SDG NARRATIVE

LAB NAME: Alliance Technical Group, LLC
CASE: 51838
SDG: C0AA0
CONTRACT: 68HERH20D0011
LAB CODE: ACE
LAB ORDER ID: P4625
MODIFICATION REF. NUMBER: NA

Sample ID	EPA Sample ID	Test	pH
P4625-01	C0AA0		1.0
P4625-01DL	C0AA0DL	SVOA_SIM	
P4625-02	C0AA2		1.0
P4625-03	C0AA4		1.0
P4625-04	C0AA5		1.0
P4625-05	C0AA7		1.0
P4625-06	C0AA9		1.0
P4625-08	C0AB0		1.0
P4625-09	C0AB2		1.0
P4625-10	C0AB4		1.0
P4625-11	C0AB6		1.0
P4625-11DL	C0AB6DL	SVOA	
P4625-12	C0AB8		1.0
P4625-13	C0AC0		1.0
P4625-14	C0AC2		1.0
P4625-15	C0AC4		1.0
P4625-16	C0AC6		1.0
P4625-17	C0AC8		1.0
P4625-18	C0AD3		1.0

06 Water samples were delivered to the laboratory intact on 10/30/2024.
11 Water samples were delivered to the laboratory intact on 10/31/2024.

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 1.9, 2.1, 1.7 degree Celsius for the samples received on 10/30/2024, 2.4, 2.1, 2.3, 2.4, 2.3 degree Celsius for the samples received on 10/31/2024.

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

The Surrogate recoveries met the acceptable criteria.
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 (VSTD005127) file ID VU061515.D met the requirements except for Vinyl Chloride-d3 (-30.9%). 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.

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 **C0AA5** for **Methylene chloride**:

Ax= 6281
Is = 125

RRF= 0.348
DF= 1
Ais= 169903
Vo. = 25
Concentration in ug/L = $\frac{(6281)\,(125)\,(1)}{(169903)(0.348)(25)}$

Reported Result = 0.53 ug/L

Final Reported Result = 0.53 ug/L

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

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

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

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_P 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 10/31/2024, 11/01/2024, 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.
The Internal Standards Areas met the acceptable requirements.
The Retention Times were acceptable for all samples.
The Blank Spike for {PB164568BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB164574BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB164576BS} 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.

Samples C0AB6 was diluted due to high concentrations.

Samples C0AB2 and C0AC0 have 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 C0AB6 for Naphthalene:

Ax = 1402217
Ais = 265913
Is = 20
DF = 1
Vo = 990
Vi = 1
Vt = 1000
RRF = 1.065
GPC = 1

$$\text{Concentration ug/L} = \frac{(1402217)\,(20)\,(1000)\,(1)\,(1)}{(265913)\,(1.065)\,(990)\,(1)}$$

$$= 100 \text{ ug/L}$$

RRF Calculation of standard 20 ppb for **Naphthalene** with P instrument for method 10/07/2024.

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

$$= 326983/315808 \times 20/20$$

= 1.035 (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 sample for Water sample was extracted by Method SFAM01.1 on 10/31/2024, 11/01/2024. 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 {PB164569BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB164575BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB164577BS} 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.

Sample C0AA0 was diluted due to high concentration.

Samples C0AA2 has 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:

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

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

Example calculation of C0AA0 for Naphthalene:

Ax = 8476
Ais = 13806
Is = 0.4
DF = 1
Vo = 1000
Vi = 1
Vt = 1000
RRF = 1.045
GPC = 1

Concentration ug/L = (851) (0.4) (1000) (1) (1)
(12949) (1.045) (990) (1)

= 0.24 ug/L

RRF Calculation of standard 0.4 ppb for **Naphthalene** with M instrument for method 10/31/2024.

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

= 11982/11544 X 0.4/0.4

= 1.038 (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.