

SDG NARRATIVE

LAB NAME: Alliance Technical Group, LLC CASE: 51868 SDG: A0AL0 CONTRACT: 68HERH20D0011 LAB CODE: ACE LAB ORDER ID: P4761 MODIFICATION REF. NUMBER: NA

Sample ID	EPA Sample ID	Test	pН
P4761-01	A0AL0		1.0
P4761-02	A0AL2		1.0
P4761-03	A0AL4		1.0
P4761-04	A0AL6		1.0
P4761-05	A0AL7		1.0
P4761-06	A0AL9		1.0
P4761-07	A0AM6		1.0
P4761-08	A0AM8		1.0
P4761-09	A0AN0		1.0
P4761-09DL	A0AN0DL	SVOA_SIM	
P4761-10MS	A0AN0MS		
P4761-11MSD	A0AN0MSD		
P4761-14	A0AK5		1.0
P4761-15	A0AK8		1.0
P4761-16	A0AM0		1.0
P4761-17	A0AN2		1.0
P4761-18	A0AN4		1.0
P4761-19	A0AN7		1.0
P4761-20	A0AN8		1.0
P4761-20DL	A0AN8DL	SVOA	
P4761-20DL	A0AN8DL	TVOA	1.0
P4761-21	A0AP0		1.0
P4761-21DL	A0AP0DL	TVOA	1.0
P4761-21RE	A0AP0RE	TVOA_SIM	1.0

11 Water samples were delivered to the laboratory intact on 11/07/2024. 08 Water samples were delivered to the laboratory intact on 11/08/2024.



2 of 14 Test requested on the Chain of Custody was Trace Volatile Organic, Trace Volatile Organic-SIM, Semi volatile Organic, Semi volatile 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 2.1, 2.2, 2.8, 2.0, 2.7, 1.7, 1.9, 1.8, 2.3, 1.8, 2.6 degree Celsius for the samples received on 11/07/2024, 2.7, 2.5, 2.6, 2.9, 2.8, 2.8, 3.1, 3.0 degree Celsius for the samples received on 11/08/2024.

Shipping Discrepancies and/or QC issues:

Issue 01: The laboratory received a sample listed on the COC as a Laboratory QC sample for TVOA SIM and TVOA. However Laboratory QC is not scheduled for TVOA SIM and TVOA analysis. The laboratory would like to know how to proceed.

Resolution 01: Per Region 1, proceed with the TVOA and TVOA SIM analysis without analysis of the listed QC samples for TVOA SIM and TVOA. The laboratory should note the issue in the SDG Narrative and proceed with the analysis of the samples.

Issue 02: MAs are not scheduled for the organic analyses. However, MA numbers 3125.0, 3069.1, and 3104.2 are listed on the COC Analysis key. The laboratory would like to know how to proceed.

Resolution 02: Per Region 1, proceed with the organic analyses without the MAs listed on the COC. The laboratory should note the issue in the SDG Narrative and proceed with the analysis of the samples.

Issue 03: The laboratory is scheduled for TVOA Analysis. However, on the COC, VOA analysis is also listed. The laboratory would like to know how to proceed.

Resolution 03: Per Region 1, proceed with TVOA analysis for the samples. The laboratory should note the issue in the SDG Narrative and proceed with the analysis of the samples.

Issue 04: "Lab has received water samples for TVOA & 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 A0AK8, A0AL2, A0AL4, A0AL7, A0AN2, A0AN4, A0AN8, A0AP0 with most plausible dilution factors as you can see attached quant reports for your reference. Also, due to matrix interference, sample A0AN8 has surrogates recovery outside the QC limits for TVOA-SIM analysis therefore lab would like to confirm that lab will report dilution analysis for TVOA and TVOA-SIM analysis as first analysis for final electronic deliverables.

Resolution 04: "In response to the lab's question below the dilutions are acceptable and it is acceptable for the lab to report dilution analysis for TVOA and TVOA-SIM analysis as first analysis for final electronic deliverables."



Trace Volatiles:

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 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, A0AL4 [Toluene-d8 - 64%], A0AL7 [Toluene-d8 - 65%], A0AL9 [Toluene-d8 - 68%], A0AM6 [1,2-Dichlorobenzene-d4 - 80%, Benzene-d6 - 68%, Toluene-d8 - 58%], A0AM8 [Toluene-d8 - 68%], A0AM8 [Toluene-d8 - 67%], A0AN7 [Toluene-d8 - 67%], A0AN7 [Toluene-d8 - 65%], A0AN8 [1,2-Dichlorobenzene-d4 - 79%, Benzene-d6 - 66%, Chloroethane-d5 - 65% and Toluene-d8 - 57%], As per method, up to three surrogates are allowed to fail. No corrective action was taken. 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 Sample A0AN8 with most plausible dilution factor, Also, due to matrix interference has surrogates recovery outside the OC limits

therefore lab reported diluted analysis for TVOA analysis as first analysis for final hard Copy, Please see EPA communication after SDG Narrative.

The Internal Standards Areas met the acceptable requirements.

Instrument Performance Check met requirements.

The Retention Times met requirements.

The Tuning criteria met requirements.

The initial Calibration criteria met requirements.

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 Continuing Calibration (VSTD005302) file ID VV038034.D met the requirements except for Methylcyclohexane (-31.7%). 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.



4 of 14

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

The storage blank analysis indicated presence of Methylene chloride [0.65ug/L] FileID: VU061810.D {VHBLK001} due to lab contamination. As per method, less than the 2 times respective CRQL is allowed to fail for Methylene chloride. Therefore no further corrective action was taken.

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 A0AL4, A0AL7, A0AK8 and A0AN8 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 A0AN8, A0AP0 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 **A0AL0** for **Chloroform**:

Ax= 23730 Is = 125 RRF= 0.780 DF= 1 Ais= 177226 Vo. = 25 Concentration in ug/L = (23730)(125)(1)(177226)(0.780)(25)



Reported Result = 0.86 ug/L

Final Reported Result = 0.86 ug/L

Relative Response Factor = **Dichlorodifluoromethane**: RUN **VV111224** for **0.5** ppb

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

 $RRF = \underbrace{15512}_{275332} X \underbrace{5.0}_{0.5}$

RRF= 0.563

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, A0AP0 [1,2-Dichloroethane-d4 – 133%], A0AP0RE [Vinyl Chloride-d3 - 148%], Sample A0AP0 fail for Surrogate Recovery as a Corrective Action sample was 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 A0AL2, A0AL4, A0AL7, A0AK8, A0AN2, A0AN4, A0AN8, A0AP0 and A0AP0RE 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 A0AP0 for Vinyl chloride:

Ax = 17850 Is = 12.5 RRF= 0.515 DF = 10 Ais = 10165 Vo. = 25 Concentration in ug/L = (17850)(12.5)(10)(10165) (0.515) (25)

= 17.05 ug/L

Reported Result = 17 ug/L

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

RRF = <u>Area of compound</u> Area of Internal Standard X <u>Conc. of Internal Standard</u> 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 11/10/2024, 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 {PB164840BS} recoveries met the requirements for all compounds.

The Blank Spike for {PB164842BS} recoveries met the requirements for all compounds.

The Blank Spike for {PB164854BS} 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.

Sample A0AN8 was diluted due to high concentration.

Concentration of Water Sample:

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

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 A0AN8 for 1,4-Dioxane:

Ax = 60668 Ais = 69024 Is = 20 DF = 1 Vo = 980 Vi = 1 Vt = 1000 RRF = 0.481 GPC = 1

Concentration ug/L = (60668) (20) (1000) (1) (1)(69024) (0.481) (980) (1)

= 37 ug/L

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

RRF=	Area of compound /	Х	Conc. of Internal Standard /
	Area of Internal Standard	l	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 11/10/2024. 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 {PB164841BS} recoveries met the requirements for all compounds.

The Blank Spike for {PB164843BS} recoveries met the requirements for all compounds.

The Blank Spike for {PB164855BS} recoveries met the requirements for all compounds.

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



9 of 14

The Tuning criteria met requirements. The Initial Calibration met requirements. The Continuous Calibration met requirements.

Sample A0AN0 was diluted due to high concentration.

PB164843BL analyzed twice in different instrument, first time in BNA_N and Second time in BNA_M. However our sample associated with this BL run in BNA_N, so BNA_M instrument raw data reported as Screening Data in the package.

PB164855BL 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.

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)

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

Example calculation of A0AN0 for Pentachlorophenol:

Ax = 104Ais = 12024Is = 0.4DF = 1Vo = 990Vi = 1Vt = 1000RRF = 0.092GPC = 1



Concentration ug/L = (104) (0.4) (1000) (1) (1)(12024) (0.092) (990) (1)

= 0.040 ug/L

RRF Calculation of standard 0.4 ppb for **Naphthalene** with N instrument for method 11/16/2024.

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

= 6250/5912 X 0.4/0.4

= 1.057 (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 11/11/2024 and analyzed on 11/11, 11/12 and 11/14/2024. The sample was extracted and analyzed within contractual holding time.

The Surrogate recoveries met the acceptable criteria.

A0AN0MS met the requirements. A0AN0MSD 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 A0AK8, A0AL4, A0AL7, A0AN0MS and A0AN0MSD failed to meet the %D for the results between the two columns Criteria.

Sample A0AL2 have the concentration of target compound - Heptachlor, trans-chlordane and Methoxychlor,

Sample A0AL4 has the concentration of target compound - trans-chlordane, Dieldrin and Endosulfan II,

Sample A0AL7 has the concentration of target compound - Endosulfan II and trans-chlordane, Sample A0AN0 has the concentration of target compound - 4,4'-DDE,

Sample A0AN8 has the concentration of target compound - cis-chlordane and Dieldrin,

Sample A0AP0 has the concentration of target compound - cis-chlordane, trans-chlordane 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 = (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



 $=\frac{45801856}{50 ng}$

= 916037

Mean Calibration Factor = average of 5 point calibration factor

= 941114

Sample **A0AL4** Ax = 2718945CF = 941114Ws = 1000Vi = 1Vt = 10000DF = 1GPC = 1

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

> $= (\underline{2718945}) (\underline{10000}) (\underline{1.0}) (\underline{1.0})$ $(\underline{941114}) (\underline{1.0}) (\underline{1000})$

= 0.0288

Reported Results (ug/L) = 0.029

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 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), MS(1)/MS(2), MSD(1)/MSD(2) and ALCS01(1)/ALCS01(2) respectively.

Aroclor sample was extracted by Method SFAM01.1 on 11/11/2024 and analyzed on 11/12/2024. 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.



A0AN0MS met the requirements. A0AN0MSD 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:

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.

 $V_0 = V_0$ where of water extracted in ILL. 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

Calibration factor Peak 1 100ppb ISTD= <u>peak area</u> Column1 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.



14 of 14

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.