SDG NARRATIVE

LAB NAME: CHEMTECH CONSULTING GROUP
CASE: 49673
SDG: C00T3
CONTRACT: 68HERH20D0011
LAB CODE: CHM
CHEMTECH PROJECT: M4110
MODIFICATION REF. NUMBER: NA

Sample ID	EPA Sample ID	pH
M4110-01	C00T3	
M4110-02MS	C00T3MS	
M4110-03MSD	C00T3MSD	
M4110-04	C00U1	
M4110-05	C00U3	
M4110-06	C00U8	

6 Water samples were delivered to the laboratory intact on 10/06/2021.

Test requested on the Chain of Custody was Semivolatile Organic, Semivolatile Organic-SIM and Pesticide by Method SFAM01.1.

Sample Tags were not received with the samples.

The temperature of the samples was measured using an I R Gun. The samples temperature was 4.1, 4.4, 3.7 degree Celsius for the samples received on 10/06/2021.

Shipping Discrepancies and/or QC issues:
Issue 1: Sample tags were not received with samples at the laboratory. Sample tag numbers may or may not be listed on the TR/COC.

Resolutions 1: The laboratory will note the samples with the missing tags in the SDG Narrative and proceed with the analysis of the samples. The resolution will be applied to all samples received for this Case.

Issue 2: The attached COC received on 10/6/2021 was missing the relinquished time, date, and signature.

Resolution 2: Per Region 3, the sampler has been requested to provide corrected COCs. Once received the laboratory will make note of the issue in their SDG Narrative, proceed with the analysis of the samples and include all received COCs when submitting their Data Package.

.

Semivolatiles :

The samples were analyzed on instrument BNA_M using GC Column ZB-GR Semi Volatiles Guardian which is 30 meters, 0.25 mm ID, 0.5 um df, Catalog # 7HG-G027-17-GGA.

Semis volatile Organic sample for water sample was extracted by Method SFAM01.1 on 10/11/2021. The analysis of SVOC-SFAM was based on method SFAM01.1_SVOC.

The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria.
The Internal Standards Areas met the acceptable requirements.
The Retention Times were acceptable for all samples.
The Blank Spike for {PB139820BS} recoveries met the requirements for all compounds.
The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements.
The Tuning criteria met requirements.
The Continuous Calibration met the requirement.

See **Manual Integration report** for the manual integration information at the end of the case narrative.

Concentration of Water Sample:

$$\text{Concentration ug/L} = \frac{(Ax)\,(Is)\,(Vt)\,(DF)\,(GPC)}{(Ais)\,(\overline{RRF})\,(Vo)\,(Vi)}$$

Where,
Ax = Area of the characteristic ion for the compound to be measured.
Ais = Area of the characteristic ion for the internal standard.
Is = Amount of internal standard injected in ng.
Vo = Volume of water extracted in mL.
Vi = Volume of extract injected in uL.
Vt = Volume of the concentrated extract in uL
RRF = Mean Relative Response Factor determined from the initial calibration standard.
GPC = $\frac{Vin}{}$ = GPC factor (If no GPC is performed, GPC=1)
Vout = Volume of extract collected after GPC cleanup.

Example calculation of C00U8 for Bis(2-ethylhexyl)Phthalate:

Ax = 159463
Ais = 1354786
Is = 20
Vo = 1000
Vi = 1
Vt = 1000
RRF = 0.673
GPC = 1

Concentration ug/L = (159463) (20) (1000) (1) (1)

(1354786) (0.673) (1000) (1)

Reported Result = 3.5 ug/L

RRF Calculation of standard 20 ppb for **Naphthalene** with M instrument for method 10/05/2021.

RRF= Area of compound / Area of Internal Standard X Conc. of Internal Standard / Conc. of Compound

= 1180405/1175900 X 20/20

= 1.004 (Reported RRF)

Semivolatiles SIM:

The samples were analyzed on instrument BNA_M using GC Column ZB-GR Semi Volatiles Guardian which is 30 meters, 0.25 mm ID, 0.5 um df, Catalog # 7HG-G027-17-GGA.

Semis volatile Organic samples for Water were extracted by Method SFAM01.1 on 10/11/21 the analysis of SVOC-SIM-SFAM was based on Method SFAM01.1_SVOC-SIM.

The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria.
The Internal Standards Areas met the acceptable requirements.
The Retention Times were acceptable for all samples.
The Blank Spike for {PB139821BS} recoveries met the requirements for all compounds.
The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements.
The Continuous Calibration met the requirements.
The Tuning criteria met requirements.
The Samples C00U8 have the concentration of target compound below Method detection limits; Therefore it is not reported as Hit in Form1.

See **Manual Integration report** for the manual integration information at the end of the case narrative.

Concentration of Water Sample:

Concentration ug/L = (Ax) (Is) (Vt) (DF) (GPC)

(Ais) ($\overline{RRF}$) (Vo) (Vi)

Where,
Ax = Area of the characteristic ion for the compound to be measured.
Ais = Area of the characteristic ion for the internal standard.
Is = Amount of internal standard injected in ng.
Vo = Volume of water extracted in mL.
Vi = Volume of extract injected in uL.
Vt = Volume of the concentrated extract in uL

$\overline{\text{RRF}}$ = Mean Relative Response Factor determined from the initial calibration standard.
GPC = $\frac{\text{Vin}}{\text{Vout}}$ = GPC factor (If no GPC is performed, GPC=1)

Example calculation of C00T3 for Phenanthrene:

Ax = 1278
Ais = 12330
Is = 0.4
Vo = 1000
Vi = 1
Vt = 1000
RRF = 1.345
GPC = 1

$$\text{Concentration ug/L} = \frac{(1278)\,(0.4)\,(1000)\,(1)\,(1)}{(12330)\,(1.345)\,(1000)\,(1)}$$

$$= 0.030 \text{ ug/L}$$

RRF Calculation of standard 0.4 ppb Naphthalene with instrument M for method 10/14/2021.

RRF= Area of compound / X Conc. of Internal Standard /

Area of Internal Standard Conc. of Compound

= 14702/12171 X 0.4/0.4

= 1.208 (Reported RRF)

Pesticides:

The analyses for Pesticides were performed on instrument ECD D. The front column is ZB-Multi-Residue-2 which is 30 meters, 0.32 mm ID, 0.2 um df. The rear column ZB-Multi-Residue-1 which is 30 meters, 0.32 mm ID, 0.50 um df.

The sample was analyzed on a single injection dual column system. To distinguish the second column analysis from the first column a -2 suffix was added to the file id on the form 1. These

refer to forms were both columns are reported. Form 1s for the IBLK and ALCS are referenced as IBLK(1)/IBLK(2) and PLCS01(1)/PLCS01(2) respectively.

Pesticide sample was extracted by method SFAM01.1 on 10/11/2021 and analyzed on 10/13/2021. The sample was extracted and analyzed within contractual holding time.

The Surrogate recoveries met the acceptable.
The Blank analysis did not indicate the presence of lab contamination.
Blank and Laboratory Control Sample met the requirements.
Retention Times met the requirements.
Florisil check met the requirements.
Resolution Check met the requirements.
The Retention Times were acceptable for all samples.
The %RSD met requirement for initial Calibration except for beta-BHC (28.44%) in first column for the initial calibration dated 10/13/2021 with ECD_D instrument. (Please See Section 9.3.5.9 of Exhibit D Pesticide Analysis).
The Individual Mix A met the requirements.
The Individual Mix B met the requirements.
The PEM met the requirement.

Calculation for the Concentration in Water Samples

$$\text{Concentration ug/L} = \frac{(Ax)\,(Vt)\,(DF)\,(GPC)}{(CF)\,(Vo)\,(Vi)}$$

Where,
Ax = Response (peak area or height) of the compound to be measured.
CF = Mean Calibration Factor from the initial calibration (area/ng).
Vo = Volume of water extracted in mL.
Vi = Volume of extract injected in uL.
Vt = Volume of the concentrated extract in uL

$$GPC = \frac{Vin}{Vout} = \text{GPC factor (If no GPC is performed, GPC=1)}$$

Vin = Volume of extract loaded onto GPC column.

Vout = Volume of extract collected after GPC cleanup.

Example of alpha-BHC calculation
Calibration Factor Calculation alpha-BHC in the first column

$$\text{Calibration factor (CF)} = \frac{\text{peak area}}{\text{Mass injected in ng}}$$

$$= \frac{15576169}{5ng}$$

$$= 3115230$$

Mean Calibration Factor = average of 5 point calibration factor

= 2966650

No target **Pesticdes** were detected in the samples.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature _____ Name: Nimisha Pandya.

Date: _____ Title: Document Control Officer.