/2020		Y	N	U		U	5.0	4.4	ug/l
DUP20201209-20201209	460-224520-3	2-HEXANONE	12/12/2020		Y	N	U		U	5.0	1.1	ug/l
DUP20201209-20201209	460-224520-3	1,4-DIOXANE (P-DIOXANE)	12/12/2020		Y	N	U		U	50	28	ug/l
DUP20201209-20201209	460-224520-3	1,4-DICHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.33	ug/l
DUP20201209-20201209	460-224520-3	1,1,1-TRICHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.24	ug/l
DUP20201209-20201209	460-224520-3	1,2-DICHLOROPROPANE	12/12/2020		Y	N	U		U	1.0	0.35	ug/l
DUP20201209-20201209	460-224520-3	CHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.32	ug/l
DUP20201209-20201209	460-224520-3	1,2-DICHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.21	ug/l
DUP20201209-20201209	460-224520-3	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	12/12/2020		Y	N	U		U	1.0	0.50	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
DUP20201209-20201209	460-224520-3	1,2-DIBROMO-3-CHLOROPROPANE	12/12/2020		Y	N	U	UJ	UJ	1.0	0.38	ug/l
DUP20201209-20201209	460-224520-3	1,2,4-TRICHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.37	ug/l
DUP20201209-20201209	460-224520-3	1,2,3-TRICHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.36	ug/l
DUP20201209-20201209	460-224520-3	1,1-DICHLOROETHENE	12/12/2020		Y	N	U		U	1.0	0.26	ug/l
DUP20201209-20201209	460-224520-3	1,1-DICHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.26	ug/l
DUP20201209-20201209	460-224520-3	1,1,2-TRICHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.20	ug/l
DUP20201209-20201209	460-224520-3	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	12/12/2020		Y	N	U		U	1.0	0.31	ug/l
DUP20201209-20201209	460-224520-3	1,1,2,2-TETRACHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.37	ug/l
DUP20201209-20201209	460-224520-3	1,3-DICHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.34	ug/l
DUP20201209-20201209	460-224520-3	METHYL ACETATE	12/12/2020		Y	N	U		U	5.0	0.79	ug/l
DUP20201209-20201209	460-224520-3	VINYL CHLORIDE	12/12/2020		Y	N	U		U	1.0	0.17	ug/l
DUP20201209-20201209	460-224520-3	TRICHLOROFLUOROMETHANE	12/12/2020		Y	N	U		U	1.0	0.32	ug/l
DUP20201209-20201209	460-224520-3	TRICHLOROETHYLENE (TCE)	12/12/2020	1.5	Y	Y				1.0	0.31	ug/l
DUP20201209-20201209	460-224520-3	TRANS-1,3-DICHLOROPROPENE	12/12/2020		Y	N	U		U	1.0	0.22	ug/l
DUP20201209-20201209	460-224520-3	TRANS-1,2-DICHLOROETHENE	12/12/2020		Y	N	U		U	1.0	0.24	ug/l
DUP20201209-20201209	460-224520-3	TOLUENE	12/12/2020		Y	N	U		U	1.0	0.38	ug/l
DUP20201209-20201209	460-224520-3	TETRACHLOROETHYLENE(PCE)	12/12/2020	110	Y	Y				1.0	0.25	ug/l
DUP20201209-20201209	460-224520-3	TERT-BUTYL METHYL ETHER	12/12/2020		Y	N	U		U	1.0	0.22	ug/l
DUP20201209-20201209	460-224520-3	O-XYLENE (1,2-DIMETHYLBENZENE)	12/12/2020		Y	N	U		U	1.0	0.36	ug/l
DUP20201209-20201209	460-224520-3	METHYLCYCLOHEXANE	12/12/2020		Y	N	U		U	1.0	0.71	ug/l
DUP20201209-20201209	460-224520-3	CARBON TETRACHLORIDE	12/12/2020		Y	N	U		U	1.0	0.21	ug/l
DUP20201209-20201209	460-224520-3	METHYL ETHYL KETONE (2-BUTANONE)	12/12/2020		Y	N	U		U	5.0	1.9	ug/l
DUP20201209-20201209	460-224520-3	CHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.38	ug/l
DUP20201209-20201209	460-224520-3	M,P-XYLENES	12/12/2020		Y	N	U		U	1.0	0.30	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
DUP20201209-20201209	460-224520-3	Isopropylbenzene (Cumene)	12/12/2020		Y	N	U		U	1.0	0.34	ug/l
DUP20201209-20201209	460-224520-3	ETHYLBENZENE	12/12/2020		Y	N	U		U	1.0	0.30	ug/l
DUP20201209-20201209	460-224520-3	DICHLORODIFLUOROMETHANE	12/12/2020		Y	N	U	UJ	UJ	1.0	0.31	ug/l
DUP20201209-20201209	460-224520-3	DIBROMOCHLOROMETHANE	12/12/2020		Y	N	U		U	1.0	0.28	ug/l
DUP20201209-20201209	460-224520-3	CYCLOHEXANE	12/12/2020		Y	N	U		U	1.0	0.32	ug/l
DUP20201209-20201209	460-224520-3	CIS-1,3-DICHLOROPROPENE	12/12/2020		Y	N	U		U	1.0	0.22	ug/l
DUP20201209-20201209	460-224520-3	Cis-1,2-Dichloroethylene	12/12/2020		Y	N	U		U	1.0	0.22	ug/l
DUP20201209-20201209	460-224520-3	CHLOROMETHANE	12/12/2020		Y	N	U		U	1.0	0.40	ug/l
DUP20201209-20201209	460-224520-3	CHLOROFORM	12/12/2020	0.81	Y	Y	J		J	1.0	0.33	ug/l
DUP20201209-20201209	460-224520-3	METHYLENE CHLORIDE	12/12/2020		Y	N	U		U	1.0	0.32	ug/l
DUP20201209-20201209	460-224520-3	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	12/12/2020		Y	N	U		U	5.0	1.3	ug/l
DUP20201209-20201209	460-224520-3	STYRENE	12/12/2020		Y	N	U		U	1.0	0.42	ug/l
MW-P3-20201209	460-224520-4	1,2-DICHLOROPROPANE	12/12/2020		Y	N	U		U	1.0	0.35	ug/l
MW-P3-20201209	460-224520-4	TETRACHLOROETHYLENE(PCE)	12/12/2020	110	Y	Y				1.0	0.25	ug/l
MW-P3-20201209	460-224520-4	TOLUENE	12/12/2020		Y	N	U		U	1.0	0.38	ug/l
MW-P3-20201209	460-224520-4	TRANS-1,2-DICHLOROETHENE	12/12/2020		Y	N	U		U	1.0	0.24	ug/l
MW-P3-20201209	460-224520-4	TRANS-1,3-DICHLOROPROPENE	12/12/2020		Y	N	U		U	1.0	0.22	ug/l
MW-P3-20201209	460-224520-4	TRICHLOROETHYLENE (TCE)	12/12/2020	1.5	Y	Y				1.0	0.31	ug/l
MW-P3-20201209	460-224520-4	1,1-DICHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.26	ug/l
MW-P3-20201209	460-224520-4	1,1,2-TRICHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.20	ug/l
MW-P3-20201209	460-224520-4	1,2-DICHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.43	ug/l
MW-P3-20201209	460-224520-4	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	12/12/2020		Y	N	U		U	1.0	0.31	ug/l
MW-P3-20201209	460-224520-4	1,1,2,2-TETRACHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.37	ug/l
MW-P3-20201209	460-224520-4	TERT-BUTYL METHYL ETHER	12/12/2020		Y	N	U		U	1.0	0.22	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
MW-P3-20201209	460-224520-4	TRICHLOROFLUOROMETHANE	12/12/2020		Y	N	U		U	1.0	0.32	ug/l
MW-P3-20201209	460-224520-4	VINYL CHLORIDE	12/12/2020		Y	N	U		U	1.0	0.17	ug/l
MW-P3-20201209	460-224520-4	1,4-DICHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.33	ug/l
MW-P3-20201209	460-224520-4	1,4-DIOXANE (P-DIOXANE)	12/12/2020		Y	N	U		U	50	28	ug/l
MW-P3-20201209	460-224520-4	2-HEXANONE	12/12/2020		Y	N	U		U	5.0	1.1	ug/l
MW-P3-20201209	460-224520-4	1,1-DICHLOROETHENE	12/12/2020		Y	N	U		U	1.0	0.26	ug/l
MW-P3-20201209	460-224520-4	1,2,3-TRICHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.36	ug/l
MW-P3-20201209	460-224520-4	1,2,4-TRICHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.37	ug/l
MW-P3-20201209	460-224520-4	1,2-DIBROMO-3-CHLOROPROPANE	12/12/2020		Y	N	U	UJ	UJ	1.0	0.38	ug/l
MW-P3-20201209	460-224520-4	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	12/12/2020		Y	N	U		U	1.0	0.50	ug/l
MW-P3-20201209	460-224520-4	1,2-DICHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.21	ug/l
MW-P3-20201209	460-224520-4	Cis-1,2-Dichloroethylene	12/12/2020		Y	N	U		U	1.0	0.22	ug/l
MW-P3-20201209	460-224520-4	1,1,1-TRICHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.24	ug/l
MW-P3-20201209	460-224520-4	BROMOFORM	12/12/2020		Y	N	U		U	1.0	0.54	ug/l
MW-P3-20201209	460-224520-4	1,3-DICHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.34	ug/l
MW-P3-20201209	460-224520-4	STYRENE	12/12/2020		Y	N	U		U	1.0	0.42	ug/l
MW-P3-20201209	460-224520-4	CHLOROFORM	12/12/2020	0.83	Y	Y	J		J	1.0	0.33	ug/l
MW-P3-20201209	460-224520-4	CHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.32	ug/l
MW-P3-20201209	460-224520-4	CHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.38	ug/l
MW-P3-20201209	460-224520-4	CARBON TETRACHLORIDE	12/12/2020		Y	N	U		U	1.0	0.21	ug/l
MW-P3-20201209	460-224520-4	CARBON DISULFIDE	12/12/2020		Y	N	U		U	1.0	0.82	ug/l
MW-P3-20201209	460-224520-4	CHLOROMETHANE	12/12/2020		Y	N	U		U	1.0	0.40	ug/l
MW-P3-20201209	460-224520-4	BROMODICHLOROMETHANE	12/12/2020		Y	N	U		U	1.0	0.34	ug/l
MW-P3-20201209	460-224520-4	BROMOCHLOROMETHANE	12/12/2020		Y	N	U		U	1.0	0.41	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
MW-P3-20201209	460-224520-4	BENZENE	12/12/2020		Y	N	U		U	1.0	0.20	ug/l
MW-P3-20201209	460-224520-4	ACETONE	12/12/2020		Y	N	U		U	5.0	4.4	ug/l
MW-P3-20201209	460-224520-4	METHYLCYCLOHEXANE	12/12/2020		Y	N	U		U	1.0	0.71	ug/l
MW-P3-20201209	460-224520-4	O-XYLENE (1,2-DIMETHYLBENZENE)	12/12/2020		Y	N	U		U	1.0	0.36	ug/l
MW-P3-20201209	460-224520-4	BROMOMETHANE	12/12/2020		Y	N	U		U	1.0	0.55	ug/l
MW-P3-20201209	460-224520-4	METHYLENE CHLORIDE	12/12/2020		Y	N	U		U	1.0	0.32	ug/l
MW-P3-20201209	460-224520-4	CIS-1,3-DICHLOROPROPENE	12/12/2020		Y	N	U		U	1.0	0.22	ug/l
MW-P3-20201209	460-224520-4	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	12/12/2020		Y	N	U		U	5.0	1.3	ug/l
MW-P3-20201209	460-224520-4	METHYL ETHYL KETONE (2-BUTANONE)	12/12/2020		Y	N	U		U	5.0	1.9	ug/l
MW-P3-20201209	460-224520-4	METHYL ACETATE	12/12/2020		Y	N	U		U	5.0	0.79	ug/l
MW-P3-20201209	460-224520-4	M,P-XYLENES	12/12/2020		Y	N	U		U	1.0	0.30	ug/l
MW-P3-20201209	460-224520-4	Isopropylbenzene (Cumene)	12/12/2020		Y	N	U		U	1.0	0.34	ug/l
MW-P3-20201209	460-224520-4	ETHYLBENZENE	12/12/2020		Y	N	U		U	1.0	0.30	ug/l
MW-P3-20201209	460-224520-4	DICHLORODIFLUOROMETHANE	12/12/2020		Y	N	U	UJ	UJ	1.0	0.31	ug/l
MW-P3-20201209	460-224520-4	DIBROMOCHLOROMETHANE	12/12/2020		Y	N	U		U	1.0	0.28	ug/l
MW-P3-20201209	460-224520-4	CYCLOHEXANE	12/12/2020		Y	N	U		U	1.0	0.32	ug/l
MW-P4-20201209	460-224520-5	CHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.38	ug/l
MW-P4-20201209	460-224520-5	ETHYLBENZENE	12/12/2020		Y	N	U		U	1.0	0.30	ug/l
MW-P4-20201209	460-224520-5	DICHLORODIFLUOROMETHANE	12/12/2020		Y	N	U	UJ	UJ	1.0	0.31	ug/l
MW-P4-20201209	460-224520-5	DIBROMOCHLOROMETHANE	12/12/2020		Y	N	U		U	1.0	0.28	ug/l
MW-P4-20201209	460-224520-5	CYCLOHEXANE	12/12/2020		Y	N	U		U	1.0	0.32	ug/l
MW-P4-20201209	460-224520-5	CIS-1,3-DICHLOROPROPENE	12/12/2020		Y	N	U		U	1.0	0.22	ug/l
MW-P4-20201209	460-224520-5	Cis-1,2-Dichloroethylene	12/12/2020		Y	N	U		U	1.0	0.22	ug/l
MW-P4-20201209	460-224520-5	CHLOROMETHANE	12/12/2020		Y	N	U		U	1.0	0.40	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
MW-P4-20201209	460-224520-5	CARBON TETRACHLORIDE	12/12/2020		Y	N	U		U	1.0	0.21	ug/l
MW-P4-20201209	460-224520-5	CHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.32	ug/l
MW-P4-20201209	460-224520-5	Isopropylbenzene (Cumene)	12/12/2020		Y	N	U		U	1.0	0.34	ug/l
MW-P4-20201209	460-224520-5	CARBON DISULFIDE	12/12/2020		Y	N	U		U	1.0	0.82	ug/l
MW-P4-20201209	460-224520-5	TRICHLOROFLUOROMETHANE	12/12/2020		Y	N	U		U	1.0	0.32	ug/l
MW-P4-20201209	460-224520-5	CHLOROFORM	12/12/2020	3.8	Y	Y				1.0	0.33	ug/l
MW-P4-20201209	460-224520-5	STYRENE	12/12/2020		Y	N	U		U	1.0	0.42	ug/l
MW-P4-20201209	460-224520-5	BROMOCHLOROMETHANE	12/12/2020		Y	N	U		U	1.0	0.41	ug/l
MW-P4-20201209	460-224520-5	VINYL CHLORIDE	12/12/2020		Y	N	U		U	1.0	0.17	ug/l
MW-P4-20201209	460-224520-5	TRICHLOROETHYLENE (TCE)	12/12/2020	0.34	Y	Y	J		J	1.0	0.31	ug/l
MW-P4-20201209	460-224520-5	TRANS-1,2-DICHLOROETHENE	12/12/2020		Y	N	U		U	1.0	0.24	ug/l
MW-P4-20201209	460-224520-5	TOLUENE	12/12/2020		Y	N	U		U	1.0	0.38	ug/l
MW-P4-20201209	460-224520-5	TRANS-1,3-DICHLOROPROPENE	12/12/2020		Y	N	U		U	1.0	0.22	ug/l
MW-P4-20201209	460-224520-5	TERT-BUTYL METHYL ETHER	12/12/2020		Y	N	U		U	1.0	0.22	ug/l
MW-P4-20201209	460-224520-5	M,P-XYLENES	12/12/2020		Y	N	U		U	1.0	0.30	ug/l
MW-P4-20201209	460-224520-5	O-XYLENE (1,2-DIMETHYLBENZENE)	12/12/2020		Y	N	U		U	1.0	0.36	ug/l
MW-P4-20201209	460-224520-5	METHYLENE CHLORIDE	12/12/2020		Y	N	U		U	1.0	0.32	ug/l
MW-P4-20201209	460-224520-5	METHYLCYCLOHEXANE	12/12/2020		Y	N	U		U	1.0	0.71	ug/l
MW-P4-20201209	460-224520-5	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	12/12/2020		Y	N	U		U	5.0	1.3	ug/l
MW-P4-20201209	460-224520-5	METHYL ETHYL KETONE (2-BUTANONE)	12/12/2020		Y	N	U		U	5.0	1.9	ug/l
MW-P4-20201209	460-224520-5	METHYL ACETATE	12/12/2020		Y	N	U		U	5.0	0.79	ug/l
MW-P4-20201209	460-224520-5	TETRACHLOROETHYLENE(PCE)	12/12/2020	21	Y	Y				1.0	0.25	ug/l
MW-P4-20201209	460-224520-5	1,1-DICHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.26	ug/l
MW-P4-20201209	460-224520-5	BROMOMETHANE	12/12/2020		Y	N	U		U	1.0	0.55	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
MW-P4-20201209	460-224520-5	BROMOFORM	12/12/2020		Y	N	U		U	1.0	0.54	ug/l
MW-P4-20201209	460-224520-5	1,1,1-TRICHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.24	ug/l
MW-P4-20201209	460-224520-5	1,1,2,2-TETRACHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.37	ug/l
MW-P4-20201209	460-224520-5	1,1,2-TRICHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.20	ug/l
MW-P4-20201209	460-224520-5	1,1-DICHLOROETHENE	12/12/2020		Y	N	U		U	1.0	0.26	ug/l
MW-P4-20201209	460-224520-5	1,2,3-TRICHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.36	ug/l
MW-P4-20201209	460-224520-5	1,2,4-TRICHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.37	ug/l
MW-P4-20201209	460-224520-5	1,2-DIBROMO-3-CHLOROPROPANE	12/12/2020		Y	N	U	UJ	UJ	1.0	0.38	ug/l
MW-P4-20201209	460-224520-5	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	12/12/2020		Y	N	U		U	1.0	0.50	ug/l
MW-P4-20201209	460-224520-5	2-HEXANONE	12/12/2020		Y	N	U		U	5.0	1.1	ug/l
MW-P4-20201209	460-224520-5	BENZENE	12/12/2020		Y	N	U		U	1.0	0.20	ug/l
MW-P4-20201209	460-224520-5	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	12/12/2020		Y	N	U		U	1.0	0.31	ug/l
MW-P4-20201209	460-224520-5	BROMODICHLOROMETHANE	12/12/2020		Y	N	U		U	1.0	0.34	ug/l
MW-P4-20201209	460-224520-5	1,2-DICHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.21	ug/l
MW-P4-20201209	460-224520-5	ACETONE	12/12/2020		Y	N	U		U	5.0	4.4	ug/l
MW-P4-20201209	460-224520-5	1,4-DIOXANE (P-DIOXANE)	12/12/2020		Y	N	U		U	50	28	ug/l
MW-P4-20201209	460-224520-5	1,4-DICHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.33	ug/l
MW-P4-20201209	460-224520-5	1,3-DICHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.34	ug/l
MW-P4-20201209	460-224520-5	1,2-DICHLOROPROPANE	12/12/2020		Y	N	U		U	1.0	0.35	ug/l
MW-P4-20201209	460-224520-5	1,2-DICHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.43	ug/l
Trip Blank-20201209	460-224520-6	Isopropylbenzene (Cumene)	12/12/2020		Y	N	U		U	1.0	0.34	ug/l
Trip Blank-20201209	460-224520-6	TERT-BUTYL METHYL ETHER	12/12/2020		Y	N	U		U	1.0	0.22	ug/l
Trip Blank-20201209	460-224520-6	METHYLENE CHLORIDE	12/12/2020		Y	N	U		U	1.0	0.32	ug/l
Trip Blank-20201209	460-224520-6	O-XYLENE (1,2-DIMETHYLBENZENE)	12/12/2020		Y	N	U		U	1.0	0.36	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
Trip Blank-20201209	460-224520-6	STYRENE	12/12/2020		Y	N	U		U	1.0	0.42	ug/l
Trip Blank-20201209	460-224520-6	METHYLCYCLOHEXANE	12/12/2020		Y	N	U		U	1.0	0.71	ug/l
Trip Blank-20201209	460-224520-6	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	12/12/2020		Y	N	U		U	5.0	1.3	ug/l
Trip Blank-20201209	460-224520-6	METHYL ETHYL KETONE (2-BUTANONE)	12/12/2020		Y	N	U		U	5.0	1.9	ug/l
Trip Blank-20201209	460-224520-6	M,P-XYLENES	12/12/2020		Y	N	U		U	1.0	0.30	ug/l
Trip Blank-20201209	460-224520-6	TETRACHLOROETHYLENE(PCE)	12/12/2020		Y	N	U		U	1.0	0.25	ug/l
Trip Blank-20201209	460-224520-6	1,1-DICHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.26	ug/l
Trip Blank-20201209	460-224520-6	METHYL ACETATE	12/12/2020		Y	N	U		U	5.0	0.79	ug/l
Trip Blank-20201209	460-224520-6	TOLUENE	12/12/2020		Y	N	U		U	1.0	0.38	ug/l
Trip Blank-20201209	460-224520-6	TRANS-1,2-DICHLOROETHENE	12/12/2020		Y	N	U		U	1.0	0.24	ug/l
Trip Blank-20201209	460-224520-6	TRANS-1,3-DICHLOROPROPENE	12/12/2020		Y	N	U		U	1.0	0.22	ug/l
Trip Blank-20201209	460-224520-6	TRICHLOROETHYLENE (TCE)	12/12/2020		Y	N	U		U	1.0	0.31	ug/l
Trip Blank-20201209	460-224520-6	TRICHLOROFLUOROMETHANE	12/12/2020		Y	N	U		U	1.0	0.32	ug/l
Trip Blank-20201209	460-224520-6	1,2-DICHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.43	ug/l
Trip Blank-20201209	460-224520-6	1,2-DICHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.21	ug/l
Trip Blank-20201209	460-224520-6	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	12/12/2020		Y	N	U		U	1.0	0.50	ug/l
Trip Blank-20201209	460-224520-6	1,2-DIBROMO-3-CHLOROPROPANE	12/12/2020		Y	N	U	UJ	UJ	1.0	0.38	ug/l
Trip Blank-20201209	460-224520-6	ETHYLBENZENE	12/12/2020		Y	N	U		U	1.0	0.30	ug/l
Trip Blank-20201209	460-224520-6	1,1-DICHLOROETHENE	12/12/2020		Y	N	U		U	1.0	0.26	ug/l
Trip Blank-20201209	460-224520-6	CARBON DISULFIDE	12/12/2020		Y	N	U		U	1.0	0.82	ug/l
Trip Blank-20201209	460-224520-6	1,1,2-TRICHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.20	ug/l
Trip Blank-20201209	460-224520-6	VINYL CHLORIDE	12/12/2020		Y	N	U		U	1.0	0.17	ug/l
Trip Blank-20201209	460-224520-6	1,2,3-TRICHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.36	ug/l

SDG: 4602245201

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
Trip Blank-20201209	460-224520-6	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	12/12/2020		Y	N	U		U	1.0	0.31	ug/l
Trip Blank-20201209	460-224520-6	1,2-DICHLOROPROPANE	12/12/2020		Y	N	U		U	1.0	0.35	ug/l
Trip Blank-20201209	460-224520-6	1,3-DICHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.34	ug/l
Trip Blank-20201209	460-224520-6	1,4-DICHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.33	ug/l
Trip Blank-20201209	460-224520-6	1,4-DIOXANE (P-DIOXANE)	12/12/2020		Y	N	U		U	50	28	ug/l
Trip Blank-20201209	460-224520-6	2-HEXANONE	12/12/2020		Y	N	U		U	5.0	1.1	ug/l
Trip Blank-20201209	460-224520-6	ACETONE	12/12/2020		Y	N	U		U	5.0	4.4	ug/l
Trip Blank-20201209	460-224520-6	1,2,4-TRICHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.37	ug/l
Trip Blank-20201209	460-224520-6	BENZENE	12/12/2020		Y	N	U		U	1.0	0.20	ug/l
Trip Blank-20201209	460-224520-6	CHLOROBENZENE	12/12/2020		Y	N	U		U	1.0	0.38	ug/l
Trip Blank-20201209	460-224520-6	1,1,2,2-TETRACHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.37	ug/l
Trip Blank-20201209	460-224520-6	DICHLORODIFLUOROMETHANE	12/12/2020		Y	N	U	UJ	UJ	1.0	0.31	ug/l
Trip Blank-20201209	460-224520-6	BROMOCHLOROMETHANE	12/12/2020		Y	N	U		U	1.0	0.41	ug/l
Trip Blank-20201209	460-224520-6	CHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.32	ug/l
Trip Blank-20201209	460-224520-6	DIBROMOCHLOROMETHANE	12/12/2020		Y	N	U		U	1.0	0.28	ug/l
Trip Blank-20201209	460-224520-6	CYCLOHEXANE	12/12/2020		Y	N	U		U	1.0	0.32	ug/l
Trip Blank-20201209	460-224520-6	CIS-1,3-DICHLOROPROPENE	12/12/2020		Y	N	U		U	1.0	0.22	ug/l
Trip Blank-20201209	460-224520-6	Cis-1,2-Dichloroethylene	12/12/2020		Y	N	U		U	1.0	0.22	ug/l
Trip Blank-20201209	460-224520-6	CHLOROMETHANE	12/12/2020		Y	N	U		U	1.0	0.40	ug/l
Trip Blank-20201209	460-224520-6	1,1,1-TRICHLOROETHANE	12/12/2020		Y	N	U		U	1.0	0.24	ug/l
Trip Blank-20201209	460-224520-6	CHLOROFORM	12/12/2020		Y	N	U		U	1.0	0.33	ug/l
Trip Blank-20201209	460-224520-6	BROMODICHLOROMETHANE	12/12/2020		Y	N	U		U	1.0	0.34	ug/l
Trip Blank-20201209	460-224520-6	CARBON TETRACHLORIDE	12/12/2020		Y	N	U		U	1.0	0.21	ug/l
Trip Blank-20201209	460-224520-6	BROMOMETHANE	12/12/2020		Y	N	U		U	1.0	0.55	ug/l

SDG: 4602245201

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
Trip Blank-20201209	460-224520-6	BROMOFORM	12/12/2020		Y	N	U		U	1.0	0.54	ug/l

Analytical Method SW8270E-SIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EB20201209-20201209	460-224520-1	1,4-DIOXANE (P-DIOXANE)	12/12/2020		Y	N	U		U	0.20	0.016	ug/l
FB20201209-20201209	460-224520-2	1,4-DIOXANE (P-DIOXANE)	12/12/2020		Y	N	U		U	0.20	0.016	ug/l
DUP20201209-20201209	460-224520-3	1,4-DIOXANE (P-DIOXANE)	12/12/2020		Y	N	U		U	0.20	0.016	ug/l
MW-P3-20201209	460-224520-4	1,4-DIOXANE (P-DIOXANE)	12/12/2020		Y	N	U		U	0.20	0.016	ug/l
MW-P4-20201209	460-224520-5	1,4-DIOXANE (P-DIOXANE)	12/12/2020		Y	N	U		U	0.20	0.016	ug/l

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

GEI Consultants
110 Walt Whitman Road, Suite 204
Huntington Station, NY 11746
ATTN: Mr. Bill Fitchett
Wfitchett@geiconsultants.com

March 24, 2021

SUBJECT: Long Island City, 30th Street, Data Usability Summary Report.

Dear Mr. Fitchett,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on March 3, 2021. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #50574:

SDG #	Fraction
200-56563-1, 460-226279-1	Volatiles, Perfluoroalkyl & Polyfluoroalkyl Substances

The data validation was performed under modified Category B guidelines using quality control summaries provided by the laboratory. The analyses were validated using the following documents, as applicable to each method:

- USEPA Region 2 Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-Method 8260B and 8260C, SOP HW-24, Revision 4; October 2014
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, EPA 540-R-2017-002; January 2017
- Guidelines for Sampling and Analysis of PFAS under NYSDEC's Part 375 Remedial Programs; January 2021
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Christina Rink

Christina Rink
crink@lab-data.com
Project Manager/Senior Chemist

58 pages-ADV EQUIS EDD/ NYDUSR Attachment 1

Category B **LDC #50574 (GEI Consultants, Inc. - Huntington Station, NY / 30th Street, Long Island City, Site No. C241214)**

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260D)		PFAs (537M)																													
Matrix: Water/Soil				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	200-56563-1	03/03/21	03/24/21	-	-	4	0																												
B	460-226279-1	03/03/21	03/24/21	2	3	-	-																												
Total	T/CR			2	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9

Shaded cells indicate Category B validation (all other cells are Category A validation). These sample counts do not include MS/MSD, and DUPs

Site: Long Island City, 30th Street
Laboratory: Eurofins
Report No.: 200-56563-1
Reviewer: Stella Cuenco and Christina Rink/Laboratory Data Consultants for GEI Consultants, Inc. – Huntington Station, NY
Date: March 22, 2021

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
MW-P1	200-56563-1	PFAS
MW-P2	200-56563-2	PFAS
EB20201215	200-56563-3	PFAS
FB20201214	200-56563-4	PFAS
MW-P2MS	200-56563-2MS	PFAS
MW-P2MSD	200-56563-2MSD	PFAS

Associated QC Samples(s):
Field/Trip Blanks: EB20201215, FB20201214
Field Duplicate pair: None Associated

The above-listed water samples were collected on December 14 through December 15, 2020 and were analyzed for perfluoroalkyl and polyfluoroalkyl substances (PFAS) by method 537 modified. The data validation was performed in accordance with the USEPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,* EPA 540-R-2017-002 (January 2017), and the Guidelines for Sampling and Analysis of PFAS under NYSDEC's Part 375 Remedial Programs (January 2021), modified as necessary to accommodate the non-CLP methodologies used.

The organic data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Liquid Chromatography/Mass Spectrometry (LC/MS) Tunes
- Initial and Continuing Calibrations
- Blanks
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Control Sample (LCS) Results
- Labeled Compounds
- Field Duplicate Results
- Quantitation Limits and Data Assessment
- Sample Quantitation and Compound Identification

Overall Evaluation of Data and Potential Usability Issues

All results are usable as reported or usable with minor qualification due to laboratory quality control outliers.

The validation findings were based on the following information.

Data Completeness

The data package was complete as defined under the requirements for the NYSDEC ASP category B laboratory deliverables.

Holding Times and Sample Preservation

All criteria were met.

LC/MS Tunes

All criteria were met.

Initial and Continuing Calibrations

All criteria were met.

Blanks

Contamination was not detected in the method blanks.

No positive results were found in the equipment blank sample EB20201215 and field blank sample FB20201214 for PFAS analysis.

MS/MSD Results

MS/MSD analyses were performed on sample MW-P2 for PFAS analysis. All criteria were met.

LCS Results

All criteria were met.

Labeled Compounds

All criteria were met.

Field Duplicate Results

A field duplicate pair was not associated with this sample set. Validation action was not required on this basis.

Quantitation Limits and Data Assessment

No results were reported below the reporting limit (RL) and above the method detection limit (MDL) in the PFAS analysis.

Dilutions were not required for PFAS analysis.

Sample Quantitation and Compound Identification

Calculations were spot-checked; no discrepancies were noted.

The following table lists target compound identifications that did not meet validation criteria and the resulting validating actions.

Sample	Compound	Ion Ratio (Limits)	Validation Action
MW-P1	Perfluorooctanesulfonic acid	13.21 (3.47-10.42)	J detects

The perfluorooctanesulfonic acid result was estimated due to ion ratio exceedance. The bias cannot be determined. The result can be used for project objectives as an estimated value (J) which may have a minor impact on the data usability.

DATA VALIDATION QUALIFIERS

U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.

J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.

JN - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.

R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

LDC #: 50574A96 **VALIDATION COMPLETENESS WORKSHEET** Date: 3/17/21
SDG #: 200-56563-1 Category B Page: 1 of 1
Laboratory: Eurofins Reviewer: JC
2nd Reviewer:

METHOD: LC/MS Perfluoroalkyl and Polyfluoroalkyl Substances (EPA Method 537M)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	LC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / A	r² TV≤30/30 IV≤30
IV.	Continuing calibration/ISC	A / A	D≤30 ISC≤50
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	N	
X.	Labeled Compounds	A	
VI.	Compound quantitation RL/LOQ/LODs	A	
XII.	Target compound identification	SW	
XIII.	System performance	A	
XIV.	Overall assessment of data	A	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
SW = See worksheet FB = Field blank EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	MW-P1	200-56563-1	Water	12/15/20
2	MW-P2	200-56563-2	Water	12/15/20
3	EB20201215	200-56563-3	Water	12/15/20
4	FB20201214	200-56563-4	Water	12/14/20
5	MW-P2MS	200-56563-2MS	Water	12/15/20
6	MW-P2MSD	200-56563-2MSD	Water	12/15/20
7				
8				
9				
10				

Notes:

	10z99						

LDC #: 50574A96 **VALIDATION FINDINGS CHECKLIST** Page: 1 of 2
Reviewer: JR

Method: LC/MS PFAS (EPA Method 537Mod)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	√			
Were cooler temperature criteria met?	√			
II. LC/MS Instrument performance check				
Were the instrument performance reviewed and found to be within the validation criteria?	√			
III. Initial calibration and Initial Calibration Verification				
Did the laboratory perform a 5-point calibration prior to sample analysis?	√			
Were all percent relative standard deviations (%RSD) ≤ 20%?			√	
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit criteria of ≥ 0.990?	√			
Were all analytes within 70-130% or percent differences (%D) ≤30% of their true value for each calibration standard except the lowest point (50-150%)?	√			
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	√			
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	√			
Were all percent differences (%D) ≤ 30%?	√			
IV. Continuing calibration and Instrument Sensitivity Check				
Was a continuing calibration analyzed prior to sample analysis, after every 10 samples and at the end of the analytical sequence?	√			
Were all percent differences (%D) of the continuing calibration ≤ 30%?	√			
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	√			
Were all percent differences (%D) of the Instrument Sensitivity Check ≤ 50%?	√			
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	√			
Was a laboratory blank analyzed for each matrix and concentration?	√			
Was there contamination in the laboratory blanks?		√		
VI. Field blanks				
Were field blanks identified in this SDG?	√			
Were target compounds detected in the field blanks?		√		
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?	√			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		√		

LDC #: 50574A96

VALIDATION FINDINGS CHECKLIST

Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed per extraction batch for this SDG?	√			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	√			
X. Field duplicates				
Were field duplicate pairs identified in this SDG?		√		
Were target compounds detected in the field duplicates?			√	
XI. Labeled compounds				
Were labeled compound percent recoveries (%R) within the QC limits?	√			
XII. Compound quantitation				
Did the laboratory reporting limits (RL) meet the QAPP RLs?			√	
Did reported results include both branched and linear isomers?	√			
Were the correct ion transition, labeled compound and relative response factor (RRF) used to quantitate the compound?	√			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	√			
XIII. Target compound identification				
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	√			
Were two transitions and the ion transition ratio per analyte monitored and documented except for PFBA and PFPeA?	√			
Were ion ratios within QC limits?		√		
XIV. System performance				
System performance was found to be acceptable.	√			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	√			

TARGET COMPOUND WORKSHEET

METHOD: PFAS

A. Perfluorobutanoic acid (PFBA)	X. 8:2 FTS	
B. Perfluoropentanoic acis (PFPeA)	Y. 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	
C. Perfluorohexanoic acid (PFHxA)	Z. HFPO-DA (GenX)	
D. Perfluoroheptanoic acid (PFHpA)	AA. F-53B Major	
E. Perfluorooctanoic acid (PFOA)	BB. F-53B Minor	
F. Perfluorononanoic acid (PFNA)		
G. Perfluorodecanoic acid (PFDA)		
H. Perfluoroundecanoic acid (PFUnA)		
I. Perfluorododecanoic acid (PFDoA)		
J. Perfluorotridecanoic acid (PFTriA)		
K. Perfluorotetradecanoic acid (PFTeA)		
L. Perfluorobutanesulfonic acid (PFBS)		
M. Perfluoropentanesulfonic acid (PFPeS)		
N. Perfluorohexanesulfonic acid (PFHxS)		
O. Perfluoroheptanesulfonic acid (PFHpS)		
P. Perfluorooctanesulfonic acid (PFOS)		
Q. Perfluorononanesulfonic acid (PFNS)		
R. Perfluorodecanesulfonic acid (PFDS)		
S. Perfluorooctanesulfonamide (FOSA)		
T. N-Methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)		
U. N-Ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)		
V. 4:2 FTS		
W. 6:2 FTS		

LDC #: 50574A96

VALIDATION FINDINGS WORKSHEET
Target Compound Identification

Page: 1 of 1
Reviewer: JR

METHOD: LC/MS PFAS (EPA Method 537M)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was the signal to noise (S/N) ratio for all compounds within the validation criteria?
Y N N/A Were two transitions and the ion transition ratio per analyte monitored and documented with the exception of PFBA and PFPeA?
Y N N/A Were ion ratios within QC limits?

#	Date	Sample ID	Compound	Ion ratio (Limits)	Qualifications
		1	P	13.21 (3.47-10.42)	J (+) P

LDC #: 52574A96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Method: LC/MS PFAS (EPA Method 537M)

Calibration Date	Analyte	Standard	(X) Concentration ratio	(Y) Area ratio
12/18/2020 LC812	PFOA	1	0.040	0.0641474
		2	0.080	0.0912438
		3	0.400	0.4447472
		4	0.800	0.8970377
		5	2.000	2.1920949
		6	8.000	8.4765399

Linear through the origin

	Calculated	Reported
Constant	-0.0318	0.0221
X Coefficient(s)	1.0569	1.0653
Coefficient of Determination (r^2)	0.9999	1.0000

Calibration Date	Analyte	Standard	(X) Concentration ratio	(Y) Area ratio
12/18/2020	PFOS	1	0.039	0.0600827
		2	0.078	0.0977762
		3	0.388	0.4205802
		4	0.777	0.8814432
		5	1.941	2.1972727
		6	7.766	8.0082743

Linear through the origin

	Calculated	Reported
Constant	-0.0594	0.0245
X Coefficient(s)	1.0277	1.0504
Coefficient of Determination (r^2)	0.9994	0.9990

LDC #: 50574A96

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Method: LC/MS PFAS (EPA Method 537M)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	True Conc	Reported Conc	Recalculated Conc	Reported %D	Recalculated %D
1	PA201218A13	12/18/2020	PFOA (13C4-PFOA)	1.000	0.980	0.975	2.0	2.5
			PFOS (13C4-PFOS)	0.928	0.977	0.977	5.3	5.2
2			PFOA (13C8-PFOA)					
			PFOS (13C8-PFOS)					
3			PFOA (13C8-PFOA)					
			PFOS (13C8-PFOS)					
4			PFOA (13C8-PFOA)					
			PFOS (13C8-PFOS)					
5			PFOA (13C8-PFOA)					
			PFOS (13C8-PFOS)					

LDC # 50574A96

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: SC

Method: LC/MS PFAS (EPA Method 537M)

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

SSC = (Area spike) (Conc IS) / (Area IS) (average RRF spike)

%Recovery = 100 * (SSC - SC)/SA

Where: SSC = Spiked concentration, SA = Spike added, SC = Sample concentration

RPD = | MS - MSD | * 2/(MS + MSD)

MS = Matrix spike recovery, MSD = Matrix spike duplicate recovery

MS/MSD ID: 5/6

Compound	SA (ng/L)		SC (ng/L)	SSC (ng/L)		MS Percent Recovery		MSD Percent Recovery		MS/MSD RPD	
	MS	MSD		MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
PFOA	37.7	37.8	49.3	76.02	78.92	71	71	79	78	4	4
PFOS	35.0	35.1	2.89	37.52	33.86	99	99	88	88	10	10

LDC #50714A9v

VALIDATION FINDINGS WORKSHEET
LCS Results Verification

Reviewer: SC

Method: LC/MS PFAS (EPA Method 537M)

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control duplicate were recalculated for the compounds identified below using the following calculation:

SSC = (Area spike) (Conc IS) / (Area IS) (average RRF spike)
%Recovery = 100 * SSC/SA

Where:
SSC = Spiked concentration
SA = Spike added
LCS = Laboratory control spike recovery
LCSD = Laboratory control spike duplicate recovery

RPD = | LCS - LCSD | * 2/(LCS + LCSD)

LCS/LCSD ID: LCS 200-162199/2-A

Compound	SA (ng/L)		SSC (ng/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
PFOA	40.0		35.49		89	89				
PFOS	37.1		34.91		94	94				

LDC #: 50574A96

VALIDATION FINDINGS WORKSHEET
Sample Results Verification

Reviewer: SC

Method: LC/MS PFAS (EPA Method 537M)

Compound results for all Level IV samples reported with a positive detect were recalculated and verified using the following equation:

$$\text{Concentration} = \frac{(Ax)\,(Cis)\,(Vt)\,(Df)}{(Ais)\,(RRF)\,(Vo)}$$

Where:

Ax = Area or height of the peak for the compound to be measured
Ais = Area or height of the peak for the internal standard
Cis = Concentration of the internal standard
DF = Dilution factor
Vt = Volume of extract in milliliters (mL)
RRF = Average relative response factor
Vo = Volume of sample in milliliters (mL)
%S = Percent solids

Sample #	Compound	Ax	Ais	Cis (ng/mL)	DF	RRF	Vt (mL)	Vo (mL)	%S	Calculated Concentration (ng/L)	Reported Concentration (ng/L)	% Diff
1	PFOA	457028	464996	1.25	1	curve	10	276.6		40.8	40.9	
							271.72 grams extracted					
						m =1.0653						
						b = 0.0221						

Long Island City, 30th Street - LDC# 50574A

SDG: 200565631

Analytical Method E537(M)

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EB20201215	200-56563-3	Perfluorooctane Sulfonamide (FOSA)	12/18/2020		Y	N	U		U	1.68	0.48	ng/l
EB20201215	200-56563-3	1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	12/18/2020		Y	N	U		U	1.68	0.55	ng/l
EB20201215	200-56563-3	PERFLUOROTRIDECANOIC ACID (PFTriA)	12/18/2020		Y	N	U		U	1.68	0.36	ng/l
EB20201215	200-56563-3	PERFLUOROTETRADECANOIC ACID (PFTeA)	12/18/2020		Y	N	U		U	1.68	0.50	ng/l
EB20201215	200-56563-3	PERFLUOROPENTANOIC ACID (PFPeA)	12/18/2020		Y	N	U		U	1.68	0.91	ng/l
EB20201215	200-56563-3	PERFLUOROOCTANE SULFONIC ACID	12/18/2020		Y	N	U		U	1.68	0.73	ng/l
EB20201215	200-56563-3	PERFLUOROUNDECANOIC ACID (PFUnA)	12/18/2020		Y	N	U		U	1.68	0.61	ng/l
EB20201215	200-56563-3	PERFLUORONONANOIC ACID	12/18/2020		Y	N	U		U	1.68	0.49	ng/l
EB20201215	200-56563-3	PERFLUOROHEXANOIC ACID (PFHxA)	12/18/2020		Y	N	U		U	1.68	0.70	ng/l
EB20201215	200-56563-3	PERFLUOROHEXANESULFONIC ACID	12/18/2020		Y	N	U		U	1.68	0.56	ng/l
EB20201215	200-56563-3	2-(N-methyl perfluorooctanesulfonamido) acetic acid	12/18/2020		Y	N	U		U	4.20	0.66	ng/l
EB20201215	200-56563-3	Perfluorooctanoic acid (PFOA)	12/18/2020		Y	N	U		U	1.68	0.82	ng/l
EB20201215	200-56563-3	1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	12/18/2020		Y	N	U		U	4.20	0.61	ng/l
EB20201215	200-56563-3	Perfluoroheptanoic Acid (PFHpA)	12/18/2020		Y	N	U		U	1.68	0.39	ng/l
EB20201215	200-56563-3	N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine	12/18/2020		Y	N	U		U	4.20	0.78	ng/l
EB20201215	200-56563-3	PERFLUOROBUTANESULFONIC ACID	12/18/2020		Y	N	U		U	1.68	0.53	ng/l
EB20201215	200-56563-3	PERFLUOROBUTYRIC ACID (PFBA)	12/18/2020		Y	N	U		U	4.20	0.95	ng/l
EB20201215	200-56563-3	PERFLUORODECANE SULFONIC ACID	12/18/2020		Y	N	U		U	1.68	0.40	ng/l
EB20201215	200-56563-3	PERFLUORODECANOIC ACID (PFDA)	12/18/2020		Y	N	U		U	1.68	0.39	ng/l
EB20201215	200-56563-3	PERFLUORODODECANOIC ACID (PFDoA)	12/18/2020		Y	N	U		U	1.68	0.39	ng/l
EB20201215	200-56563-3	PERFLUOROHEPTANE SULFONATE (PFHpS)	12/18/2020		Y	N	U		U	1.68	0.33	ng/l
FB20201214	200-56563-4	Perfluoroheptanoic Acid (PFHpA)	12/18/2020		Y	N	U		U	1.71	0.39	ng/l
FB20201214	200-56563-4	PERFLUOROPENTANOIC ACID (PFPeA)	12/18/2020		Y	N	U		U	1.71	0.92	ng/l

SDG: 200565631

Analytical Method E537(M)

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
FB20201214	200-56563-4	Perfluorooctanoic acid (PFOA)	12/18/2020		Y	N	U		U	1.71	0.84	ng/l
FB20201214	200-56563-4	PERFLUOROOCTANE SULFONIC ACID	12/18/2020		Y	N	U		U	1.71	0.74	ng/l
FB20201214	200-56563-4	Perfluorooctane Sulfonamide (FOSA)	12/18/2020		Y	N	U		U	1.71	0.49	ng/l
FB20201214	200-56563-4	PERFLUORONONANOIC ACID	12/18/2020		Y	N	U		U	1.71	0.50	ng/l
FB20201214	200-56563-4	PERFLUOROHEXANOIC ACID (PFHxA)	12/18/2020		Y	N	U		U	1.71	0.71	ng/l
FB20201214	200-56563-4	PERFLUOROHEXANESULFONIC ACID	12/18/2020		Y	N	U		U	1.71	0.57	ng/l
FB20201214	200-56563-4	PERFLUOROTETRADECANOIC ACID (PFTeA)	12/18/2020		Y	N	U		U	1.71	0.50	ng/l
FB20201214	200-56563-4	PERFLUOROHEPTANE SULFONATE (PFHpS)	12/18/2020		Y	N	U		U	1.71	0.33	ng/l
FB20201214	200-56563-4	PERFLUORODODECANOIC ACID (PFDoA)	12/18/2020		Y	N	U		U	1.71	0.39	ng/l
FB20201214	200-56563-4	PERFLUORODECANOIC ACID (PFDA)	12/18/2020		Y	N	U		U	1.71	0.39	ng/l
FB20201214	200-56563-4	PERFLUORODECANE SULFONIC ACID	12/18/2020		Y	N	U		U	1.71	0.41	ng/l
FB20201214	200-56563-4	PERFLUOROBUTYRIC ACID (PFBA)	12/18/2020		Y	N	U		U	4.27	0.97	ng/l
FB20201214	200-56563-4	PERFLUOROBUTANESULFONIC ACID	12/18/2020		Y	N	U		U	1.71	0.54	ng/l
FB20201214	200-56563-4	N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine	12/18/2020		Y	N	U		U	4.27	0.79	ng/l
FB20201214	200-56563-4	2-(N-methyl perfluorooctanesulfonamido) acetic acid	12/18/2020		Y	N	U		U	4.27	0.67	ng/l
FB20201214	200-56563-4	PERFLUOROTRIDECANOIC ACID (PFTriA)	12/18/2020		Y	N	U		U	1.71	0.37	ng/l
FB20201214	200-56563-4	1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	12/18/2020		Y	N	U		U	1.71	0.56	ng/l
FB20201214	200-56563-4	PERFLUOROUNDECANOIC ACID (PFUnA)	12/18/2020		Y	N	U		U	1.71	0.62	ng/l
FB20201214	200-56563-4	1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	12/18/2020		Y	N	U		U	4.27	0.62	ng/l
MW-P1	200-56563-1	Perfluorooctane Sulfonamide (FOSA)	12/18/2020		Y	N	U		U	1.81	0.52	ng/l
MW-P1	200-56563-1	1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	12/18/2020		Y	N	U		U	1.81	0.60	ng/l
MW-P1	200-56563-1	PERFLUOROTRIDECANOIC ACID (PFTriA)	12/18/2020		Y	N	U		U	1.81	0.39	ng/l
MW-P1	200-56563-1	PERFLUOROTETRADECANOIC ACID (PFTeA)	12/18/2020		Y	N	U		U	1.81	0.53	ng/l
MW-P1	200-56563-1	PERFLUOROPENTANOIC ACID (PFPeA)	12/18/2020	75.2	Y	Y				1.81	0.98	ng/l
MW-P1	200-56563-1	PERFLUOROOCTANE SULFONIC ACID	12/18/2020	9.28	Y	Y		J	J	1.81	0.79	ng/l

SDG: 200565631

Analytical Method E537(M)

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
MW-P1	200-56563-1	PERFLUOROUNDECANOIC ACID (PFUnA)	12/18/2020		Y	N	U		U	1.81	0.66	ng/l
MW-P1	200-56563-1	PERFLURONONANOIC ACID	12/18/2020	0.89	Y	Y	J		J	1.81	0.52	ng/l
MW-P1	200-56563-1	PERFLUOROHEXANOIC ACID (PFHxA)	12/18/2020	53.9	Y	Y				1.81	0.75	ng/l
MW-P1	200-56563-1	PERFLUOROHEXANESULFONIC ACID	12/18/2020	18.0	Y	Y				1.81	0.61	ng/l
MW-P1	200-56563-1	2-(N-methyl perfluorooctanesulfonamido) acetic acid	12/18/2020		Y	N	U		U	4.52	0.71	ng/l
MW-P1	200-56563-1	PERFLUOROHEPTANE SULFONATE (PFHpS)	12/18/2020	0.94	Y	Y	J		J	1.81	0.35	ng/l
MW-P1	200-56563-1	PERFLUORODODECANOIC ACID (PFDoA)	12/18/2020		Y	N	U		U	1.81	0.42	ng/l
MW-P1	200-56563-1	PERFLUORODECANOIC ACID (PFDA)	12/18/2020		Y	N	U		U	1.81	0.42	ng/l
MW-P1	200-56563-1	PERFLUORODECANE SULFONIC ACID	12/18/2020		Y	N	U		U	1.81	0.43	ng/l
MW-P1	200-56563-1	PERFLUOROBUTYRIC ACID (PFBA)	12/18/2020	23.9	Y	Y				4.52	1.02	ng/l
MW-P1	200-56563-1	PERFLUOROBUTANESULFONIC ACID	12/18/2020	8.52	Y	Y				1.81	0.57	ng/l
MW-P1	200-56563-1	N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine	12/18/2020		Y	N	U		U	4.52	0.84	ng/l
MW-P1	200-56563-1	Perfluoroheptanoic Acid (PFHpA)	12/18/2020	51.1	Y	Y				1.81	0.42	ng/l
MW-P1	200-56563-1	Perfluorooctanoic acid (PFOA)	12/18/2020	40.9	Y	Y				1.81	0.89	ng/l
MW-P1	200-56563-1	1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	12/18/2020	3.09	Y	Y	J		J	4.52	0.65	ng/l
MW-P2	200-56563-2	PERFLUOROHEXANESULFONIC ACID	12/18/2020	4.47	Y	Y				1.86	0.62	ng/l
MW-P2	200-56563-2	PERFLUOROHEXANOIC ACID (PFHxA)	12/18/2020	15.1	Y	Y				1.86	0.77	ng/l
MW-P2	200-56563-2	PERFLURONONANOIC ACID	12/18/2020		Y	N	U		U	1.86	0.54	ng/l
MW-P2	200-56563-2	Perfluorooctane Sulfonamide (FOSA)	12/18/2020		Y	N	U		U	1.86	0.53	ng/l
MW-P2	200-56563-2	PERFLUOROOCTANE SULFONIC ACID	12/18/2020	2.89	Y	Y				1.86	0.81	ng/l
MW-P2	200-56563-2	Perfluorooctanoic acid (PFOA)	12/18/2020	49.3	Y	Y				1.86	0.91	ng/l
MW-P2	200-56563-2	PERFLUOROPENTANOIC ACID (PFPeA)	12/18/2020	19.8	Y	Y				1.86	1.00	ng/l
MW-P2	200-56563-2	PERFLUOROTRIDECANOIC ACID (PFTriA)	12/18/2020		Y	N	U		U	1.86	0.40	ng/l
MW-P2	200-56563-2	Perfluoroheptanoic Acid (PFHpA)	12/18/2020	14.7	Y	Y				1.86	0.43	ng/l
MW-P2	200-56563-2	PERFLUOROTETRADECANOIC ACID (PFTeA)	12/18/2020		Y	N	U		U	1.86	0.55	ng/l

SDG: 200565631

Analytical Method E537(M)

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
MW-P2	200-56563-2	PERFLUOROHEPTANE SULFONATE (PFHpS)	12/18/2020		Y	N	U		U	1.86	0.36	ng/l
MW-P2	200-56563-2	PERFLUORODODECANOIC ACID (PFDoA)	12/18/2020		Y	N	U		U	1.86	0.43	ng/l
MW-P2	200-56563-2	PERFLUORODECANOIC ACID (PFDA)	12/18/2020		Y	N	U		U	1.86	0.43	ng/l
MW-P2	200-56563-2	PERFLUORODECANE SULFONIC ACID	12/18/2020		Y	N	U		U	1.86	0.45	ng/l
MW-P2	200-56563-2	PERFLUOROBUTYRIC ACID (PFBA)	12/18/2020	35.7	Y	Y				4.64	1.05	ng/l
MW-P2	200-56563-2	PERFLUOROBUTANESULFONIC ACID	12/18/2020	4.67	Y	Y				1.86	0.58	ng/l
MW-P2	200-56563-2	N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine	12/18/2020		Y	N	U		U	4.64	0.86	ng/l
MW-P2	200-56563-2	2-(N-methyl perfluorooctanesulfonamido) acetic acid	12/18/2020		Y	N	U		U	4.64	0.73	ng/l
MW-P2	200-56563-2	1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	12/18/2020		Y	N	U		U	1.86	0.61	ng/l
MW-P2	200-56563-2	PERFLUOROUNDECANOIC ACID (PFUnA)	12/18/2020		Y	N	U		U	1.86	0.68	ng/l
MW-P2	200-56563-2	1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	12/18/2020		Y	N	U		U	4.64	0.67	ng/l

Site: Long Island City, 30th Street
Laboratory: Eurofins
Report No.: 460-226279-1
Reviewer: Josephine Go and Christina Rink/Laboratory Data Consultants for GEI Consultants, Inc. – Huntington Station, NY
Date: March 18, 2021

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
SW-7	460-226279-1	VOC
SW-10	460-226279-2	VOC
SW-X	460-226279-3	VOC
FB011121	460-226279-4	VOC
TB011121	460-226279-5	VOC
SW-7MS	460-226279-1MS	VOC
SW-7MSD	460-226279-1MSD	VOC

Associated QC Samples(s):
Field/Trip Blanks: FB011121, TB011121
Field Duplicate pair: SW-10 and SW-X

The above-listed soil and water samples were collected on January 11, 2021 and were analyzed for volatile organic compounds (VOCs) by SW-846 method 8260D. The data validation was performed in accordance with the USEPA Region 2 *Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-Method 8260B and 8260C,* SOP HW-24, Revision 4 (October 2014) and the USEPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,* EPA 540-R-2017-002 (January 2017), modified as necessary to accommodate the non-CLP methodologies used.

The organic data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) Tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Control Sample (LCS) Results
- Internal Standards
- Field Duplicate Results
- Moisture Content
- Quantitation Limits and Data Assessment
- Sample Quantitation and Compound Identification

Overall Evaluation of Data and Potential Usability Issues

All results are usable as reported or usable with minor qualification due to sample matrix or laboratory quality control outliers.

The validation findings were based on the following information.

Data Completeness

The data package was complete as defined under the requirements for the NYSDEC ASP category B laboratory deliverables.

Holding Times and Sample Preservation

All criteria were met.

GC/MS Tunes

All criteria were met.

Initial and Continuing Calibrations

Initial Calibration:

All criteria were met.

Continuing calibration:

Compounds that did not meet criteria are summarized in the following table.

Date	Standard ID	Compound	CC %D	Associated Samples		Validation Action
01/14/21	K21572	Bromoform	22.3	SW-7 SW-10 SW-X	XX	UJ nondetects

X = Initial calibration (IC) relative standard deviation (%RSD) > 20; estimate (J/UJ) positive and nondetect results.
XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ) positive and nondetect results.
SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.
+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The bromoform result was estimated due to continuing calibration exceedance. The bias cannot be determined. The result can be used for project objectives as nondetect with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Blanks

Contamination was not detected in the method blanks.

No positive results were found in the field blank sample FB011121 for VOC analysis.

Contamination was detected in the trip blank sample TB011121 for VOC analysis. The presence of blank contamination indicates that false positives may exist for these compounds in the associated samples. Action Levels (ALs) were established at <2x reporting limits (RL) (for common contaminants) and <RL (for other contaminants) of the concentrations detected. The following table summarizes the contamination detected.

Field Blank ID	Compound	Level Detected	Action Level	Associated Samples
TB011121	Acetone	6.2 ug/L	2xRL	SW-7 SW-10 SW-X FB011121

No samples were qualified since the associated sample results were nondetect.

Surrogate Recoveries

All criteria were met.

MS/MSD Results

MS/MSD analyses were performed on sample SW-7 for VOC analysis. The following table lists the MS/MSD percent recoveries (%R) outside of control limits in the VOC analysis and the resulting validation actions.

MS ID	Compound	MS %R (Limits)	MS/D %R (Limits)	Affected Sample	Validation Action
SW-7MS/MSD	1,2-Dichlorobenzene	-	74 (80-120)	SW-7	UJ nondetects
	1,3-Dichlorobenzene	-	75 (80-120)		UJ nondetects
	1,4-Dichlorobenzene	-	74 (80-120)		UJ nondetects
	Benzene	-	76 (80-123)		UJ nondetects
	m,p-Xylene	-	79 (80-120)		UJ nondetects
	o-Xylene	-	77 (80-120)		UJ nondetects
	Styrene	-	75 (80-120)		UJ nondetects
	Toluene	-	77 (80-120)		UJ nondetects

- Within control limits

The 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, benzene, m,p-xylene, o-xylene, styrene, and toluene results may be biased low due to low MS/MSD percent recoveries. The results can be used for project objectives as nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

LCS Results

All criteria were met.

Internal Standards

All criteria were met.

Field Duplicate Results

Samples SW-10 and SW-X were submitted as the field duplicate pair with this sample group. There were no detected results in the field duplicate pair for VOC.

Moisture Content

All criteria were met.

Quantitation Limits and Data Assessment

No results were reported below the reporting limit (RL) and above the method detection limit (MDL) in the VOC analysis.

Dilutions were not required for VOC analysis.

Sample Quantitation and Compound Identification

Calculations were spot-checked; no discrepancies were noted.

DATA VALIDATION QUALIFIERS

U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.

J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.

JN - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.

R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

LDC #: 50574A1a

SDG #: 460-226279-1

Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET

Category B

Date: 03/11/21

Page: 1 of 1

Reviewer: JV

2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A, A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A, A	ICAL ≤ 20% r ICV ≤ 30%
IV.	Continuing calibration	SW	CCV ≤ 20%
V.	Laboratory Blanks	A	*
VI.	Field blanks	SW	FB = 4 TB = 5
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	SW	
IX.	Laboratory control samples	A	LCS/D
X.	Field duplicates	ND	D = 2/3
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	no result < RL
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; * ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID		Lab ID	Matrix	Date
1	SW-7		460-226279-1	Soil	01/11/21
2	SW-10	D	460-226279-2	Soil	01/11/21
3	SW-X	D	460-226279-3	Soil	01/11/21
4	FB011121		460-226279-4	Water	01/11/21
5	TB011121		460-226279-5	Water	01/11/21
6	SW-7MS		460-226279-1MS	Soil	01/11/21
7	SW-7MSD		460-226279-1MSD	Soil	01/11/21
8					
9					

Notes:

-1	LB3 460-752663/1-A					
-1	MB 460-752668/8					
-1	" - 752388/7					

LDC #: 50574 A1a

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG

Method: Volatiles (EPA SW 846 Method 8260C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20% and relative response factors (RRF) within method criteria?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 30%?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 20% and relative response factors (RRF) within method criteria?		✓		
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks were identified in this SDG?	✓			
Were target compounds detected in the field blanks?	✓			
VII. Surrogate spikes				
Were all surrogate percent recovery (%R) within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		✓		

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
X. Field duplicates				
Were field duplicate pairs identified in this SDG?	✓			
Were target compounds detected in the field duplicates?		✓		
XI. Internal standards				
Were internal standard area counts within -50% to +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XII. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	AA. Tetrachloroethene	AAA. 1,3,5-Trimethylbenzene	AAAA. Ethyl tert-butyl ether	A1. 1,3-Butadiene	A2.
B. Bromomethane	BB. 1,1,2,2-Tetrachloroethane	BBB. 4-Chlorotoluene	BBBB. tert-Amyl methyl ether	B1. Hexane	B2.
C. Vinyl choride	CC. Toluene	CCC. tert-Butylbenzene	CCCC. 1-Chlorohexane	C1. Heptane	C2.
D. Chloroethane	DD. Chlorobenzene	DDD. 1,2,4-Trimethylbenzene	DDDD. Isopropyl alcohol	D1. Propylene	D2.
E. Methylene chloride	EE. Ethylbenzene	EEE. sec-Butylbenzene	EEEE. Acetonitrile	E1. Freon 11	E2.
F. Acetone	FF. Styrene	FFF. 1,3-Dichlorobenzene	FFFF. Acrolein	F1. Freon 12	F2.
G. Carbon disulfide	GG. Xylenes, total	GGG. p-Isopropyltoluene	GGGG. Acrylonitrile	G1. Freon 113	G2.
H. 1,1-Dichloroethene	HH. Vinyl acetate	HHH. 1,4-Dichlorobenzene	HHHH. 1,4-Dioxane	H1. Freon 114	H2.
I. 1,1-Dichloroethane	II. 2-Chloroethylvinyl ether	III. n-Butylbenzene	IIII. Isobutyl alcohol	I1. 2-Nitropropane	I2.
J. 1,2-Dichloroethene, total	JJ. Dichlorodifluoromethane	JJJ. 1,2-Dichlorobenzene	JJJJ. Methacrylonitrile	J1. Dimethyl disulfide	J2.
K. Chloroform	KK. Trichlorofluoromethane	KKK. 1,2,4-Trichlorobenzene	KKKK. Propionitrile	K1. 2,3-Dimethyl pentane	K2.
L. 1,2-Dichloroethane	LL. Methyl-tert-butyl ether	LLL. Hexachlorobutadiene	LLLL. Ethyl ether	L1. 2,4-Dimethyl pentane	L2.
M. 2-Butanone	MM. 1,2-Dibromo-3-chloropropane	MMM. Naphthalene	MMMM. Benzyl chloride	M1. 3,3-Dimethyl pentane	M2.
N. 1,1,1-Trichloroethane	NN. Methyl ethyl ketone	NNN. 1,2,3-Trichlorobenzene	NNNN. Iodomethane	N1. 2-Methylpentane	N2.
O. Carbon tetrachloride	OO. 2,2-Dichloropropane	OOO. 1,3,5-Trichlorobenzene	OOOO.1,1-Difluoroethane	O1. 3-Methylpentane	O2.
P. Bromodichloromethane	PP. Bromochloromethane	PPP. trans-1,2-Dichloroethene	PPPP. Tetrahydrofuran	P1. 3-Ethylpentane	P2.
Q. 1,2-Dichloropropane	QQ. 1,1-Dichloropropene	QQQ. cis-1,2-Dichloroethene	QQQQ. Methyl acetate	Q1. 2,2-Dimethylpentane	Q2.
R. cis-1,3-Dichloropropene	RR. Dibromomethane	RRR. m,p-Xylenes	RRRR. Ethyl acetate	R1. 2,2,3- Trimethylbutane	R2.
S. Trichloroethene	SS. 1,3-Dichloropropane	SSS. o-Xylene	SSSS. Cyclohexane	S1. 2,2,4-Trimethylpentane	S2.
T. Dibromochloromethane	TT. 1,2-Dibromoethane	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	TTTT. Methylcyclohexane	T1. 2-Methylhexane	T2.
U. 1,1,2-Trichloroethane	UU. 1,1,1,2-Tetrachloroethane	UUU. 1,2-Dichlorotetrafluoroethane	UUUU. Allyl chloride	U1. Nonanal	U2.
V. Benzene	VV. Isopropylbenzene	VVV. 4-Ethyltoluene	VVVV. Methyl methacrylate	V1. 2-Methylnaphthalene	V2.
W. trans-1,3-Dichloropropene	WW. Bromobenzene	WWW. Ethanol	WWWW. Ethyl methacrylate	W1. Methanol	W2.
X. Bromoform	XX. 1,2,3-Trichloropropane	XXX. Di-isopropyl ether	XXXX. cis-1,4-Dichloro-2-butene	X1. 1,2,3-Trimethylbenzene	X2.
Y. 4-Methyl-2-pentanone	YY. n-Propylbenzene	YYY. tert-Butanol	YYYY. trans-1,4-Dichloro-2-butene	Y1. 2-Propanol	Y2.
Z. 2-Hexanone	ZZ. 2-Chlorotoluene	ZZZ. tert-Butyl alcohol	ZZZZ. Pentachloroethane	Z1.	Z2.

LDC #: 50574 A1A

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Y N N/A Were percent differences (%D) ≤20 % and relative response factors (RRF) within the method criteria?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤20.0%)	Finding RRF (Limit)	Associated Samples	Qualifications
	01/24/21	K21572	X	22.3		1-3, 6, 7 LBS, MB1 (ND)	J/UJ/A

Note: * = Ave RRF failed method criteria but within validation criteria

LDC #: 50574A1a

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

(Y) N N/A Were field blanks identified in this SDG?
(Y) N N/A Were target compounds detected in the field blanks?
Blank units: ug/L **Associated sample units:** ug/kg
Sampling date: 01/11/21
Field blank type: (circle one) Field Blank / Rinsate / (Trip Blank) / Other: Associated Samples: All except 5 (ND)

Compound	Blank ID	Sample Identification								
	5									
F	6.2									

Blank units: **Associated sample units:**
Sampling date:
Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: Associated Samples:

Compound	Blank ID	Sample Identification								

Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

LDC #: 50574 A1a

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: JVG

METHOD : GC/MS VOA (EPA SW 846 Method 8260)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.

Y N N/A Was a MS/MSD analyzed every 20 samples of each matrix?

Y N N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	6/7	JJJ	( )	74 (80-120)	( )	1 (ND)	J/UJ/A
		FFF	( )	75 ( )	( )		
		HHH	( )	74 ( )	( )		
		V	( )	76 (80-123)	( )		
		RRR	( )	79 (80-120)	( )		
		SSS	( )	77 ( )	( )		
		FF	( )	75 ( )	( )		
		CC	( )	77 ( )	( )		
			( )	( )	( )		
		Note:	RPD's (not evaluated, spike amounts not comparable				
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		

LDC #: 50574A1a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound
S= Standard deviation of the RRFs

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 50 std)	Recalculated RRF (RRF 50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL CVOAMS15	12/29/2020	Acetone (BUT)	see r2 calc					
			cis-1,2-DCE (FBZ)	0.2939	0.2939	0.2983	0.2983	5.0	5.0
			1,4-Dioxane (DXE)	1.0454	1.0454	1.0367	1.0367	10.2	10.2
			Tetrachloroethene (CBZ)	0.4427	0.4427	0.4199	0.4199	5.5	5.5
			1,1,2,2-TCA (DCB)	0.8130	0.8130	0.8370	0.8370	6.2	6.2
2	ICAL CVOAMS9	12/15/2020	2-Butanone (BUT)	0.2538	0.2538	0.2691	0.2691	8.0	8.0
			cis-1,2-DCE (FBZ)	0.3821	0.3821	0.3709	0.3709	9.5	9.5
			1,4-Dioxane (DXE)	1.2474	1.2474	1.1057	1.1057	17.4	17.4
			Tetrachloroethene (CBZ)	0.3736	0.3736	0.3558	0.3558	5.9	5.9
			1,1,2,2-TCA (DCB)	1.0168	1.0168	0.9534	0.9534	5.4	5.4

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Method: (EPA SW 846 Method 8260D)

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Conc ratio	(X^2) Conc ratio
12/29/2020	CVOAMS15	Acetone	2.5	0.0107	0.01	0.00010
			5	0.0148	0.02	0.0004
		IS = 2-Butanone-d5	25	0.0668	0.10	0.0100
			100	0.2631	0.40	0.1600
			250	0.5992	1.00	1.0000
			1000	2.9489	4.00	16.0000
			2500	7.3283	10.00	100.0000

Regression Output	**Calculated**		***Reported WQR***	
Constant	*c*	*0.00000*	*c*	*0.00000*
R Squared		*0.9997156*		*0.99900*
	m1	*m2*	*m1*	*m2*
X Coefficient(s)	*7.19032E-01*	*1.4464E-03*	*7.19000E-01*	*5.7850E-06*
Correlation Coefficient		*0.999858*		
Coefficient of Determination (r^2)		*0.999716*		

LDC # 50574A1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260D)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound	(IS)	Average RRF (Initial)	Reported RRF (CCV)	Recalculated RRF (CCV)	Reported % D	Recalculated %D
1	T44312 CVOAMS15	1/13/2021	Acetone	(BUT)	100.0000	89.9583	89.9583	10.1	10.0
			cis-1,2-DCE	(FBZ)	0.2983	0.3270	0.3270	9.6	9.6
			1,4-Dioxane	(DXE)	1.0367	1.1970	1.1970	15.5	15.5
			Tetrachloroethene	(CBZ)	0.4199	0.4885	0.4885	16.3	16.3
			1,1,2,2-TCA	(DCB)	0.8370	0.8998	0.8998	7.5	7.5
2	K21572 CVOAMS9	1/14/2021	2-Butanone	(BUT)	0.2691	0.2617	0.2617	2.7	2.7
			cis-1,2-DCE	(FBZ)	0.3709	0.3806	0.3806	2.6	2.6
			1,4-Dioxane	(DXE)	1.1057	1.2443	1.2443	12.5	12.5
			Tetrachloroethene	(CBZ)	0.3558	0.3502	0.3502	1.6	1.6
			1,1,2,2-TCA	(DCB)	0.9534	0.8690	0.8690	8.9	8.9

LDC #: 30574 A1a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260~~B~~)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	50.0	56.3	113	113	9
1,2-Dichloroethane-d4		55.2	110	110	
Toluene-d8		49.6	99	99	
Bromofluorobenzene		54.7	109	109	

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 50574A1a

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA

Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentration

RPD = | MSC - MSC | * 2/(MSC + MSDC)

MSC = Matrix spike concentration; MSDC = Matrix spike duplicate concentration

MS/MSD sample: 6/7

Compound	Spike Added (mg/kg)		Sample Concentration (mg/kg)	Spiked Sample Concentration (mg/kg)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	------	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
1,1-Dichloroethene	0.0436	0.0286	0	0.0476	0.0257	109	109	88	88	61	21
Trichloroethene				0.0407	0.0236	93	93	83	83	53	11
Benzene				0.0384	0.0218	88	88	76	76	55	15
Toluene				0.0383	0.0220	88	88	77	77	54	13
Chlorobenzene	↓	↓	↓	0.0389	0.0227	89	89	80	80	53	11

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

RPD's recalc'd based on %R, spike amounts not comparable.

LDC #: 50574 A1a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: JVG

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration; SA = Spike added

RPD = | LCSC - LCSDC | * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: LCSD 460-752668/4,5

Compound	Spike Added (mg/kg)		Spiked Sample Concentration (mg/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
1,1-Dichloroethene	0.0200	0.0200	0.0185	0.0202	92	93	101	101	9	9
Trichloroethene			0.0168	0.0169	84	84	84	84	1	1
Benzene			0.0179	0.0181	89	89	90	90	1	1
Toluene			0.0179	0.0179	89	89	89	89	0	0
Chlorobenzene	↓	↓	0.0186	0.0190	93	93	95	95	2	2

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 50574A1a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The concentration of the sample was calculated for the compound identified below using the following calculation:

$$\text{Concentration} = \frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 5, Acetone

$y =$

~~Conc.~~ $\frac{(2904)}{(42728)} = 0.719x + 5.785e\text{-}6x^2$

$x = 0.02482$

final conc. $= (0.02482)(250)$

$= 6.2$ ug/L

#	Sample ID	Compound	Reported Concentration (ug/L)	Calculated Concentration (ug/L)	Qualification
	5	Acetone	6.2	6.2	-

Long Island City, 30th Street - LDC# 50574B

SDG: 4602262791

Analytical Method SW8260

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
FB011121	460-226279-4	METHYLENE CHLORIDE	1/13/2021		Y	N	U		U	1.0	0.32	ug/l
FB011121	460-226279-4	CHLOROFORM	1/13/2021		Y	N	U		U	1.0	0.33	ug/l
FB011121	460-226279-4	CHLOROMETHANE	1/13/2021		Y	N	U		U	1.0	0.40	ug/l
FB011121	460-226279-4	Cis-1,2-Dichloroethylene	1/13/2021		Y	N	U		U	1.0	0.22	ug/l
FB011121	460-226279-4	CIS-1,3-DICHLOROPROPENE	1/13/2021		Y	N	U		U	1.0	0.22	ug/l
FB011121	460-226279-4	CYCLOHEXANE	1/13/2021		Y	N	U		U	1.0	0.32	ug/l
FB011121	460-226279-4	DIBROMOCHLOROMETHANE	1/13/2021		Y	N	U		U	1.0	0.28	ug/l
FB011121	460-226279-4	DICHLORODIFLUOROMETHANE	1/13/2021		Y	N	U		U	1.0	0.31	ug/l
FB011121	460-226279-4	ETHYLBENZENE	1/13/2021		Y	N	U		U	1.0	0.30	ug/l
FB011121	460-226279-4	Isopropylbenzene (Cumene)	1/13/2021		Y	N	U		U	1.0	0.34	ug/l
FB011121	460-226279-4	M,P-XYLENES	1/13/2021		Y	N	U		U	1.0	0.30	ug/l
FB011121	460-226279-4	CHLOROETHANE	1/13/2021		Y	N	U		U	1.0	0.32	ug/l
FB011121	460-226279-4	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	1/13/2021		Y	N	U		U	5.0	1.3	ug/l
FB011121	460-226279-4	METHYL ETHYL KETONE (2-BUTANONE)	1/13/2021		Y	N	U		U	5.0	1.9	ug/l
FB011121	460-226279-4	O-XYLENE (1,2-DIMETHYLBENZENE)	1/13/2021		Y	N	U		U	1.0	0.36	ug/l
FB011121	460-226279-4	STYRENE	1/13/2021		Y	N	U		U	1.0	0.42	ug/l
FB011121	460-226279-4	TERT-BUTYL METHYL ETHER	1/13/2021		Y	N	U		U	1.0	0.22	ug/l
FB011121	460-226279-4	TETRACHLOROETHYLENE(PCE)	1/13/2021		Y	N	U		U	1.0	0.25	ug/l
FB011121	460-226279-4	TOLUENE	1/13/2021		Y	N	U		U	1.0	0.38	ug/l
FB011121	460-226279-4	TRANS-1,2-DICHLOROETHENE	1/13/2021		Y	N	U		U	1.0	0.24	ug/l
FB011121	460-226279-4	TRANS-1,3-DICHLOROPROPENE	1/13/2021		Y	N	U		U	1.0	0.22	ug/l
FB011121	460-226279-4	TRICHLOROETHYLENE (TCE)	1/13/2021		Y	N	U		U	1.0	0.31	ug/l
FB011121	460-226279-4	TRICHLOROFLUOROMETHANE	1/13/2021		Y	N	U		U	1.0	0.32	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
FB011121	460-226279-4	VINYL CHLORIDE	1/13/2021		Y	N	U		U	1.0	0.17	ug/l
FB011121	460-226279-4	1,1,1-TRICHLOROETHANE	1/13/2021		Y	N	U		U	1.0	0.24	ug/l
FB011121	460-226279-4	METHYL ACETATE	1/13/2021		Y	N	U		U	5.0	0.79	ug/l
FB011121	460-226279-4	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1/13/2021		Y	N	U		U	1.0	0.31	ug/l
FB011121	460-226279-4	METHYLCYCLOHEXANE	1/13/2021		Y	N	U		U	1.0	0.71	ug/l
FB011121	460-226279-4	1,1,2,2-TETRACHLOROETHANE	1/13/2021		Y	N	U		U	1.0	0.37	ug/l
FB011121	460-226279-4	CHLOROBENZENE	1/13/2021		Y	N	U		U	1.0	0.38	ug/l
FB011121	460-226279-4	1,1,2-TRICHLOROETHANE	1/13/2021		Y	N	U		U	1.0	0.20	ug/l
FB011121	460-226279-4	1,1-DICHLOROETHANE	1/13/2021		Y	N	U		U	1.0	0.26	ug/l
FB011121	460-226279-4	1,1-DICHLOROETHENE	1/13/2021		Y	N	U		U	1.0	0.26	ug/l
FB011121	460-226279-4	1,2,3-TRICHLOROBENZENE	1/13/2021		Y	N	U		U	1.0	0.36	ug/l
FB011121	460-226279-4	1,2,4-TRICHLOROBENZENE	1/13/2021		Y	N	U		U	1.0	0.37	ug/l
FB011121	460-226279-4	1,2-DIBROMO-3-CHLOROPROPANE	1/13/2021		Y	N	U		U	1.0	0.38	ug/l
FB011121	460-226279-4	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	1/13/2021		Y	N	U		U	1.0	0.50	ug/l
FB011121	460-226279-4	1,2-DICHLOROBENZENE	1/13/2021		Y	N	U		U	1.0	0.21	ug/l
FB011121	460-226279-4	1,2-DICHLOROETHANE	1/13/2021		Y	N	U		U	1.0	0.43	ug/l
FB011121	460-226279-4	1,2-DICHLOROPROPANE	1/13/2021		Y	N	U		U	1.0	0.35	ug/l
FB011121	460-226279-4	BROMOMETHANE	1/13/2021		Y	N	U		U	1.0	0.55	ug/l
FB011121	460-226279-4	CARBON DISULFIDE	1/13/2021		Y	N	U		U	1.0	0.82	ug/l
FB011121	460-226279-4	BROMOFORM	1/13/2021		Y	N	U		U	1.0	0.54	ug/l
FB011121	460-226279-4	BROMODICHLOROMETHANE	1/13/2021		Y	N	U		U	1.0	0.34	ug/l
FB011121	460-226279-4	BROMOCHLOROMETHANE	1/13/2021		Y	N	U		U	1.0	0.41	ug/l
FB011121	460-226279-4	BENZENE	1/13/2021		Y	N	U		U	1.0	0.20	ug/l
FB011121	460-226279-4	2-HEXANONE	1/13/2021		Y	N	U		U	5.0	1.1	ug/l
FB011121	460-226279-4	1,4-DIOXANE (P-DIOXANE)	1/13/2021		Y	N	U		U	50	28	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
FB011121	460-226279-4	1,4-DICHLOROBENZENE	1/13/2021		Y	N	U		U	1.0	0.33	ug/l
FB011121	460-226279-4	1,3-DICHLOROBENZENE	1/13/2021		Y	N	U		U	1.0	0.34	ug/l
FB011121	460-226279-4	ACETONE	1/13/2021		Y	N	U		U	5.0	4.4	ug/l
FB011121	460-226279-4	CARBON TETRACHLORIDE	1/13/2021		Y	N	U		U	1.0	0.21	ug/l
SW-10	460-226279-2	Cis-1,2-Dichloroethylene	1/14/2021		Y	N	U		U	0.0015	0.00055	mg/kg
SW-10	460-226279-2	METHYL ETHYL KETONE (2-BUTANONE)	1/14/2021		Y	N	U		U	0.0077	0.00057	mg/kg
SW-10	460-226279-2	METHYL ACETATE	1/14/2021		Y	N	U		U	0.0077	0.0067	mg/kg
SW-10	460-226279-2	M,P-XYLENES	1/14/2021		Y	N	U		U	0.0015	0.00027	mg/kg
SW-10	460-226279-2	Isopropylbenzene (Cumene)	1/14/2021		Y	N	U		U	0.0015	0.00044	mg/kg
SW-10	460-226279-2	ETHYLBENZENE	1/14/2021		Y	N	U		U	0.0015	0.00031	mg/kg
SW-10	460-226279-2	DICHLORODIFLUOROMETHANE	1/14/2021		Y	N	U		U	0.0015	0.00052	mg/kg
SW-10	460-226279-2	DIBROMOCHLOROMETHANE	1/14/2021		Y	N	U		U	0.0015	0.00030	mg/kg
SW-10	460-226279-2	CIS-1,3-DICHLOROPROPENE	1/14/2021		Y	N	U		U	0.0015	0.00042	mg/kg
SW-10	460-226279-2	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	1/14/2021		Y	N	U		U	0.0077	0.0024	mg/kg
SW-10	460-226279-2	TOLUENE	1/14/2021		Y	N	U		U	0.0015	0.00036	mg/kg
SW-10	460-226279-2	CHLOROMETHANE	1/14/2021		Y	N	U		U	0.0015	0.00067	mg/kg
SW-10	460-226279-2	CYCLOHEXANE	1/14/2021		Y	N	U		U	0.0015	0.00034	mg/kg
SW-10	460-226279-2	METHYLCYCLOHEXANE	1/14/2021		Y	N	U		U	0.0015	0.00077	mg/kg
SW-10	460-226279-2	METHYLENE CHLORIDE	1/14/2021		Y	N	U		U	0.0031	0.0018	mg/kg
SW-10	460-226279-2	O-XYLENE (1,2-DIMETHYLBENZENE)	1/14/2021		Y	N	U		U	0.0015	0.00030	mg/kg
SW-10	460-226279-2	STYRENE	1/14/2021		Y	N	U		U	0.0015	0.00043	mg/kg
SW-10	460-226279-2	VINYL CHLORIDE	1/14/2021		Y	N	U		U	0.0015	0.00085	mg/kg
SW-10	460-226279-2	TETRACHLOROETHYLENE(PCE)	1/14/2021		Y	N	U		U	0.0015	0.00047	mg/kg
SW-10	460-226279-2	CHLOROFORM	1/14/2021		Y	N	U		U	0.0015	0.0015	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
SW-10	460-226279-2	TRANS-1,2-DICHLOROETHENE	1/14/2021		Y	N	U		U	0.0015	0.00038	mg/kg
SW-10	460-226279-2	TRANS-1,3-DICHLOROPROPENE	1/14/2021		Y	N	U		U	0.0015	0.00041	mg/kg
SW-10	460-226279-2	TRICHLOROETHYLENE (TCE)	1/14/2021		Y	N	U		U	0.0015	0.00050	mg/kg
SW-10	460-226279-2	TRICHLOROFLUOROMETHANE	1/14/2021		Y	N	U		U	0.0015	0.00063	mg/kg
SW-10	460-226279-2	1,2-DICHLOROPROPANE	1/14/2021		Y	N	U		U	0.0015	0.00066	mg/kg
SW-10	460-226279-2	TERT-BUTYL METHYL ETHER	1/14/2021		Y	N	U		U	0.0015	0.00079	mg/kg
SW-10	460-226279-2	1,2-DIBROMO-3-CHLOROPROPANE	1/14/2021		Y	N	U		U	0.0015	0.00071	mg/kg
SW-10	460-226279-2	1,4-DICHLOROBENZENE	1/14/2021		Y	N	U		U	0.0015	0.00035	mg/kg
SW-10	460-226279-2	CHLOROETHANE	1/14/2021		Y	N	U		U	0.0015	0.00081	mg/kg
SW-10	460-226279-2	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1/14/2021		Y	N	U		U	0.0015	0.00047	mg/kg
SW-10	460-226279-2	1,1,2-TRICHLOROETHANE	1/14/2021		Y	N	U		U	0.0015	0.00028	mg/kg
SW-10	460-226279-2	1,1-DICHLOROETHANE	1/14/2021		Y	N	U		U	0.0015	0.00032	mg/kg
SW-10	460-226279-2	1,1-DICHLOROETHENE	1/14/2021		Y	N	U		U	0.0015	0.00035	mg/kg
SW-10	460-226279-2	1,2,4-TRICHLOROBENZENE	1/14/2021		Y	N	U		U	0.0015	0.00055	mg/kg
SW-10	460-226279-2	1,1,2,2-TETRACHLOROETHANE	1/14/2021		Y	N	U		U	0.0015	0.00033	mg/kg
SW-10	460-226279-2	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	1/14/2021		Y	N	U		U	0.0015	0.00028	mg/kg
SW-10	460-226279-2	1,2-DICHLOROBENZENE	1/14/2021		Y	N	U		U	0.0015	0.00056	mg/kg
SW-10	460-226279-2	1,2-DICHLOROETHANE	1/14/2021		Y	N	U		U	0.0015	0.00046	mg/kg
SW-10	460-226279-2	1,3-DICHLOROBENZENE	1/14/2021		Y	N	U		U	0.0015	0.00057	mg/kg
SW-10	460-226279-2	CARBON DISULFIDE	1/14/2021		Y	N	U		U	0.0015	0.00041	mg/kg
SW-10	460-226279-2	CHLOROBENZENE	1/14/2021		Y	N	U		U	0.0015	0.00027	mg/kg
SW-10	460-226279-2	1,2,3-TRICHLOROBENZENE	1/14/2021		Y	N	U		U	0.0015	0.00028	mg/kg
SW-10	460-226279-2	CARBON TETRACHLORIDE	1/14/2021		Y	N	U		U	0.0015	0.00060	mg/kg
SW-10	460-226279-2	1,1,1-TRICHLOROETHANE	1/14/2021		Y	N	U		U	0.0015	0.00036	mg/kg
SW-10	460-226279-2	BROMOMETHANE	1/14/2021		Y	N	U		U	0.0031	0.0015	mg/kg

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SW-10	460-226279-2	BROMOFORM	1/14/2021		Y	N	U	UJ	UJ	0.0015	0.00066	mg/kg
SW-10	460-226279-2	BROMODICHLOROMETHANE	1/14/2021		Y	N	U		U	0.0015	0.00040	mg/kg
SW-10	460-226279-2	BROMOCHLOROMETHANE	1/14/2021		Y	N	U		U	0.0015	0.00044	mg/kg
SW-10	460-226279-2	BENZENE	1/14/2021		Y	N	U		U	0.0015	0.00040	mg/kg
SW-10	460-226279-2	ACETONE	1/14/2021		Y	N	U		U	0.0093	0.0089	mg/kg
SW-10	460-226279-2	2-HEXANONE	1/14/2021		Y	N	U		U	0.0077	0.0027	mg/kg
SW-10	460-226279-2	1,4-DIOXANE (P-DIOXANE)	1/14/2021		Y	N	U		U	0.031	0.014	mg/kg
SW-7	460-226279-1	BROMOFORM	1/14/2021		Y	N	U	UJ	UJ	0.0013	0.00056	mg/kg
SW-7	460-226279-1	1,3-DICHLOROBENZENE	1/14/2021		Y	N	U	UJ	UJ	0.0013	0.00048	mg/kg
SW-7	460-226279-1	1,4-DICHLOROBENZENE	1/14/2021		Y	N	U	UJ	UJ	0.0013	0.00030	mg/kg
SW-7	460-226279-1	1,4-DIOXANE (P-DIOXANE)	1/14/2021		Y	N	U		U	0.026	0.012	mg/kg
SW-7	460-226279-1	2-HEXANONE	1/14/2021		Y	N	U		U	0.0066	0.0023	mg/kg
SW-7	460-226279-1	ACETONE	1/14/2021		Y	N	U		U	0.0079	0.0076	mg/kg
SW-7	460-226279-1	BENZENE	1/14/2021		Y	N	U	UJ	UJ	0.0013	0.00034	mg/kg
SW-7	460-226279-1	BROMOMETHANE	1/14/2021		Y	N	U		U	0.0026	0.0013	mg/kg
SW-7	460-226279-1	BROMODICHLOROMETHANE	1/14/2021		Y	N	U		U	0.0013	0.00034	mg/kg
SW-7	460-226279-1	1,2-DICHLOROPROPANE	1/14/2021		Y	N	U		U	0.0013	0.00056	mg/kg
SW-7	460-226279-1	CARBON DISULFIDE	1/14/2021		Y	N	U		U	0.0013	0.00035	mg/kg
SW-7	460-226279-1	BROMOCHLOROMETHANE	1/14/2021		Y	N	U		U	0.0013	0.00037	mg/kg
SW-7	460-226279-1	1,2-DICHLOROETHANE	1/14/2021		Y	N	U		U	0.0013	0.00039	mg/kg
SW-7	460-226279-1	1,2-DICHLOROBENZENE	1/14/2021		Y	N	U	UJ	UJ	0.0013	0.00048	mg/kg
SW-7	460-226279-1	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	1/14/2021		Y	N	U		U	0.0013	0.00024	mg/kg
SW-7	460-226279-1	1,2-DIBROMO-3-CHLOROPROPANE	1/14/2021		Y	N	U		U	0.0013	0.00061	mg/kg
SW-7	460-226279-1	1,2,4-TRICHLOROBENZENE	1/14/2021		Y	N	U		U	0.0013	0.00047	mg/kg
SW-7	460-226279-1	1,2,3-TRICHLOROBENZENE	1/14/2021		Y	N	U		U	0.0013	0.00024	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
SW-7	460-226279-1	1,1-DICHLOROETHENE	1/14/2021		Y	N	U		U	0.0013	0.00030	mg/kg
SW-7	460-226279-1	1,1-DICHLOROETHANE	1/14/2021		Y	N	U		U	0.0013	0.00027	mg/kg
SW-7	460-226279-1	1,1,2-TRICHLOROETHANE	1/14/2021		Y	N	U		U	0.0013	0.00024	mg/kg
SW-7	460-226279-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1/14/2021		Y	N	U		U	0.0013	0.00040	mg/kg
SW-7	460-226279-1	1,1,1-TRICHLOROETHANE	1/14/2021		Y	N	U		U	0.0013	0.00031	mg/kg
SW-7	460-226279-1	CHLOROETHANE	1/14/2021		Y	N	U		U	0.0013	0.00069	mg/kg
SW-7	460-226279-1	CHLOROBENZENE	1/14/2021		Y	N	U		U	0.0013	0.00023	mg/kg
SW-7	460-226279-1	1,1,2,2-TETRACHLOROETHANE	1/14/2021		Y	N	U		U	0.0013	0.00028	mg/kg
SW-7	460-226279-1	TRICHLOROFLUOROMETHANE	1/14/2021		Y	N	U		U	0.0013	0.00054	mg/kg
SW-7	460-226279-1	CARBON TETRACHLORIDE	1/14/2021		Y	N	U		U	0.0013	0.00051	mg/kg
SW-7	460-226279-1	VINYL CHLORIDE	1/14/2021		Y	N	U		U	0.0013	0.00072	mg/kg
SW-7	460-226279-1	TRICHLOROETHYLENE (TCE)	1/14/2021		Y	N	U		U	0.0013	0.00043	mg/kg
SW-7	460-226279-1	TRANS-1,3-DICHLOROPROPENE	1/14/2021		Y	N	U		U	0.0013	0.00035	mg/kg
SW-7	460-226279-1	TRANS-1,2-DICHLOROETHENE	1/14/2021		Y	N	U		U	0.0013	0.00033	mg/kg
SW-7	460-226279-1	TOLUENE	1/14/2021		Y	N	U	UJ	UJ	0.0013	0.00031	mg/kg
SW-7	460-226279-1	TETRACHLOROETHYLENE(PCE)	1/14/2021		Y	N	U		U	0.0013	0.00040	mg/kg
SW-7	460-226279-1	TERT-BUTYL METHYL ETHER	1/14/2021		Y	N	U		U	0.0013	0.00068	mg/kg
SW-7	460-226279-1	STYRENE	1/14/2021		Y	N	U	UJ	UJ	0.0013	0.00037	mg/kg
SW-7	460-226279-1	O-XYLENE (1,2-DIMETHYLBENZENE)	1/14/2021		Y	N	U	UJ	UJ	0.0013	0.00026	mg/kg
SW-7	460-226279-1	METHYLENE CHLORIDE	1/14/2021		Y	N	U		U	0.0026	0.0015	mg/kg
SW-7	460-226279-1	METHYLCYCLOHEXANE	1/14/2021		Y	N	U		U	0.0013	0.00066	mg/kg
SW-7	460-226279-1	CYCLOHEXANE	1/14/2021		Y	N	U		U	0.0013	0.00029	mg/kg
SW-7	460-226279-1	CHLOROFORM	1/14/2021		Y	N	U		U	0.0013	0.0013	mg/kg
SW-7	460-226279-1	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	1/14/2021		Y	N	U		U	0.0066	0.0021	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
SW-7	460-226279-1	CIS-1,3-DICHLOROPROPENE	1/14/2021		Y	N	U		U	0.0013	0.00036	mg/kg
SW-7	460-226279-1	CHLOROMETHANE	1/14/2021		Y	N	U		U	0.0013	0.00058	mg/kg
SW-7	460-226279-1	DIBROMOCHLOROMETHANE	1/14/2021		Y	N	U		U	0.0013	0.00026	mg/kg
SW-7	460-226279-1	DICHLORODIFLUOROMETHANE	1/14/2021		Y	N	U		U	0.0013	0.00045	mg/kg
SW-7	460-226279-1	ETHYLBENZENE	1/14/2021		Y	N	U		U	0.0013	0.00026	mg/kg
SW-7	460-226279-1	Isopropylbenzene (Cumene)	1/14/2021		Y	N	U		U	0.0013	0.00038	mg/kg
SW-7	460-226279-1	M,P-XYLENES	1/14/2021		Y	N	U	UJ	UJ	0.0013	0.00023	mg/kg
SW-7	460-226279-1	METHYL ACETATE	1/14/2021		Y	N	U		U	0.0066	0.0057	mg/kg
SW-7	460-226279-1	METHYL ETHYL KETONE (2-BUTANONE)	1/14/2021		Y	N	U		U	0.0066	0.00049	mg/kg
SW-7	460-226279-1	Cis-1,2-Dichloroethylene	1/14/2021		Y	N	U		U	0.0013	0.00047	mg/kg
SW-X	460-226279-3	METHYL ACETATE	1/14/2021		Y	N	U		U	0.0090	0.0077	mg/kg
SW-X	460-226279-3	M,P-XYLENES	1/14/2021		Y	N	U		U	0.0018	0.00031	mg/kg
SW-X	460-226279-3	Isopropylbenzene (Cumene)	1/14/2021		Y	N	U		U	0.0018	0.00051	mg/kg
SW-X	460-226279-3	ETHYLBENZENE	1/14/2021		Y	N	U		U	0.0018	0.00036	mg/kg
SW-X	460-226279-3	DICHLORODIFLUOROMETHANE	1/14/2021		Y	N	U		U	0.0018	0.00061	mg/kg
SW-X	460-226279-3	DIBROMOCHLOROMETHANE	1/14/2021		Y	N	U		U	0.0018	0.00035	mg/kg
SW-X	460-226279-3	CYCLOHEXANE	1/14/2021		Y	N	U		U	0.0018	0.00040	mg/kg
SW-X	460-226279-3	CIS-1,3-DICHLOROPROPENE	1/14/2021		Y	N	U		U	0.0018	0.00049	mg/kg
SW-X	460-226279-3	Cis-1,2-Dichloroethylene	1/14/2021		Y	N	U		U	0.0018	0.00064	mg/kg
SW-X	460-226279-3	CHLOROFORM	1/14/2021		Y	N	U		U	0.0018	0.0017	mg/kg
SW-X	460-226279-3	TOLUENE	1/14/2021		Y	N	U		U	0.0018	0.00042	mg/kg
SW-X	460-226279-3	CHLOROMETHANE	1/14/2021		Y	N	U		U	0.0018	0.00078	mg/kg
SW-X	460-226279-3	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	1/14/2021		Y	N	U		U	0.0090	0.0028	mg/kg
SW-X	460-226279-3	METHYLENE CHLORIDE	1/14/2021		Y	N	U		U	0.0036	0.0021	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
SW-X	460-226279-3	O-XYLENE (1,2-DIMETHYLBENZENE)	1/14/2021		Y	N	U		U	0.0018	0.00035	mg/kg
SW-X	460-226279-3	STYRENE	1/14/2021		Y	N	U		U	0.0018	0.00050	mg/kg
SW-X	460-226279-3	VINYL CHLORIDE	1/14/2021		Y	N	U		U	0.0018	0.00098	mg/kg
SW-X	460-226279-3	TETRACHLOROETHYLENE(PCE)	1/14/2021		Y	N	U		U	0.0018	0.00055	mg/kg
SW-X	460-226279-3	TRANS-1,2-DICHLOROETHENE	1/14/2021		Y	N	U		U	0.0018	0.00044	mg/kg
SW-X	460-226279-3	TRANS-1,3-DICHLOROPROPENE	1/14/2021		Y	N	U		U	0.0018	0.00048	mg/kg
SW-X	460-226279-3	TRICHLOROETHYLENE (TCE)	1/14/2021		Y	N	U		U	0.0018	0.00058	mg/kg
SW-X	460-226279-3	TRICHLOROFLUOROMETHANE	1/14/2021		Y	N	U		U	0.0018	0.00073	mg/kg
SW-X	460-226279-3	CHLOROETHANE	1/14/2021		Y	N	U		U	0.0018	0.00094	mg/kg
SW-X	460-226279-3	METHYL ETHYL KETONE (2-BUTANONE)	1/14/2021		Y	N	U		U	0.0090	0.00066	mg/kg
SW-X	460-226279-3	TERT-BUTYL METHYL ETHER	1/14/2021		Y	N	U		U	0.0018	0.00092	mg/kg
SW-X	460-226279-3	1,1,2,2-TETRACHLOROETHANE	1/14/2021		Y	N	U		U	0.0018	0.00038	mg/kg
SW-X	460-226279-3	METHYLCYCLOHEXANE	1/14/2021		Y	N	U		U	0.0018	0.00090	mg/kg
SW-X	460-226279-3	CHLOROBENZENE	1/14/2021		Y	N	U		U	0.0018	0.00032	mg/kg
SW-X	460-226279-3	1,1,1-TRICHLOROETHANE	1/14/2021		Y	N	U		U	0.0018	0.00042	mg/kg
SW-X	460-226279-3	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1/14/2021		Y	N	U		U	0.0018	0.00054	mg/kg
SW-X	460-226279-3	1,1,2-TRICHLOROETHANE	1/14/2021		Y	N	U		U	0.0018	0.00032	mg/kg
SW-X	460-226279-3	1,1-DICHLOROETHANE	1/14/2021		Y	N	U		U	0.0018	0.00037	mg/kg
SW-X	460-226279-3	1,1-DICHLOROETHENE	1/14/2021		Y	N	U		U	0.0018	0.00040	mg/kg
SW-X	460-226279-3	1,2,3-TRICHLOROBENZENE	1/14/2021		Y	N	U		U	0.0018	0.00033	mg/kg
SW-X	460-226279-3	1,2,4-TRICHLOROBENZENE	1/14/2021		Y	N	U		U	0.0018	0.00064	mg/kg
SW-X	460-226279-3	1,2-DIBROMO-3-CHLOROPROPANE	1/14/2021		Y	N	U		U	0.0018	0.00083	mg/kg
SW-X	460-226279-3	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	1/14/2021		Y	N	U		U	0.0018	0.00032	mg/kg
SW-X	460-226279-3	1,2-DICHLOROBENZENE	1/14/2021		Y	N	U		U	0.0018	0.00065	mg/kg
SW-X	460-226279-3	1,2-DICHLOROETHANE	1/14/2021		Y	N	U		U	0.0018	0.00053	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
SW-X	460-226279-3	BENZENE	1/14/2021		Y	N	U		U	0.0018	0.00046	mg/kg
SW-X	460-226279-3	CARBON DISULFIDE	1/14/2021		Y	N	U		U	0.0018	0.00048	mg/kg
SW-X	460-226279-3	BROMOFORM	1/14/2021		Y	N	U	UJ	UJ	0.0018	0.00076	mg/kg
SW-X	460-226279-3	1,2-DICHLOROPROPANE	1/14/2021		Y	N	U		U	0.0018	0.00076	mg/kg
SW-X	460-226279-3	BROMOCHLOROMETHANE	1/14/2021		Y	N	U		U	0.0018	0.00050	mg/kg
SW-X	460-226279-3	BROMOMETHANE	1/14/2021		Y	N	U		U	0.0036	0.0018	mg/kg
SW-X	460-226279-3	ACETONE	1/14/2021		Y	N	U		U	0.011	0.010	mg/kg
SW-X	460-226279-3	2-HEXANONE	1/14/2021		Y	N	U		U	0.0090	0.0031	mg/kg
SW-X	460-226279-3	1,4-DIOXANE (P-DIOXANE)	1/14/2021		Y	N	U		U	0.036	0.016	mg/kg
SW-X	460-226279-3	1,4-DICHLOROBENZENE	1/14/2021		Y	N	U		U	0.0018	0.00040	mg/kg
SW-X	460-226279-3	1,3-DICHLOROBENZENE	1/14/2021		Y	N	U		U	0.0018	0.00066	mg/kg
SW-X	460-226279-3	CARBON TETRACHLORIDE	1/14/2021		Y	N	U		U	0.0018	0.00070	mg/kg
SW-X	460-226279-3	BROMODICHLOROMETHANE	1/14/2021		Y	N	U		U	0.0018	0.00046	mg/kg
TB011121	460-226279-5	METHYL ACETATE	1/13/2021		Y	N	U		U	5.0	0.79	ug/l
TB011121	460-226279-5	M,P-XYLENES	1/13/2021		Y	N	U		U	1.0	0.30	ug/l
TB011121	460-226279-5	Isopropylbenzene (Cumene)	1/13/2021		Y	N	U		U	1.0	0.34	ug/l
TB011121	460-226279-5	ETHYLBENZENE	1/13/2021		Y	N	U		U	1.0	0.30	ug/l
TB011121	460-226279-5	DICHLORODIFLUOROMETHANE	1/13/2021		Y	N	U		U	1.0	0.31	ug/l
TB011121	460-226279-5	DIBROMOCHLOROMETHANE	1/13/2021		Y	N	U		U	1.0	0.28	ug/l
TB011121	460-226279-5	CYCLOHEXANE	1/13/2021		Y	N	U		U	1.0	0.32	ug/l
TB011121	460-226279-5	CIS-1,3-DICHLOROPROPENE	1/13/2021		Y	N	U		U	1.0	0.22	ug/l
TB011121	460-226279-5	CHLOROMETHANE	1/13/2021		Y	N	U		U	1.0	0.40	ug/l
TB011121	460-226279-5	TERT-BUTYL METHYL ETHER	1/13/2021		Y	N	U		U	1.0	0.22	ug/l
TB011121	460-226279-5	CHLOROFORM	1/13/2021		Y	N	U		U	1.0	0.33	ug/l
TB011121	460-226279-5	Cis-1,2-Dichloroethylene	1/13/2021		Y	N	U		U	1.0	0.22	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
TB011121	460-226279-5	METHYL ETHYL KETONE (2-BUTANONE)	1/13/2021		Y	N	U		U	5.0	1.9	ug/l
TB011121	460-226279-5	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	1/13/2021		Y	N	U		U	5.0	1.3	ug/l
TB011121	460-226279-5	METHYLCYCLOHEXANE	1/13/2021		Y	N	U		U	1.0	0.71	ug/l
TB011121	460-226279-5	METHYLENE CHLORIDE	1/13/2021		Y	N	U		U	1.0	0.32	ug/l
TB011121	460-226279-5	TRICHLOROETHYLENE (TCE)	1/13/2021		Y	N	U		U	1.0	0.31	ug/l
TB011121	460-226279-5	STYRENE	1/13/2021		Y	N	U		U	1.0	0.42	ug/l
TB011121	460-226279-5	TETRACHLOROETHYLENE(PCE)	1/13/2021		Y	N	U		U	1.0	0.25	ug/l
TB011121	460-226279-5	TOLUENE	1/13/2021		Y	N	U		U	1.0	0.38	ug/l
TB011121	460-226279-5	TRANS-1,2-DICHLOROETHENE	1/13/2021		Y	N	U		U	1.0	0.24	ug/l
TB011121	460-226279-5	TRANS-1,3-DICHLOROPROPENE	1/13/2021		Y	N	U		U	1.0	0.22	ug/l
TB011121	460-226279-5	CHLOROETHANE	1/13/2021		Y	N	U		U	1.0	0.32	ug/l
TB011121	460-226279-5	1,2-DICHLOROETHANE	1/13/2021		Y	N	U		U	1.0	0.43	ug/l
TB011121	460-226279-5	TRICHLOROFLUOROMETHANE	1/13/2021		Y	N	U		U	1.0	0.32	ug/l
TB011121	460-226279-5	O-XYLENE (1,2-DIMETHYLBENZENE)	1/13/2021		Y	N	U		U	1.0	0.36	ug/l
TB011121	460-226279-5	1,2-DICHLOROPROPANE	1/13/2021		Y	N	U		U	1.0	0.35	ug/l
TB011121	460-226279-5	VINYL CHLORIDE	1/13/2021		Y	N	U		U	1.0	0.17	ug/l
TB011121	460-226279-5	1,1,1-TRICHLOROETHANE	1/13/2021		Y	N	U		U	1.0	0.24	ug/l
TB011121	460-226279-5	1,1,2,2-TETRACHLOROETHANE	1/13/2021		Y	N	U		U	1.0	0.37	ug/l
TB011121	460-226279-5	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1/13/2021		Y	N	U		U	1.0	0.31	ug/l
TB011121	460-226279-5	1,1,2-TRICHLOROETHANE	1/13/2021		Y	N	U		U	1.0	0.20	ug/l
TB011121	460-226279-5	1,1-DICHLOROETHANE	1/13/2021		Y	N	U		U	1.0	0.26	ug/l
TB011121	460-226279-5	1,1-DICHLOROETHENE	1/13/2021		Y	N	U		U	1.0	0.26	ug/l
TB011121	460-226279-5	1,2,3-TRICHLOROBENZENE	1/13/2021		Y	N	U		U	1.0	0.36	ug/l
TB011121	460-226279-5	1,2,4-TRICHLOROBENZENE	1/13/2021		Y	N	U		U	1.0	0.37	ug/l

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
TB011121	460-226279-5	1,2-DIBROMO-3-CHLOROPROPANE	1/13/2021		Y	N	U		U	1.0	0.38	ug/l
TB011121	460-226279-5	1,3-DICHLOROBENZENE	1/13/2021		Y	N	U		U	1.0	0.34	ug/l
TB011121	460-226279-5	1,2-DICHLOROBENZENE	1/13/2021		Y	N	U		U	1.0	0.21	ug/l
TB011121	460-226279-5	CHLOROBENZENE	1/13/2021		Y	N	U		U	1.0	0.38	ug/l
TB011121	460-226279-5	1,4-DICHLOROBENZENE	1/13/2021		Y	N	U		U	1.0	0.33	ug/l
TB011121	460-226279-5	1,4-DIOXANE (P-DIOXANE)	1/13/2021		Y	N	U		U	50	28	ug/l
TB011121	460-226279-5	2-HEXANONE	1/13/2021		Y	N	U		U	5.0	1.1	ug/l
TB011121	460-226279-5	ACETONE	1/13/2021	6.2	Y	Y				5.0	4.4	ug/l
TB011121	460-226279-5	BENZENE	1/13/2021		Y	N	U		U	1.0	0.20	ug/l
TB011121	460-226279-5	BROMOCHLOROMETHANE	1/13/2021		Y	N	U		U	1.0	0.41	ug/l
TB011121	460-226279-5	BROMODICHLOROMETHANE	1/13/2021		Y	N	U		U	1.0	0.34	ug/l
TB011121	460-226279-5	BROMOFORM	1/13/2021		Y	N	U		U	1.0	0.54	ug/l
TB011121	460-226279-5	BROMOMETHANE	1/13/2021		Y	N	U		U	1.0	0.55	ug/l
TB011121	460-226279-5	CARBON DISULFIDE	1/13/2021		Y	N	U		U	1.0	0.82	ug/l
TB011121	460-226279-5	CARBON TETRACHLORIDE	1/13/2021		Y	N	U		U	1.0	0.21	ug/l
TB011121	460-226279-5	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	1/13/2021		Y	N	U		U	1.0	0.50	ug/l