

**SDG NARRATIVE****LAB NAME: Alliance Technical Group, LLC****CASE: 51793****SDG: BHK69****CONTRACT: 68HERH20D0011****LAB CODE: ACE****LAB ORDER ID: P4669****MODIFICATION REF. NUMBER: NA**

Sample ID	EPA Sample ID	pH
P4669-01	BHK69	
P4669-02MS	BHK69MS	
P4669-03MSD	BHK69MSD	

03 Soil samples were delivered to the laboratory intact on 11/01/2024.

Test requested on the Chain of Custody was Semivolatile Organic, Semivolatile Organic-SIM 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 11/01/2024.

**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.

Semis volatile Organic for soil sample was extracted by Method SFAM01.1 on 11/03/2024, The analysis of SVO-PAH-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 MS {BHK69MS} recovery met the requirements for all compounds.

The MSD {BHK69MSD} recovery met the requirements for all compounds.

The RPD {BHK69MSD} RPD met the requirements for all compounds

The Blank Spike for {PB164616BS} 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 SOIL Sample:

Concentration ug/Kg,

$$(\text{dry weight basis}) = \frac{(A_x) (I_s) (V_t) (D_F) (GPC)}{(A_{is}) (RRF) (V_i) (W_t) (D)}$$

Where,

$A_x$  = Area of the characteristic ion for the compound to be measured.

$A_{is}$  = Area of the characteristic ion for the internal standard.

$I_s$  = Amount of internal standard injected in ng.

$V_i$  = Volume of extract injected in microliters (uL)

$V_t$  = Volume of concentrated extract in microliters (uL)

$W_t$  = Weight of the original sample extracted in g

$D_f$  = Dilution factor

$RRF$  = Mean Relative Response Factor determined from the initial calibration standard.

$GPC = V_{in} = GPC \text{ factor}$  (If no GPC is performed,  $GPC=1$ )

$V_{out}$  = Volume of extract collected after GPC cleanup.

$D = 100 - \% \text{moisture}$

$$\frac{\text{-----}}{100}$$

**No positive target compounds were detected in the samples.**

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

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

$$= 267121/252685 \times 20/20$$

$$= 1.057 \text{ (Reported RRF)}$$

### 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.

Semis volatile Organic sample for Soil sample was extracted by Method SFAM01.1 on 11/03/2024. 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 MS {BHK69MS} recovery met the requirements for all compounds.  
 The MSD {BHK69MSD} recovery met the requirements for all compounds.  
 The RPD {BHK69MSD} RPD met the requirements for all compounds.  
 The Blank Spike for {PB164617BS} 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.

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

### Concentration of SOIL Sample:

Concentration ug/Kg,

$$\begin{aligned}
 (\text{dry weight basis}) = & \frac{(A_x) (I_s) (V_t) (DF) (GPC)}{(A_{is}) (\overline{RRF}) (V_i) (W_t) (D)}
 \end{aligned}$$

Where,

A<sub>x</sub> = Area of the characteristic ion for the compound to be measured.

A<sub>is</sub> = Area of the characteristic ion for the internal standard.

I<sub>s</sub> = Amount of internal standard injected in ng.

V<sub>i</sub> = Volume of extract injected in microliters (uL)

V<sub>t</sub> = Volume of concentrated extract in microliters (uL)

W<sub>t</sub> = Weight of the original sample extracted in g

D<sub>f</sub> = Dilution factor

RRF = Mean Relative Response Factor determined from the initial calibration standard.

GPC =  $\frac{V_{in}}{V_{out}}$  = GPC factor (If no GPC is performed, GPC=1)

V<sub>out</sub> = Volume of extract collected after GPC cleanup.

$$D = \frac{100 - \% \text{moisture}}{100}$$

### Example calculation of BHK69 for Pyrene:

$$A_x = 3129$$

$$A_{is} = 9101$$

$$I_s = 0.4$$

$$V_i = 1$$

$$V_t = 500$$

$$W_t = 30.1$$

$$Df = 1$$

$$RRF = 1.607$$

$$GPC = 2$$

$$D = 0.889$$

Concentration

$$(\text{dry weight basis}) \text{ ug/Kg} = \frac{(3129) (0.4) (500) (1) (2)}{(9101) (1.607) (1) (30.1) (0.889)}$$

$$= 3.2 \text{ ug/Kg}$$

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

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

$$= 11768/11347 \times 0.4/0.4$$

$$= 1.037 \text{ (Reported RRF)}$$

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.