SDG NARRATIVE

LAB NAME: Alliance Technical Group, LLC
CASE: 51900
SDG: E29C5
CONTRACT: 68HERH20D0011
LAB CODE: ACE
LAB ORDER ID: Q1336
MODIFICATION REF. NUMBER: 3064.0

Sample ID	EPA Sample ID	pH
Q1336-01	E29C5	
Q1336-02	E29C7	
Q1336-03	E29C6	
Q1336-04	E29C9	
Q1336-05	E29D1	
Q1336-06	E29D2	
Q1336-07	E29D4	

07 Water samples were delivered to the laboratory intact on 02/07/2025.

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

The temperature of the samples was measured using an I R Gun. The samples temperature was 2.6, 3.0, 2.3 degree Celsius for the samples received on 02/07/2025.

Shipping Discrepancies and/or QC issues:

Issue: Laboratory QC is scheduled for SDGs E29A0, E29C3, E29C5 and E29C6 for water samples, but no samples were designated on the COC and no extra volume was received. The laboratory would like to proceed without Laboratory QC.

Resolution: Per Region 5, the laboratory will note the issue in the SDG Narrative and proceed without Laboratory QC for SDGs E29A0, E29C3, E29C5 and E29C6.

Semivolatiles:

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 02/07/2025 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 {PB166626BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB166629BS} 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 E29C9 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 = $\underline{Vin}$ = GPC factor (If no GPC is performed, GPC=1)
Vout = Volume of extract collected after GPC cleanup.

Example calculation of E29D1 for Phenol:

Ax = 78260
Ais = 408760
Is = 20
DF = 1
Vo = 990
Vi = 1
Vt = 1000
RRF = 1.817
GPC = 1

$$\text{Concentration ug/L} = \frac{(78260)\ (20)\ (1000)\ (1)\ (1)}{(408760)\ (1.817)\ (990)\ (1)}$$

$$= 2.1 \text{ ug/L}$$

RRF Calculation of standard 20 ppb for **Naphthalene** with P instrument for method 01/29/2025.

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

= 2498726/2130098 X 20/20

= 1.173 (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 samples for Water were extracted by Method SFAM01.1 on 02/07/2025.
The analysis of SVOCMS Group2 was based on method SFAM01.1_SIM. using MA 3064.0
See the MA instructions at the end of the Case Narrative.

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 {PB166627BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB166630BS} 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 the requirements.
The Continues Calibration met the requirements.

The Sample E29C5, E29C7, E29C9, E29D1, E29D2 and E29D4 have 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.
$GPC = \frac{Vin}{Vout}$ = GPC factor (If no GPC is performed, GPC=1)

Example calculation of **E29D1** for **Phenanthrene**:

Ax = 190
Ais = 188
Is = 0.4
DF = 1
Vo = 990
Vi = 1
Vt = 1000
RRF = 0.082
GPC = 1

$$\text{Concentration ug/L} = \frac{(190)\,(0.4)\,(1000)\,(1)\,(1)}{(188)\,(0.082)\,(990)\,(1)}$$

$$= 0.050 \text{ ug/L}$$

RRF Calculation of standard 0.4 ppb **Naphthalene** with instrument M for method 02/12/2025.

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

= 15248/14400 X 0.4/0.4

= 1.059 (Reported RRF)

Pesticides:

The analyses for Pesticides were performed on instrument ECD_D. The front column is ZB-Multi-Residue-1 which is 30 meters, 0.32 mm ID, 0.50 um df. The rear column ZB-Multi-Residue-2 which is 30 meters, 0.32 mm ID, 0.25 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), and PLCS01(1) / PLCS01(2) respectively.

Pesticide sample was extracted by method SFAM01.1 on 02/11/2025 and analyzed on 02/12/2025 and 02/13/2025. The sample was extracted and analyzed within contractual holding time.

The Surrogate recoveries met the acceptable criteria.
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.

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

Calculation for the 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

$$GPC = \frac{Vin}{Vout} = \text{GPC factor (If no GPC is performed, GPC=1)}$$

Vin = Volume of extract loaded onto GPC column.

Vout = Volume of extract collected after GPC cleanup.

Example of Delta-BHC calculation
Calibration Factor Calculation delta-BHC in the first column

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

$$= \frac{19256099}{0.005\text{ng}}$$

$$= 3851220000$$

Mean Calibration Factor = average of 5 point calibration factor

$$= 4132340000$$

Sample **E29D1**
Ax = 10865061
CF = 4132340000
Vo = 1000
Vi = 1
Vt = 10000
DF = 1
GPC = 1

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

$$= \frac{(10865061)\ (10000)\ (1.0)\ (1.0)}{(4132340000)(1.0)(1000)}$$

Reported Results (ug/L) = 0.026

Aroclors:

The analyses were performed on instrument GCECD_Q. 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) and ALCS01(1)/ALCS01(2) respectively.

Aroclor sample was extracted by Method SFAM01.1 on 02/11/2025 and analyzed on 02/11/2025 and 02/12/2025. 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.
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

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

$$= \frac{37848535}{0.100}$$

= 378485350 calibration factor for Peak 1 100ppb

Average of 5 peaks = 346327350

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.