# SDG NARRATIVE

**LAB NAME: Alliance Technical Group, LLC**
**CASE: 51802**
**SDG: C0CC1**
**CONTRACT: 68HERH20D0011**
**LAB CODE: ACE**
**LAB ORDER ID: P4687**
**MODIFICATION REF. NUMBER: NA**

| Sample ID | EPA Sample ID | pH |
|---|---|---|
| P4687-01 | C0CB8 | |
| P4687-02 | C0CC1 | |
| P4687-03 | C0CN8 | |
| P4687-04 | C0CP2 | |
| P4687-05 | C0CD0 | |
| P4687-06 | C0CG4 | |
| P4687-07 | C0CB8 | |
| P4687-08 | C0CC5 | |
| P4687-09 | C0CE4 | |
| P4687-10 | C0CD8 | |
| P4687-11 | C0CN9 | |
| P4687-12 | C0CP3 | |
| P4687-13 | C0CP2 | |
| P4687-14 | C0CD7 | |
| P4687-15 | C0CG6 | |
| P4687-16 | C0CD6 | |
| P4687-17 | C0CD4 | |
| P4687-18MS | C0CD4MS | |
| P4687-19MSD | C0CD4MSD | |
| P4687-20 | C0CD6 | |
| P4687-21 | C0CD5 | |
| P4687-22 | C0CC8 | |
| P4687-23 | C0CC7 | |
| P4687-24 | C0CP8 | |
| P4687-25 | C0CR5 | |

02 Water samples were delivered to the laboratory intact on 11/02/2024.
05 Water samples were delivered to the laboratory intact on 11/05/2024.

09 Water samples were delivered to the laboratory intact on 11/06/2024.
09 Water samples were delivered to the laboratory intact on 11/07/2024.

Test requested on the Chain of Custody was Semi volatile Organic, Pesticide, and Aroclor 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 11/02/2024, 2.4, 2.6, 2.0 degree Celsius for the samples received on 11/05/2024, 2.3, 2.4, 2.6, 2.3, 2.4, 2.7 degree Celsius for the samples received on 11/06/2024, 1.8, 1.6, 2.6, 2.0 ,2.8 1.7, 2.6 degree Celsius for the samples received on 11/07/2024,

**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.

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 sample for water sample was extracted by Method SFAM01.1 on 11//04/2024 and 11/09/2024, 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,
C0CC7 [4-Nitrophenol-d4 - 7%]. 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 Blank Spike for {PB164674BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB164832BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB164833BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB164834BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB164835BS} 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 C0CP8 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 C0CC5 for Phenol:**

Ax = 9313
Ais = 66523
Is = 20
DF = 1
Vo = 1000
Vi = 1
Vt = 1000
RRF = 1.544
GPC = 1

$$\text{Concentration ug/L} = \frac{(9313)\,(20)\,(1000)\,(1)\,(1)}{(66523)\,(1.544)\,(1000)\,(1)}$$

$$= 1.8 \text{ ug/L}$$

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

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

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

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

**Pesticides:**

The analyses for Pesticides were performed on instrument ECD_D. The front column is ZB-Multi-Residue-2 which is 30 meters, 0.32 mm ID, 0.2 um df. The rear column ZB-Multi-Residue-1 which is 30 meters, 0.32 mm ID, 0.50 um df.

The sample was analyzed on a single injection dual column system. To distinguish the second column analysis from the first column a -2 suffix was added to the file id on the form 1. These refer to forms were both columns are reported. Form 1s for the IBLK and PLCS are referenced as IBLK(1)/IBLK(2), MS(1)/MS(2), MSD(1)/MSD(2) and PLCS01(1) / PLCS01(2) respectively.

Pesticide sample was extracted by method SFAM01.1 on 11/07/2024 and analyzed on 11/08 and 11/09/2024. The sample was extracted and analyzed within contractual holding time.

The Surrogate recoveries met the acceptable criteria except for
C0CC5 [Decachlorobiphenyl(1) - 29%],
The SOW allows one surrogate to fail to meet the criteria per column. ((Please See Section 11.3.6 of Exhibit D Pesticide Analysis).

C0CD4MS met the requirements.
C0CD4MSD met the requirements.
The RPD met the requirements

The Blank analysis did not indicate the presence of lab contamination.
Blank and Laboratory Control Sample met the requirements.
Retention Times met the requirements.
Florisil check met the requirements.
Resolution Check met the requirements.
The Retention Times were acceptable for all samples.
The Initial Calibration met the requirements.
The Individual Mix A met the requirements.
The Individual Mix B met the requirements.
The PEM met the requirement.

Sample C0CG4 has the concentration of target compound - Heptachlor epoxide,
Samples C0CN9, C0CP2, C0CP3 have the concentration of target compound - delta-BHC,
Samples C0CP8,C0CR5 have the concentration of target compound - delta-BHC and Methoxychlor, 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.

**Calculation for the Concentration in Water Samples**

Concentration ug/L = $\frac{(Ax)\ (Vt)\ (DF)\ (GPC)}{(CF)\ (Vo)\ (Vi)}$

Where,
Ax = Response (peak area or height) of the compound to be measured.
CF = Mean Calibration Factor from the initial calibration (area/ng).
Vo = Volume of water extracted in mL.
Vi = Volume of extract injected in uL.
Vt = Volume of the concentrated extract in uL
GPC = $\frac{Vin}{Vout}$ = GPC factor (If no GPC is performed, GPC=1)
Vin = Volume of extract loaded onto GPC column.
Vout = Volume of extract collected after GPC cleanup.

**Example of Endosulfan I calculation**

Calibration Factor Calculation Endosulfan I in the first column

Calibration factor (CF) = $\frac{\text{peak area}}{\text{Mass injected in ng}}$

$= \frac{9516108}{5ng}$

= 1903220

Mean Calibration Factor = average of 5 point calibration factor

= 2025530

**No target Pesticides were detected in the samples.**

**Aroclors**:

The analyses were performed on instrument GCECD_R. The front column is ZB-MR1 which is 30 meters, 0.32 mm ID, 0.5 um df, Catalogue # 7HM-G016-17. The rear column is ZB-MR2 which is 30 meters, 0.32 mm ID, 0.25 µm; Catalogue # 7HM-G017-11.

The sample was analyzed on a single injection dual column system. To distinguish the second column analysis from the first column a -2 suffix was added to the file id on the form 1. These refer to forms were both columns are reported. Form 1s for the IBLK and ALCS are referenced as IBLK(1)/IBLK(2) , MS(1)/MS(2), MSD(1)/MSD(2) and ALCS01(1)/ALCS01(2) respectively.

Aroclor sample was extracted by Method SFAM01.1 on 11/07/2024 and analyzed on 11/11/2024. All the samples were subjected to a Sulfuric acid cleanup. The sample was extracted and analyzed within contractual holding time.

The Surrogate recoveries met the acceptable criteria.
C0CD4MS met the requirements.
C0CD4MSD met the requirements.
The RPD met the requirements
The Laboratory Control Sample met requirements.
The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements.
The Continuing Calibrations met the requirements.
The Retention Times were acceptable for all samples.

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

**Calculation for Concentration in Water Samples:**

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

Where,
Ax = Response (peak area or height) of the compound to be measured.
CF = Mean Calibration Factor from the initial calibration (area/ng).
Vo = Volume of water extracted in mL.
Vi = Volume of extract injected in uL.
Vt = Volume of the concentrated extract in uL
GPC = $\frac{Vin}{Vout}$ = GPC factor (If no GPC is performed, GPC=1)
Vin = Volume of extract loaded onto GPC column.
Vout = Volume of extract collected after GPC cleanup.
DF = Dilution Factor.

**Example of AR1260 calculation for Peak 1**

$$\text{Calibration factor Peak 1 100ppb ISTD Column1} = \frac{\text{peak area}}{\text{Mass injected ng}}$$

$$= \frac{4574028}{0.100}$$

= 45740280 calibration factor for Peak 1 100ppb

Average of 5 peaks = 39861589

**No target Aroclors were detected in the samples.**

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.