SDG NARRATIVE

LAB NAME: Alliance Technical Group, LLC
CASE: 51838
SDG: C0AF0
CONTRACT: 68HERH20D0011
LAB CODE: ACE
LAB ORDER ID: P4714
MODIFICATION REF. NUMBER: NA

Sample ID	EPA Sample ID	Test	pH
P4714-01	C0AF0		1.0
P4714-02	C0AF3		1.0
P4714-03	C0AF5		1.0
P4714-03DL	C0AF5DL	SVOA	
P4714-03DL	C0AF5DL	TVOA	1.0
P4714-04	C0AF7		1.0
P4714-05	C0AG0		1.0
P4714-06	C0AG2		1.0
P4714-07	C0AG4		1.0
P4714-08	C0AG6		1.0
P4714-09	C0AG8		1.0
P4714-10	C0AH0		1.0
P4714-11	C0AH2		1.0
P4714-12	C0AH3		1.0
P4714-13	C0AH5		1.0
P4714-14	C0AH7		1.0
P4714-15	C0AH9		1.0
P4714-16	C0AJ1		1.0
P4714-17	C0AJ3		1.0
P4714-18	C0AJ5		1.0
P4714-19	C0AJ9		1.0

19 Water samples were delivered to the laboratory intact on 11/05/2024.

Test requested on the Chain of Custody was Trace Volatile Organic, Semi volatile Organic and Semi volatile Organic-SIM by Method SFAM01.1.

The temperature of the samples was measured using an I R Gun. The samples temperature was 2.7, 2.3, 3.3, 2.9, 3.1, 3.0, 2.4, 2.6,2.1 degree Celsius for the samples received on 11/05/2024.

Shipping Discrepancies and/or QC issues:

Issue 01: The air bill number is missing on all the COCs received for Case 51838.

Resolution 01: In accordance with previous direction from Region 3, the laboratory will note the issue in the SDG Narrative and proceed with the analysis of the samples. This resolution will be applied to all samples received for this Case.

Trace Volatiles:

The analysis performed on instrument MSVOA_U were done using GC column DB-624UI 20m 0.18mm 1.0 um. Cat#121-1324UI.

The analysis performed on instrument MSVOA_V were done using GC column DB-624UI 20m 0.18mm 1.0 um. Cat#121-1324UI.

The analysis of VOC-SFAM was based on method SFAM01.1_Trace.

The Surrogate recoveries met the acceptable criteria except for,
C0AF5 [1,2-Dichlorobenzene-d4 - 130%],
As per method, up to three surrogates are allowed to fail. No corrective action was taken.

The Internal Standards Areas met the acceptable requirements.
Instrument Performance Check met requirements.
The Retention Times met requirements.
The Tuning criteria met requirements.
The initial Calibration criteria met requirements.

The Continuing Calibration (VSTD005129) file ID VU061537.D met the requirements except for Vinyl Chloride-d3 (-31.7%). As per method, up to two target analyte in opening and closing CCV are allowed to exceed the %D values. Therefore no further corrective action was taken.

The Continuing Calibration (VSTD005130) file ID VU061562.D met the requirements except for Vinyl Chloride-d3 (-35.9%). As per method, up to two target analyte in opening and closing CCV are allowed to exceed the %D values. Therefore no further corrective action was taken.

The Blank analysis did not indicate the presence of lab contamination.
The storage blank analysis did not indicate the presence of lab contamination.

Sample C0AF5 was diluted due to high concentration.

The sample C0AF7 was analyzed following the analysis of C0AF5. Sample C0AF5 had hit of compounds Ethylbenzene and 1,2,4-Trimethylbenzene with concentration above calibration levels. Sample C0AF7 had concentration of this compounds which are below CRQL. Therefore, as per method no instrument blank was required.

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

Calculation:

Low/Med Water Level Calculation

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

Where,
Ax = Area of the characteristic ion (EICP) for the compound to be measured.
Ais = Area of the characteristic ion (EICP) for the internal standard.
Amount of internal standard added in ng.
RRF = Mean Relative Response Factor from the initial calibration standard.
Vo = Total volume of water purged, in mL.
DF = Dilution Factor

Example calculation of **C0AF5** for **Benzene**:

Ax= 182148
Is = 125
RRF= 1.546
DF= 1
Ais= 139324
Vo. = 25

$$\text{Concentration in ug/L} = \frac{(182148)\,(125)\,(1)}{(139324)(1.546)(25)}$$

Reported Result = 4.23 ug/L

Final Reported Result = 4.2 ug/L

Relative Response Factor = **Dichlorodifluoromethane**: RUN **VU102324** for **0.5** ppb

$$RRF = \frac{\text{Area of compound}}{\text{Area of Internal Standard}} \times \frac{\text{Conc. of Internal Standard}}{\text{Conc. of Compound}}$$

$$RRF = \frac{5894}{198718} \times \frac{5.0}{0.5}$$

RRF= 0.297

Semivolatiles:

The samples were analyzed on instrument BNA_G 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.

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 11//05/2024, 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 except for,
C0AF5DL [Pyrene-d10 - 131%]. The DMC recovery requirements do not apply to samples that have been diluted, therefore no corrective action was taken.

The Internal Standards Areas met the acceptable requirements.
The Retention Times were acceptable for all samples.
The Blank Spike for {PB164728BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB164730BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB164732BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB164734BS} recoveries met the requirements for all compounds.
The Blank analysis did not indicate the presence of lab contamination.
The Tuning criteria met the requirements.
The Initial Calibration met the requirements.
The Continuous Calibration met the requirements.

Sample C0AF5 was diluted due to high concentration.

Samples C0AF5 has the concentration of target compound below method detection limits; therefore it is not reported as Hit in Form1.

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 = Vin = GPC factor (If no GPC is performed, GPC=1)
Vout = Volume of extract collected after GPC cleanup.

Example calculation of C0AF5 for Naphthalene:

Ax = 4877755
Ais = 704276
Is = 20
DF = 1
Vo = 1000
Vi = 1
Vt = 1000
RRF = 1.012
GPC = 1

$$\text{Concentration ug/L} = \frac{(4877755)\ (20)\ (1000)\ (1)\ (1)}{(704276)\ (1.012)\ (1000)\ (1)}$$

$$= 140 \text{ ug/L}$$

RRF Calculation of standard 20 ppb for **Naphthalene** with M instrument for method 11/07/2024.

$$\text{RRF} = \frac{\text{Area of compound}}{\text{Area of Internal Standard}} \times \frac{\text{Conc. of Internal Standard}}{\text{Conc. of Compound}}$$

$$= 563600/526355 \times 20/20$$

$$= 1.071 \text{ (Reported RRF)}$$

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.

The samples were analyzed on instrument BNA_N 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 11/05/2024. The analysis of SVOC-SIM-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 {PB164729BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB164731BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB164733BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB164735BS} recoveries met the requirements for all compounds.
The Blank analysis did not indicate the presence of lab contamination.
The Tuning criteria met requirements.
The Initial Calibration met requirements.
The Continuous Calibration met requirements.

Samples C0AG2 and C0AJ3 have the concentration of target compound below method detection limits; therefore it is not reported as Hit in Form1.

PB164731BL analyzed twice in different instrument, first time in BNA_N and Second time in BNA_M. However our sample associated with this BL run in BNA_N, so BNA_M instrument raw data reported as Screening Data in the package.

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

Example calculation of C0AF7 for Chrysene:

Ax = 1203
Ais = 8522
Is = 0.4

DF = 1
Vo = 1000
Vi = 1
Vt = 1000
RRF = 1.571
GPC = 1

Concentration ug/L = $\frac{(1203)\ (0.4)\ (1000)\ (1)\ (1)}{(8522)\ (1.571)\ (1000)\ (1)}$

= 0.040 ug/L

RRF Calculation of standard 0.4 ppb for **Naphthalene** with M instrument for method 11/06/2024.

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

= 11768/11347 X 0.4/0.4

= 1.037 (Reported RRF)

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.