SDG NARRATIVE

LAB NAME: Alliance Technical Group, LLC
CASE: 51900
SDG: E2948
CONTRACT: 68HERH20D0011
LAB CODE: ACE
LAB ORDER ID: Q1184
MODIFICATION REF. NUMBER: 3064.0

Sample ID	EPA Sample ID	Test	pH
Q1184-01	E2948		
Q1184-02	E2949		
Q1184-03	E2955		
Q1184-04	E2956		
Q1184-05	E2957		
Q1184-06	E2960		
Q1184-07	E2961		
Q1184-08	E2962		
Q1184-09	E2959		
Q1184-10MS	E2959MS		
Q1184-11MSD	E2959MSD		
Q1184-12	E2963		
Q1184-12DL	E2963DL	SVOA,SVOA-SIM	
Q1184-13	E2967		
Q1184-14	E2965		
Q1184-14DL	E2965DL	SVOA,SVOA-SIM	
Q1184-15	E2966		
Q1184-15DL	E2966DL	SVOA,SVOA-SIM	
Q1184-16	E2958		
Q1184-17	E2971		

08 Water samples were delivered to the laboratory intact on 01/24/2025.
09 Water samples were delivered to the laboratory intact on 01/27/2025.

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

The temperature of the samples was measured using an I R Gun. The samples temperature was 1.3, 1.9, 1.5, 1.1 degree Celsius for the samples received on 01/24/2025, 2.1, 3.3, 2.0, 3.0 degree

Celsius for the samples received on 01/27/2025.

Shipping Discrepancies and/or QC issues:

Issue 1: Two Ambers were received for sample E2948. Both ambers have around 800mL of sample volume each but SVOA, SVOA SIM, PEST and ARO analyses are all required. The laboratory does not have enough volume to complete all analyses and would like to proceed with SVOA and SVOA SIM but can only complete either PEST or ARO analysis with the remaining amber.

Resolution 1: Per Region 5, the laboratory will prioritize SVOA and SVOA SIM analysis and then proceed with ARO analysis. Please note the issue in the SDG Narrative.

Issue 2: Two Ambers were received for sample E2971, totaling 1000mL of sample volume. SVOA, SVOA SIM, PEST and ARO analyses are required but the laboratory does not have enough volume to complete all analyses and would like direction on how to proceed.

Resolution 2: Per Region 5, the laboratory will note the issue in the SDG Narrative and proceed with SVOA and SVOA SIM analysis for sample E2971.

LAB: “Lab has received water samples for SVOA full scan and SVOA SIM analysis. Lab has analyzed undiluted SVOA analysis for the sample E2965 & E2966. Samples have extremely huge interference where samples were not be able to quantifiable for full scan. In this case, Lab has analyzed dilution analysis for these two samples. However, samples are positive with very high concentration of target analytes and required further dilution to bring target analytes within calibration range. In this case, Lab will report dilution analysis as first analysis and further dilution in final electronic deliverables for these two samples.

Lab has also analyzed the above samples E2965, E2966 & E2963 as well for SVOA-SIM analysis. Samples found positive with high concentration of target analytes. Due to very huge matrix interference, samples have one of the internal standard recoveries outside the QC limits and also samples required further dilution analysis as you can see attached form-1 with quant reports for your reference. In this case, Lab will report undiluted SVOA-SIM analysis with internal standard failure and further dilution for final electronic deliverables.

Please see attached.”

REGION: “The lab can perform the second dilution and report results from each dilution in the EDD.”

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.

Semis volatile Organic sample for water sample was extracted by Method SFAM01.1 on 01/27/2025 and 01/28/2025, 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 except for,
E2963 [2,4-Dichlorophenol-d3 - 200%, 2-Nitrophenol-d4 - 186%, Nitrobenzene-d5 - 199%],
E2963DL [4-Nitrophenol-d4 - 0%],
E2965DL [4,6-Dinitro-2-methylphenol-d2 - 0%, 4-Nitrophenol-d4 - 0%],
E2966DL [1,4-Dioxane-d8 - 0%, 2,4-Dichlorophenol-d3 - 150%, 4,6-Dinitro-2-methylphenol-d2 - 0%, 4-Chloroaniline-d4 - 0%, 4-Nitrophenol-d4 - 0%, Acenaphthylene-d8 - 132%, Anthracene-d10 - 188%, Benzo(a)pyrene-d12 - 143%, Bis-(2-Chloroethyl)ether-d8 - 133%, Fluorene-d10 - 150%, Nitrobenzene-d5 - 154%, Pyrene-d10 - 140%].The DMC recovery requirements do not apply to samples that have been diluted. As per method four surrogates are allowed to fail. Therefore no further corrective action was taken.

And,

E2965 [2,4-Dichlorophenol-d3 - 149%, 2-Nitrophenol-d4 - 146%, 4,6-Dinitro-2-methylphenol-d2 - 0%, 4-Nitrophenol-d4 - 0%, Nitrobenzene-d5 - 140%].
E2966 [2,4-Dichlorophenol-d3 - 241%, 2-Nitrophenol-d4 - 235%, 4-Nitrophenol-d4 - 0%, Anthracene-d10 - 139%, Benzo(a)pyrene-d12 - 134%, Fluorene-d10 - 139%, Nitrobenzene-d5 - 231%, Pyrene-d10 - 137%]. Samples E2965, E2966 was diluted with 20X . Samples have extremely huge interference where samples were not be able to quantifiable for full scan. In this case, Lab has analyzed dilution analysis for these two samples. However, samples are positive with very high concentration of target analytes and required further dilution to bring target analytes within calibration range. In this case, Lab has reported dilution analysis as first analysis with Surrogate failed and further dilution in final Hardcopy for these two samples. Please see email communication after SDG narrative

The Internal Standards Areas met the acceptable requirements.
The Retention Times were acceptable for all samples.
The MS {E2959MS} recovery met the requirements for all compounds.
The MSD {E2959MSD} recovery met the requirements for all compounds.
The MSD {E2959MSD} RPD met the requirements for all compounds.
The Blank Spike for {PB166304BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB166307BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB166311BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB166314BS} 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 (SSTD020081) with File ID BM049499.D met the requirement except for Benzaldehyde (42.0%), Under this Continuous Calibration no samples were analyzed, therefore no corrective action was taken.

The End Continuous Calibration (SSTD020089) with File ID BM049562.D,. met the requirement except for Hexachlorocyclopentadiene (-65.5%), 2,4-Dinitrophenol (-80.2, %), 4,6-Dinitro-2-methylphenol (-80.2%), 4,6-Dinitro-2-methylphenol-d2 (-80.6%), As per method, the %D up to six Compounds are allowed to fail to meet the minimum criteria No further corrective action was taken

Samples E2963, E2965 and E2966 were diluted due to high concentrations.

Samples E2963 and E2966 have the concentration of target compound below method detection limits; therefore it is not reported as Hit in Form1.

Samples E2965, E2966 was diluted with 20X . Samples have extremely huge interference where samples were not be able to quantifiable for full scan. In this case, Lab has analyzed dilution analysis for these two samples. However, samples are positive with very high concentration of target analytes and required further dilution to bring target analytes within calibration range. In this case, Lab has reported dilution analysis as first analysis and further dilution in final Hardcopy for these two samples. Please see email communication after SDG 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 = $\frac{Vin}{}$ = GPC factor (If no GPC is performed, GPC=1)
Vout = Volume of extract collected after GPC cleanup.

Example calculation of E2963 for Phenol:

Ax = 1854187
Ais = 220021
Is = 20
DF = 1

Vo = 990
Vi = 1
Vt = 1000
RRF = 1.703
GPC = 1

Concentration ug/L = $\frac{(1854187)\ (20)\ (1000)\ (1)\ (1)}{(220021)\ (1.703)\ (990)\ (1)}$

= 100 ug/L

RRF Calculation of standard 20 ppb for **Naphthalene** with M instrument for method 01/28/2025.

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

= 733886/607729 X 20/20

= 1.208 (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 samples for Water were extracted by Method SFAM01.1 on 01/27/2025 and 01/28/2025. 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 except for,
E2965DL [2-Methylnaphthalene-d10 - 160%], The DMC recovery requirements do not apply to samples that have been diluted.

The Internal Standards Areas met the acceptable requirements except for E2963, E2965 and E2966. Samples found positive with high concentration of target analytes. Due to very huge matrix interference, samples have one of the internal standard recoveries outside the QC limits and also samples required further dilution analysis. In this case, Lab has reported undiluted SVOA-SIM analysis with internal standard failure and further dilution for final Hardcopy. .Please see EPA communication after SDG Narrative.

The Retention Times were acceptable for all samples.
The MS {E2959MS} recovery met the requirements for all compounds.
The MSD {E2959MSD} recovery met the requirements for all compounds.

The MSD {E2959MSD} RPD met the requirements for all compounds.
The Blank Spike for {PB166305BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB166308BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB166312BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB166315BS} 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.

Samples E2963, E2965 and E2966 were diluted due to high concentrations.

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 **E2963** for **Acenaphthene**:

Ax = 15492
Ais = 25413
Is = 0.4
DF = 1
Vo = 990
Vi = 1
Vt = 1000
RRF = 1.388
GPC = 1

Concentration ug/L = $\frac{(15492)\ (0.4)\ (1000)\ (1)\ (1)}{(25413)\ (1.388)\ (990)\ (1)}$

= 0.18 ug/L

RRF Calculation of standard 0.4 ppb **Naphthalene** with instrument N for method 01/21/2025.

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

Area of Internal Standard Conc. of Compound

= 5142/4615 X 0.4/0.4

= 1.114 (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), MS(1)/MS(2), MSD(1)/MSD(2) and PLCS01(1) / PLCS01(2) respectively.

Pesticide sample was extracted by method SFAM01.1 on 01/28 and 01/30/2025 and analyzed on 01/29 and 01/30/2025. The sample was extracted and analyzed within contractual holding time.

The Surrogate recoveries met the acceptable criteria except for
E2959MS [Tetrachloro-m-xylene(2)-152%],
E2965 [Tetrachloro-m-xylene(2)-431%],
E2966 [Tetrachloro-m-xylene(2)-413%],
The SOW allows one surrogate to fail to meet the criteria per column. ((Please See Section 11.3.6 of Exhibit D Pesticide Analysis)

E2959MS met the requirements.
E2959MSD 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.

Samples E2963, E2965, E2966 and E2967 failed to meet the %D for the results between the two columns Criteria.

Sample E2966 failed for surrogate from PB166321. Therefore sample was Re-extracted and reanalyzed from PB166379.

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 trans-Chlordane calculation
Calibration Factor Calculation trans-Chlordane in the first column

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

$$= \frac{18192760}{5ng}$$

$$= 3638550$$

Mean Calibration Factor = average of 5 point calibration factor

= 3684100

Sample **E2963**
Ax = 13658323
CF = 3684100
Ws = 1000
Vi = 1
Vt = 10000
DF = 1
GPC = 1

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

$$= \frac{(13658323)\,(10000)\,(1.0)\,(1.0)}{(3684100)(1.0)(1000)}$$

$$= 0.0370$$

Reported Results (ug/L) = 0.037

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 01/28/2025, 01/29/2025 and analyzed on 01/28/2025, 01/30/2025 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 except for
E2965 [Tetrachloro-m-xylene(2) - 588%],
E2966 [Tetrachloro-m-xylene(2) - 560%],
The SOW allows one surrogate to fail to meet the criteria per column. ((Please See Section 11.3.6 of Exhibit D Aroclor Analysis.

E2959MS met the requirements.
E2959MSD 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.

Samples E2965, E2966 failed for surrogate from PB166320. Therefore sample was Re-extracted and reanalyzed from PB166344.

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 = Vin = GPC factor (If no GPC is performed, GPC=1)
Vout
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

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

$$= \frac{4732373}{0.100}$$

= 47323730 calibration factor for Peak 1 100ppb

Average of 5 peaks = 41448588

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.