

SDG NARRATIVE

LAB NAME: Alliance Technical Group, LLC CASE: 51868 SDG: A0AM1 CONTRACT: 68HERH20D0011 LAB CODE: ACE LAB ORDER ID: P4803 MODIFICATION REF. NUMBER: NA

Sample ID	EPA Sample ID	Test	pH
P4803-01	A0AM1		1.0
P4803-02	A0AP2		1.0
P4803-03	A0AP4		1.0
P4803-04	A0AP6		1.0
P4803-05	A0AP8		1.0
P4803-05DL	A0AP8DL	SVOA-SIM	
P4803-06	A0AQ1		1.0
P4803-06DL	A0AQ1DL	Trace-VOA	1.0
P4803-06DL	A0AQ1DL	SVOA-SIM	
P4803-07	A0AQ2		
P4803-07DL	A0AQ2DL	Trace-VOA, SVOA, SVOA-SIM, PEST	
P4803-07DL2	A0AQ2DL2	PEST	
P4803-10	A0AM2		1.0
P4803-11	A0AQ3		1.0
P4803-12	A0AQ5		1.0
P4803-12RE	A0AQ5RE	Trace-VOA-SIM	1.0
P4803-13	A0AQ7		1.0
P4803-14	A0AQ9		1.0
P4803-15	A0AM3		1.0
P4803-16	A0AR9		1.0
P4803-17	A0AS1		1.0
P4803-17RE	A0AS1RE	Trace-VOA-SIM	1.0
P4803-18	A0AS3		1.0
P4803-19	A0AS8		1.0
P4803-20	A0AS9		1.0

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



05 Water samples were delivered to the laboratory intact on 11/12/2024. 06 Water samples were delivered to the laboratory intact on 11/13/2024.

Test requested on the Chain of Custody was Trace Volatile Organic, Trace Volatile Organic-SIM, 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 2.3, 2.4, 1.2 degree Celsius for the samples received on 11/09/2024, 2.6, 2.0, 2.3, 2.1 degree Celsius for the samples received on 11/12/2024, 2.3, 2.1, 2.0, 2.7 degree Celsius for the samples received on 11/13/2024.

Shipping Discrepancies and/or QC issues:

Issue 1: SDG A0AM1 is open for water samples listed on the COC for PEST and ARO Laboratory QC. However, a sample was not designated for Laboratory QC and the laboratory did not receive enough volume for Laboratory QC. Therefore, the laboratory would like to proceed without Laboratory QC to keep holding time.

Resolution 1: Per Region 1, proceed without laboratory QC in order to make holding time. The laboratory should note the issue in the SDG Narrative and proceed with the analysis of the samples.

Issue 2: The laboratory received a PT sample for A0AQ2 listed analysis key as TVOA = TVOA SIM. The laboratory would like to confirm how to proceed with the analysis of this PT sample. The analysis key is also listed for all water samples as well.

Resolution 2: Per Region 1, the PT sample should be analyzed for TVOA. The laboratory should note the issue in the SDG Narrative and proceed with the analysis of the samples.

Issue 3: The laboratory received samples with analysis key SVOA and PAH SIM listed on the COC. The laboratory would like to confirm if they can proceed with SVOA full scan and SIM per scheduling.

Resolution 3: Per Region 1, proceed with SVOA full scan and PAH SIM per scheduling. The laboratory should note the issue in the SDG Narrative and proceed with the analysis of the samples.

LAB: "This is an ongoing case where Lab has analyzed samples for TVOA and TVOA-SIM analysis. Samples are having foamy nature therefore lab would like to confirm that can lab follow the below resolution for this case for TVOA and TVOA-SIM analysis?

Please see attachment for your reference for samples analyzed under this case."

REGION: "It is acceptable to use the earlier resolution for the other samples from the case."



Trace Volatiles:

The analysis performed on instrument MSVOA_U were done using GC column DB-624UI 20m 0.18mm 1.0 um. Cat#121-1324UI. The analysis of VOC-SFAM was based on method SFAM01.1_Trace.

The Surrogate recoveries met the acceptable criteria except for, A0AS9 [1,2-Dichlorobenzene-d4 - 123%], As per method, up to three surrogates are allowed to fail. No corrective action was taken.

The Internal Standards Areas met the acceptable requirements. Instrument Performance Check met requirements. The Retention Times met requirements. The Tuning criteria met requirements.

The %RSD met requirement for initial Calibration except for 1,1,2,2-Tetrachloroethane (20.9%) for the initial calibration dated 11/20/2024 with U instrument, As per method, the %RSD up to two Compounds are allowed to fail to meet the minimum criteria as long as the compound meets the maximum of 40% RSD. No further corrective action was taken.

The Continuing Calibration (VSTD005142) file ID VU061755.D met the requirements except for 1,1-Dichloroethene-d2 (-28.4%). 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 analysis did not indicate the presence of lab contamination.

Lab has received water samples for TVOA analysis, Some of the samples were received with foamy nature of the samples and samples could not be analyzed undiluted due to foamy matrix. Therefore, as a precautionary step, Lab has analyzed Samples Samples A0AP6, A0AQ7, A0AS1, A0AS3, A0AS8 and A0AS9 were diluted with most plausible dilution factors, therefore lab reported diluted analysis for TVOA analysis as first analysis for final hard Copy, Please see EPA communication after SDG Narrative.

Samples A0AQ1, A0AQ2 were diluted due to high concentrations.

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

Calculation:

Low/Med Water Level Calculation



Concentration in ug/L = (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

Example calculation of **A0AM1** for **Acetone**:

Ax= 11069 Is = 125 RRF= 0.044 DF= 1 Ais= 182069 Vo. = 25 Concentration in ug/L = (11069)(125)(1)(182069)(0.044)(25)

Reported Result = 6.91 ug/L

Final Reported Result = 7.0 ug/L

Relative Response Factor = Dichlorodifluoromethane: RUN VU111324 for 0.5 ppb

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

 Area of Internal Standard
 Conc. of Compound
 Conc. of Compound
- $\begin{array}{rrr} \text{RRF}= & \underline{6608} \text{ X} & \underline{5.0} \\ & 195642 & 0.5 \end{array}$
- RRF= 0.338

Trace Volatiles SIM:

The analysis performed on instrument MSVOA_V were done using GC column DB-624UI 20m 0.18mm 1.0 um. Cat#121-1324UI. The analysis of VOC-SIM was based on method SFAM01.1_VOCSIM .

The Holding Times were met for all analysis.

The Surrogate recoveries met the acceptable criteria except for,



A0AQ5 [Vinyl Chloride-d3 – 185%], A0AS1 [1,2-Dichloropropane-d6 – 152%], A0AQ5RE [1,1,2,2-Tetrachloroethane-d2 - 121%, Vinyl Chloride-d3 - 143%], A0AS1RE [1 and2-Dichloropropane-d6 - 154%], Sample A0AQ5 and A0AS1 fail for Surrogate Recovery as a Corrective Action samples were reanalyzed and both the run are reported.

The Retention Times met requirements. The Internal Standards Areas met the acceptable requirements. Instrument Performance Check met requirements. The Tuning criteria met requirements.

The Initial Calibration met requirements. The Continuing Calibration met the requirements.

The Blank analysis did not indicate the presence of lab contamination. The Storage Blank analysis did not indicate the presence of lab contamination.

Lab has received water samples for TVOA-SIM analysis, Some of the samples were received with foamy nature of the samples and samples could not be analyzed undiluted due to foamy matrix. Therefore, as a precautionary step, Lab has analyzed Samples A0AP6, A0AP8, A0AQ1, A0AQ5, A0AQ5RE, A0AQ7, A0AS1, A0AS1RE, A0AS3, A0AS8 and A0AS9 were diluted with most plausible dilution factors, therefore lab reported diluted analysis for TVOA-SIM analysis as first analysis for final hard Copy, Please see EPA communication after SDG Narrative.

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

Calculation:

Concentration in ug/L = (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.

Is = 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.

Example Calculation for sample A0AS3 for Vinyl chloride:

Ax = 5574



Is = 12.5 RRF= 0.515 DF = 2 Ais = 8002 Vo. = 25 Concentration in ug/L = (5574)(12.5)(2)(8002) (0.515) (25)

= 1.35 ug/L

Reported Result = 1.4 ug/L

Relative Response Factor = Vinyl chloride: RUN VV111424 for 0.05 ppb

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

 $RRF = \frac{487}{10272} X \frac{0.5}{0.05}$

RRF = 0.474

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_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 11/14/2024 and 11/15/2024, 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.

The Internal Standards Areas met the acceptable requirements.

The Retention Times were acceptable for all samples.

The Blank Spike for {PB164977BS} recoveries met the requirements for all compounds.

The Blank Spike for {PB164978BS} recoveries met the requirements for all compounds.

The Blank Spike for {PB164980BS} recoveries met the requirements for all compounds.

The Blank Spike for {PB164997BS} 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.



Sample A0AQ2 was diluted due to high concentration.

Sample A0AQ1 has the concentration of target compound below method detection limits; therefore it is not reported as Hit in Form1.

Concentration of Water Sample:

Concentration ug/L = (Ax) (Is) (Vt) (DF) (GPC)

$$(Ais)$$
 $(R\overline{RF})$ (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 A0AP2 for Acetophenone:

Ax = 8893Ais = 57752 Is = 20 DF = 1 Vo = 1000 Vi = 1 Vt = 1000 RRF = 2.045 GPC = 1

Concentration ug/L = (8893)(20)(1000)(1)(1)(57752)(2.045)(1000)(1)

$$= 1.5 \text{ ug/L}$$

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

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



= 267121/252685 X 20/20

= 1.057 (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.

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 sample for Water sample was extracted by Method SFAM01.1 on 11/14/2024 and 11/15/2024. 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 Blank Spike for {PB164979BS} recoveries met the requirements for all compounds.

The Blank Spike for {PB164981BS} recoveries met the requirements for all compounds.

The Blank Spike for {PB164998BS} 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.

Sample A0AP8, A0AQ1 and A0AQ2 were diluted due to high concentration.

PB164981BL analyzed twice in different instrument, first time in BNA_M and Second time in BNA_N. However our sample associated with this BL run in BNA_M, so BNA_N instrument raw data reported as Screening Data in the package.

Sample A0AS1 has 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:

Concentration ug/L = (Ax) (Is) (Vt) (DF) (GPC)

(Ais) $(R\overline{RF})$ (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 = <u>Vin</u> = GPC factor (If no GPC is performed, GPC=1)
Vout

Example calculation of A0AP8 for Naphthalene:

Ax = 3926Ais = 10142Is = 0.4DF = 1Vo = 1000Vi = 1Vt = 1000RRF = 1.002GPC = 1

Concentration ug/L = (3926) (0.4) (1000) (1) (1)(10142) (1.002) (1000) (1)

= 0.16 ug/L

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

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

= 11768/11347 X 0.4/0.4

= 1.037 (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) and PLCS01(1) / PLCS01(2) respectively.

Pesticide sample was extracted by method SFAM01.1 on 11/13/2024 and analyzed on 11/14 and 11/19/2024. 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 Individual Mix B met the requirements. The PEM met the requirement.

Samples A0AQ2 and A0AQ2DL were diluted due to high concentrations.

Samples A0AQ2, A0AQ2DL, A0AQ2DL2, A0AS1, A0AS3, A0AS8 and A0AS9 failed to meet the %D for the results between the two columns Criteria.

Sample A0AS8, A0AS9 have the concentration of target compound - trans-chlordane, 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 = (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.

Example of Methoxychlor calculation

Calibration Factor Calculation Methoxychlor in the first column

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

$$=\frac{58120620}{50 \text{ng}}$$

Mean Calibration Factor = average of 5 point calibration factor

= 1136890

Sample A0AS3 Ax = 1191959CF = 1136890Ws = 990Vi = 1Vt = 10000DF = 1GPC = 1

Concentration ug/L (Dry weight basis) = (Ax) (Vt) (DF) (GPC)(CF) (Vi) (Ws)

 $= (\underline{1191959}) (10000) (1.0) (1.0) (1.0) (1.10) (1136890) (1.0) (990)$

Reported Results (ug/L) = 0.011

Aroclors:

The analyses were performed on instrument GCECD_Q, ECD_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 μ m; 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 11/13/2024 and analyzed on 11/13/2024, 11/14/2024, 11/22/2024 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. 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.

Sample A0AQ9 failed to meet the %D for the results between the two columns Criteria.

Samples for this SDG - A0AM1 (P4803) are analyzed in two different instrument ECD_Q & ECD_R, Therefore PB164953BL is analyzed in both instrument and reported from both instrument.

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

Calculation for Concentration in Water Samples:

Concentration ug/L = (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 AR1221 calculation for Peak 1



Calibration factor Peak 1 100ppb ISTD= Column2 peak area Mass injected ng

$$= \frac{8097123}{0.100}$$

= 80971230 calibration factor for Peak 1 100ppb

Average of 5 peaks = 71533276

Sample A0AQ2 Ax = 41577428CF = 71533276Vt = 10000Vo = 1.0Vi = 1000GPC = 1.0DF = 1.0

> Concentration ug/L = (Ax) (Vt) (DF) (GPC)(CF) (Vo) (Vi)

> > $= \frac{(41577428)(10000)(1.0)(1.0)}{(71533276)(1.0)(1000)}$

Peak 1 = 5.81

Average of 5 peaks = 5.73

Reported results = 5.7 ug/L



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.