SDG NARRATIVE

LAB NAME: Alliance Technical Group, LLC
CASE: 51838
SDG: C0AK4
CONTRACT: 68HERH20D0011
LAB CODE: ACE
LAB ORDER ID: P4715
MODIFICATION REF. NUMBER: NA

Sample ID	EPA Sample ID	Test	pH
P4715-01	C0AK4		1.0
P4715-02	C0AK8		1.0
P4715-03	C0AL0		1.0
P4715-03DL	C0AL0DL	Trace-VOA	1.0
P4715-05	C0AK0		1.0
P4715-06	C0AL5		1.0
P4715-07	C0AL7		1.0
P4715-08	C0AL9		1.0
P4715-09	C0AM0		1.0
P4715-09DL	C0AM0DL	SVOA-SIM	
P4715-10	C0AM2		1.0
P4715-11	C0AM4		1.0
P4715-12	C0AK2		1.0
P4715-13	C0AK6		1.0
P4715-14	C0AL1		1.0
P4715-15	C0AL3		1.0
P4715-16	C0AM6		1.0
P4715-16DL	C0AM6DL	Trace-VOA	1.0

03 Water samples were delivered to the laboratory intact on 11/05/2024.
12 Water samples were delivered to the laboratory intact on 11/07/2024.

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

The temperature of the samples was measured using an I R Gun. The samples temperature was 2.3 degree Celsius for the samples received on 11/05/2024. The samples temperature was 1.6, 1.9, 2.3, 1.7, 2.2, 2.1 degree Celsius for the samples received on 11/07/2024.

Shipping Discrepancies and/or QC issues:

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

Resolution: 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_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.
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 criteria met requirements.

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

Samples C0AL0, C0AM6 were diluted due to high concentrations.

The sample C0AK0 was analyzed following the analysis of C0AM6. Samples C0AM6 had hit of compound Methylene chloride with concentration above calibration levels. Sample C0AK0 have not detected of the compound Methylene chloride. 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 **C0AK4** for **Benzene**:

Ax= 79568
Is = 125
RRF= 1.374
DF= 1
Ais= 311188
Vo. = 25

$$\text{Concentration in ug/L} = \frac{(79568)\,(125)\,(1)}{(311188)(1.374)(25)}$$

Reported Result = 0.93 ug/L

Final Reported Result = 0.93 ug/L

Relative Response Factor = **Dichlorodifluoromethane**: RUN **VV110624** for **0.5** ppb

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

$$RRF = \frac{14652}{284979} \times \frac{5.0}{0.5}$$

RRF= 0.514

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 11//08/2024, 11/09/2024 and 11/10/2024, 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 {PB164817BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB164836BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB164838BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB164840BS} 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.

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 C0AM0 for Pentachlorophenol:

Ax = 17059
Ais = 853786
Is = 20
DF = 1
Vo = 990
Vi = 1
Vt = 1000
RRF = 0.122
GPC = 1

$$\text{Concentration ug/L} = \frac{(17059)\,(20)\,(1000)\,(1)\,(1)}{(853786)\,(0.122)\,(990)\,(1)}$$

$$= 3.3 \text{ ug/L}$$

RRF Calculation of standard 20 ppb for **Naphthalene** with G instrument for method 11/06/2024.

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

= 267121/252685 X 20/20

= 1.057 (Reported RRF)

Semivolatiles SIM:

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 11/08/2024, 11/09/2024 and 11/10/2024. 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 {PB164818BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB164837BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB164839BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB164841BS} 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 C0AM0 was diluted due to high concentration.

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 C0AM0 for Pentachlorophenol:

Ax = 22201
Ais = 12966
Is = 0.4
DF = 1
Vo = 990
Vi = 1
Vt = 1000
RRF = 0.093
GPC = 1

$$\text{Concentration ug/L} = \frac{(22201)\,(0.4)\,(1000)\,(1)\,(1)}{(12966)\,(0.093)\,(990)\,(1)}$$

= 7.4 ug/L

RRF Calculation of standard 0.4 ppb for **Naphthalene** with N instrument for method 11/16/2024.

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

= 6250/5912 X 0.4/0.4

= 1.057 (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.