SDG NARRATIVE

LAB NAME: Alliance Technical Group, LLC
CASE: 51736
SDG: A4E60
CONTRACT: 68HERH20D0011
LAB CODE: ACE
LAB ORDER ID: P4492
MODIFICATION REF. NUMBER: NA

Sample ID	EPA Sample ID	Test	pH
P4492-01	A4E60		
P4492-01DL	A4E60DL	VOA	
P4492-02	A4E61		
P4492-02DL	A4E61DL	SVOA	
P4492-03	A4F29		
P4492-04MS	A4F29MS		
P4492-05MSD	A4F29MSD		
P4492-06	A4F30		
P4492-08	A4EL4		
P4492-09	A4EN0		
P4492-10	A4EN8		
P4492-11	A4EQ6		
P4492-12	A4ER0		
P4492-13	A4ET0		
P4492-14	A4EW6		
P4492-15	A4EY1		
P4492-16	A4EY9		
P4492-17	A4EZ8		
P4492-17RE	A4EZ8RE	VOA	
P4492-18	A4FF1		5.0

06 Soil samples were delivered to the laboratory intact on 10/23/2024.
10 Soil samples were delivered to the laboratory intact on 10/24/2024.
01 Water sample was delivered to the laboratory intact on 10/24/2024.

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

The temperature of the samples was measured using an I R Gun. The samples temperature was 2.4 degree Celsius for the samples received on 10/23/2024, 2.9 degree Celsius for the samples received on 10/24/2024.

Discrepancies with tags, jars, and/or COC

Issue 01: "Lab has received trip blank samples without any preservation therefore, Lab would like to confirm that these trip blanks have pH more than 2 due to samples were not preserved."

Resolution 01: "Confirmed. Please have the lab proceed with analysis of these trip blanks."

Low Volatiles:

The analysis performed on instrument MSVOA_U were done using GC column RXI-624SIL MS 30m 0.18mm 1.4 um. Cat#13868.

The analysis performed on instrument MSVOA_W were done using GC column RXI-624SIL MS 30m 0.18mm 1.4 um. Cat#13868.

The analysis performed on instrument MSVOA_X were done using GC column RXI-624SIL MS 30m 0.18mm 1.4 um. Cat#13868.

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

The Holding Times were met for all analysis.

The Surrogate recoveries met the acceptable criteria except for
A4E60 [1,1,2,2-Tetrachloroethane-d2 - 123%, 2-Hexanone-d5 - 141%],
A4E60DL [1,1,2,2-Tetrachloroethane-d2 - 124%],
A4F29 [1,1-Dichloroethene-d2 - 43%],
A4F30 [1,1-Dichloroethene-d2 - 44%],
A4EL4 [1,1-Dichloroethene-d2 - 42%],
A4EN0 [1,1-Dichloroethene-d2 - 44%, 2-Hexanone-d5 - 156%],
A4EN8 [1,1-Dichloroethene-d2 - 44%],
A4EQ6 [1,1-Dichloroethene-d2 - 40%, 1,2-Dichloroethane-d4 - 69%],
A4ET0 [1,1-Dichloroethene-d2 - 41%],
A4EW6 [1,1-Dichloroethene-d2 - 44%],
A4EZ8 [1,1,2,2-Tetrachloroethane-d2 - 195%, 1,1-Dichloroethene-d2 - 40%, 1,2-Dichloroethane-d4 - 142%, 1,2-Dichloropropane-d6 - 139%, 2-Hexanone-d5 - 139%],
A4EZ8RE [1,1,2,2-Tetrachloroethane-d2 - 136%, 1,1-Dichloroethene-d2 - 116%, 1,2-Dichlorobenzene-d4 - 126%, 1,2-Dichloroethane-d4 - 132%, 1,2-Dichloropropane-d6 - 124%, 2-Butanone-d5 - 144%, 2-Hexanone-d5 - 151%] and

A4FF1 [1,2-Dichlorobenzene-d4 - 125%, 1,2-Dichloropropane-d6 - 120%, Chloroethane-d5 - 67%].As per method, up to three surrogates are allowed to fail. No corrective action was taken except for Sample A4EZ8 failed for more than three surrogates, as corrective action this sample was reanalyzed and confirmed for failure.

The Internal Standards Areas met the acceptable requirements except for A4EZ8 as corrective action this sample was reanalyzed, however reanalyzed was fail for surrogates recoveries and both run are reported.

Instrument Performance Check met requirements.
The Retention Times were met for all samples.
The Tuning criteria met requirements.
The MS {A4F29MS} recovery met the requirements for all compounds.
The MSD {A4F29MSD} recovery met the requirements for all compounds.
The RPD {A4F29MSD} RPD met the requirements for all compounds.
The Initial Calibration met the requirements.

The Continuing Calibration (VSTD050539) file ID VW030781.D met the requirements except for Toluene-d8 (20.3%). 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 (VSTD025541) file ID VW030801.D met the requirements except for Carbon disulfide (-36.1%). 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 (VSTD025543) file ID VW030828.D met the requirements except for 1,1-Dichloroethene-d2 (-27.4%). 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 did not indicate the presence of lab contamination.

Sample A4E60 was diluted due to high concentration.

See **Manual Integration report f**or 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

Low/Med Level Soil/Sediment Calculation

$$\text{Concentration in ug/Kg dry Weight basis)} = \frac{(Ax)(Is)(Df)}{(Ais)(RRF)(Ws)(D)}$$

Where,
Ax = Area for the compound to be measured
Ais = Area for the specific internal standard
Is = Amount of internal standard added in Nano grams (ng)
RRF = Relative response factor of the calibration standard.
Df = Dilution factor
Ws= Weight of sample
$D = \frac{100 - \%\text{moisture}}{100}$

Example Calculation for sample: **A4E60** for **Methylene chloride**:

Ax= 313325
Is= 250
RRF= 0.378
DF=1
Ais= 262867
Ws= 5.00
D= 1

$$\text{Concentration in ug/KG} = \frac{(313325)\ (250)\ (1)}{(262867)\ (0.378)\ (5.00)\ (1)}$$

$$= 157.66 \text{ ug//Kg}$$

Final Reported Results = 160 ug/Kg

Relative Response Factor = **Dichlorodifluoromethane**: RUN **VW100924** for **2.5** ppb

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

RRF= $\frac{11869}{356470} \times \frac{25}{2.5}$

RRF= 0.333

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.

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 for soil sample was extracted by Method SFAM01.1 on 10/25/2024, The analysis of SVO-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,
A4EQ6 [4,6-Dinitro-2-methylphenol-d2 - 8%, 4-Nitrophenol-d4 - 9%] and
A4EW6 [4,6-Dinitro-2-methylphenol-d2 - 8%, 4-Methylphenol-d8 - 8%]. As per method four surrogates are allowed to fail. Therefore no further corrective action was taken.

The Internal Standards Areas met the acceptable requirements.
The Retention Times were acceptable for all samples.
The MS {A4F29MS} recovery met the requirements for all compounds.
The MSD {A4F29MSD} recovery met the requirements for all compounds.
The RPD {A4F29MSD} RPD met the requirements for all compounds
The Blank Spike for {PB164416BS} 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.

The Sample A4EN8, A4ET0, A4EW6, A4F29 and A4F30 have the concentration of target compound below method detection limits; therefore it is not reported as Hit in Form1.

Sample A4E61 was diluted due to high concentration.

Concentration of SOIL Sample:

Concentration ug/Kg,

(dry weight basis) = (Ax) (Is) (Vt) (DF) (GPC)

(Ais) (RRF) (Vi) (Wt) (D)

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.
Vi = Volume of extract injected in microliters (uL)
Vt = Volume of concentrated extract in microliters (uL)
Wt = Weight of the original sample extracted in g
Df = Dilution factor
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.
D= 100 - %moisture

100

Example calculation of A4E61 for Phenol:

Ax = 627719
Ais = 173014
Is = 20
Vi = 1
Vt = 500
Wt = 30.2
Df = 1
RRF = 1.789
GPC = 2
D= 1

Concentration

(dry weight basis) ug/Kg = (627719) (20) (500) (1) (2)

(173014) (1.789) (1) (30.2) (1)

= 1300 ug/Kg

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

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

= 326983/315808 X 20/20

= 1.035 (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.