

#### **SDG NARRATIVE**

#### LAB NAME: CHEMTECH CONSULTING GROUP CASE: 49860 SDG: C0HK0 CONTRACT:68HERH20D0011 LAB CODE: CHM CHEMTECH PROJECT:N1273 MODIFICATION REF. NUMBER: NA

Sample ID	EPA Sample ID	Test	pН
N1273-01	C0HK0		1.0
N1273-02	C0HK1		1.0
N1273-03	C0HK2		1.0
N1273-03DL	C0HK2DL	VOC_Trace	1.0
N1273-04	C0HK3		1.0
N1273-04DL	C0HK3DL	SVOC	
N1273-04DL	C0HK3DL	VOC_Trace	1.0
N1273-05	C0HK4		1.0
N1273-05DL	C0HK4DL	SVOC	
N1273-05DL	C0HK4DL	VOC_Trace	1.0
N1273-06	C0HK5		1.0
N1273-06DL	C0HK5DL	SVOC	
N1273-06DL	C0HK5DL	VOC_Trace	1.0
N1273-07	C0HK6		1.0
N1273-07DL	C0HK6DL	VOC_Trace	1.0
N1273-08	C0HK7		1.0
N1273-08DL	C0HK7DL	VOC_Trace	1.0
N1273-09	C0HK8		1.0
N1273-10	С0НК9		1.0
N1273-10DL	C0HK9DL	VOC_Trace	1.0
N1273-12	C0HL0		1.0
N1273-12DL	C0HL0DL	VOC_Trace	1.0
N1273-13	C0HL1		1.0
N1273-13DL	C0HL1DL	VOC_Trace	1.0
N1273-14	C0HL2		1.0
N1273-14DL	C0HL2DL	VOC_Trace	1.0
N1273-15	C0HL3		1.0
N1273-15DL	C0HL3DL	VOC_Trace	1.0
N1273-16	C0HL4		1.0
N1273-16DL	C0HL4DL	SVOC	
N1273-16DL	C0HL4DL	VOC_Trace	1.0
N1273-17	C0HL5		1.0
N1273-17DL	C0HL5DL	SVOC	
N1273-17DL	C0HL5DL	VOC_Trace	1.0

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N1273-18	C0HL6		1.0
N1273-18DL	C0HL6DL	VOC_Trace	1.0
N1273-19	C0HL7		1.0
N1273-20	C0HL8		1.0
N1273-20DL	C0HL8DL	VOC_Trace	1.0
N1273-21	C0HL9		1.0
N1273-21DL	C0HL9DL	SVOC	
N1273-21DL	C0HL9DL	VOC_Trace	1.0

10 Water samples were delivered to the laboratory intact on 01/26/2022. 10 Water samples were delivered to the laboratory intact on 01/28/2022.

Test requested on the Chain of Custody was Trace Volatile Organic and Semivolatile Organic-SIM by Method SFAM01.1.

Sample Tags were not received with the samples.

The temperature of the samples was measured using an I R Gun. The samples temperature was 2.3, 2.7, 2.8, 2.1 degree Celsius for the samples received on 01/26/2022 and 2.3, 2.4, 2.6, 2.7 degree Celsius for the samples received on 01/28/2022.

#### Shipping Discrepancies and/or QC issues:

Issue 1: Sample tags were not received with samples at the laboratory. Sample tag numbers may or may not be listed on the TR/COC.

Resolutions 1: The laboratory will note the samples with the missing tags in the SDG Narrative and proceed with the analysis of the samples. The resolution will be applied to all samples received for this Case.

Issue 2: Water TVOA is scheduled for this Case; however, the COC lists VOA analysis.

Resolution 2: Per Region 3, the laboratory will proceed with the scheduled water TVOA analysis. The laboratory will analyze all water samples marked as VOA for TVOA analysis for each SDG received for this Case. Please note the issue in the SDG Narrative and proceed with the analysis of the samples.

Issue 3: Laboratory QC is not required for this Case; however, sample C0HK9 is designated on the COC for QC.

Resolution 3: Per Region 3, the laboratory will disregard the request for laboratory QC. The laboratory will disregard all future requests for laboratory QC for this Case. Please note the issue in the SDG Narrative and proceed with the analysis of the samples.

Issue 4: "Lab is sending this email with regards to case 49860 and SDG C0HK0.

Lab has received water samples for SVOA 1,4-Dioxane analysis. Lab has analyzed sample undiluted 1,4-Dioxane SVOA analysis for the samples C0HK2, C0HK3, C0HK4, C0HK9,

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COHL4, COHL5, COHL8, COHL9. Samples had presence of non-target volatile analyte Trichloroethene which is interfering with SVOA surrogate 1,4-Dioxane-d8 and this surrogate is associated to 1,4-Dioxane target analyte as you can see attached form-1s with quant report. Due to interference of Trichloroethene, surrogate 1,4-Dioxane-d8 has recovery outside the QC limits as you can see attached quant reports for your reference therefore lab would like to confirm that lab will report undiluted full scan 1,4-Dioxane analysis with associated 1,4-Dioxane-d8 surrogate failure for the samples in hardcopy and SEDD.

Please see attachments for your reference."

Resolution 4: "The Region is in agreement with their below resolution; have the laboratory make note of the issue in their SDG Narrative and proceed with the analysis of the samples."

Issue 5: "Lab is sending this email with regards to case 49860 and SDG C0HK0.

Lab has received water samples for TVOA analysis under this case. Lab started undiluted analysis for the samples of this SDG and analyzed few samples for TVOA. Lab has observed that samples are having extremely high concentration of target analytes which required very high dilutions. Samples C0HK4, C0HK5 & C0HK6 were analyzed in a continuous analytical sequence and samples were required further high dilution analysis as target analytes detected elevated from calibration range as you can see attached quant reports. Due to continuation of analytical sequence, lab has not analyzed instrument blank in between the samples and samples are required further dilution therefore lab would like to confirm that lab will report undiluted TVOA analysis without instrument Blank in between the samples and further dilution analysis in hardcopy and SEDD. Please note that there is no any QC failure associated to these analysis.

Based on the above undiluted sample analysis as samples were expected for extremely elevated target analytes from calibration range, Lab has analyzed remaining samples at most plausible dilution factor as mentioned below. However, samples were required further dilution analysis to bring target analytes within calibration range therefore lab would like to confirm that lab will report diluted TVOA analysis as first analysis and further dilution analysis in hardcopy and SEDD. Please note that there is no any QC failure associated to these analysis.

COHK9 50X & required further dilution
COHL1 10X & required further dilution
COHL2 10X & required further dilution
COHL3 10X & required further dilution
COHL4 50X & required further dilution
COHL5 50X & required further dilution
COHL6 40X & required further dilution
COHL8 50X & required further dilution
COHL9 40X & required further dilution

Please see attachments for your reference."

Resolution 5: "The Region is in agreement with their resolution, written below; have the laboratory make note of the issue in their SDG Narrative and proceed with the analysis of the samples."

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### **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 Trap was supplied by OI Analytical, OI #10 Trap, OI Eclipse 4660 Concentrator.

The analysis of VOC-TRACE-SFAM was based on method SFAM01.1\_Trace.

The Holding Times were met for all analysis.

The Surrogate recoveries met the acceptable criteria except for C0HK4 [Vinyl Chloride-d3 - 147%], C0HL2DL [Toluene-d8 - 69%] As per method, up to three surrogates are allowed to fail. No corrective action was taken..

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 %RSD met requirement for initial Calibration except Chloroform (31.8%) and Toluene (20.2%) for the initial calibration dated 01/18/2022 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 Initial Calibration Verification (VICV052) file ID VU046781.D met the requirements except for Chloroform (-25.8%). As per method, up to two target analyte in ICV are allowed to exceed the %D values. Therefore no further corrective action was taken.

The Continuing Calibration met requirements.

The Continuing Calibration (VSTD005174) file ID VU046859.D met the requirements except for Chloroform (-28.1%). 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 (VSTD005176) file ID VU046884.D met the requirements except for Chloroform (-24.1%). 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 (VSTD005178) file ID VU046908.D met the requirements except for Chloroform (-29.7%). 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.

The Continuing Calibration (VSTD005179) file ID VU046931.Dmet the requirements except for Chloroform (-23.4%). 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.

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The Continuing Calibration (VSTD005182) file ID VU046975.D met the requirements except for Chloroform (-21.1%) and 1,2-Dichlorobenzene-d4 (-22.9). 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 (VSTD005184) file ID VU046994.D met the requirements except for Chloroform (-24.3%) and 1,2-Dichlorobenzene-d4 (-20.3). 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 met requirements. The storage blank analysis met requirements.

The sample C0HK9 with 50X, C0HL4 with 50X, C0HL5 with 50X, C0HL8 with 50X, C0HL1 with 10X, C0HL2 with 10X, C0HL3 with 10X, C0HL6 with 40X and C0HL9 with 40X were initially diluted and analyzed as first analysis, as precautionary steps. However, sample found positive with extremely elevated target analytes detected from calibration range and required further dilution; therefore lab has reported Diluted analysis as first analysis and further dilution in hardcopy and SEDD. Please see EPA communication after SDG Narrative.

Samples C0HK2, C0HK3, C0HK4, C0HK5, C0HK6, C0HK7, C0HK9, C0HL0, C0HL1, C0HL2, C0HL3, C0HL4, C0HL5, C0HL6, C0HL8 and C0HL9 were diluted due to high concentrations.

The sample C0HK3 was analyzed following the analysis of C0HK2. Both samples had common hit of compound with concentration above calibration levels for 1,1-Dichloroethene, cis-1,2-Dichloroethene, Trichloroethene and Tetrachloroethene. It was reanalyzed at a diluted. As per method, no instrument blank was required and not analyzed.

The sample C0HK4 was analyzed following the analysis of C0HK3. Both samples had common hit of compound with concentration above calibration levels for 1,1-Dichloroethene, cis-1,2-Dichloroethene 1,1-Dichloroethane,, Trichloroethene and Tetrachloroethene. It was reanalyzed at a diluted. As per method, no instrument blank was required and not analyzed.

The Samples C0HK4, C0HK5 and C0HK6 were analyzed back to back in an continuous analytical sequence and samples found positive with high concentration of target analytes are detected and required dilution. However, instrument blanks were not analyzed in between them per SOW due to samples are analyzed in continuous analytical sequence, so Lab has reported both the analysis as undiluted analysis without instrument blanks and further dilution analysis. Please see EPA communication after SDG Narrative.

The Samples COHK0 and COHK1 were analyzed back to back in an continuous analytical sequence and samples found positive with high concentration of target analytes are detected and required dilution. However, instrument blanks were not analyzed in between them per SOW due to samples are analyzed in continuous analytical sequence, so Lab has reported both the analysis as undiluted analysis without instrument blanks and further dilution analysis. Please see EPA communication after SDG Narrative.

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The sample C0HL6 was analyzed following the analysis of C0HL3. Both samples had common hit of compound with concentration above calibration levels for Tetrachloroethene, It was reanalyzed at a diluted. As per method, no instrument blank was required and not analyzed.

The sample C0HL8 was analyzed following the analysis of C0HL6. Both samples had common hit of compound with concentration above calibration levels for Tetrachloroethene, It was reanalyzed at a diluted. As per method, no instrument blank was required and not analyzed.

The sample C0HL0 was analyzed following the analysis of C0HL8. Both samples had common hit of compound with concentration above calibration levels for Trichloroethene and Tetrachloroethene, It was reanalyzed at a diluted. As per method, no instrument blank was required and not analyzed.

Sample COHL2 was analyzed following the analysis of COHL1 which had concentration above calibration levels for Cis-1,2-Dichloroethene, Trichloroethene and Tetrachloroethene. These samples analyzed one after another without instrument blank and found positive with extremely high concentration of target compounds and required dilution as well. Sample COHL2 has positive hit for compound Trichloroethene. Both samples were reanalyzed at a diluted. The instrument blank is not analyzed. Please see EPA communication after SDG Narrative.

The Continuing Calibration file id (VSTD005183) VU046992.D was analyzed following the analysis of C0HL9 which had concentration above calibration levels for 1,1-Dichloroethene and Trichloroethene. A sample was reanalyzed at a diluted. The associate calibration is passing for this compound; therefore no instrument blank was required.

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 C0HK2 for trans-1,2-Dichloroethene:

Ax = 6221Is = 125 RRF=0.302 DF = 1 Ais = 101256 Vo. = 25 60f 9



Concentration in ug/L =  $\frac{(6221)(125)(1)}{(101256)(0.306)(25)}$ 

Reported Result = 1.0 ug/L

Relative Response Factor = Dichlorodifluoromethane: RUN VU011822 for 0.5 ppb

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

 $RRF = \underbrace{5301}_{123027} X \underbrace{5.0}_{0.5}$ 

RRF= 0.431

### Semivolatiles

Thesamples were analyzed on instrument BNA\_GusingGC Column ZB-GR Semi Volatiles Guardian which is 30 meters, 0.25 mm ID, 0.5 um df, Catalog# 7HG-G027-17-GGA.

Thesamples were analyzed on instrument BNA\_MusingGC 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 was extracted by Method SFAM01.1 on 01/27/2022, 01/28/2022 and 01/31/2022. The analysis of SVOCMS Group4 was based on method SFAM01.1.

The HoldingTimes weremet for all analysis. The Surrogate recoveries met the acceptable criteria except for C0HK2 [1,4-Dioxane-d8 - 174%], C0HK3 [1,4-Dioxane-d8 - 632%], C0HK3DL [1,4-Dioxane-d8 - 513%], C0HK4 [1,4-Dioxane-d8 - 587%], C0HK4DL [1,4-Dioxane-d8 - 507%], C0HK9 [1,4-Dioxane-d8 - 227%], C0HL4 [1,4-Dioxane-d8 - 1209%], C0HL4DL [1,4-Dioxane-d8 - 1220%], C0HL5 [1,4-Dioxane-d8 - 1472%], C0HL5DL [1,4-Dioxane-d8 - 1439%], C0HL8 [1,4-Dioxane-d8 - 1052%], C0HL9 [1,4-Dioxane-d8 - 422%] COHL9DL [1,4-Dioxane-d8 - 395%], Lab has analyzed sample undiluted 1,4-Dioxane SVOA analysis for the samples COHK2, COHK3, COHK4, COHK9, COHL4, COHL5, COHL8, COHL9.

Samples had presence of non-target volatile analyze Trichloroethene which is interfering with SVOA surrogate 1,4-Dioxane-d8 and this surrogate is associated to 1,4-Dioxane target analyze. Due to interference of Trichloroethene, surrogate 1,4-Dioxane-d8 has recovery outside the QC

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limits, therefore lab has reported undiluted full scan 1,4-Dioxane analysis with associated 1,4-Dioxane-d8 surrogate failure for the samples in hardcopy and SEDD.

The Internal Standards Areas met the acceptable requirements.

TheRetention Times were acceptable for all samples.

The Blank Spike for {PB142310BS} recoveries met the requirements for all compounds. The Blank Spike for {PB142333BS} recoveries met the requirements for all compounds The Blank Spike for {PB142371BS} recoveries met the requirements for all compounds The Blank Spike for {PB142407BS} recoveries met the requirements for all compounds The Blank Spike for {PB142407BS} recoveries met the requirements for all compounds TheBlank analysis did not indicatethepresenceoflab contamination.

The Tuningcriteriamet requirements.

TheInitial Calibration met the requirements.

The Continuous Calibration met the requirements.

Samples C0HK3, C0HK4, C0HK5, C0HL4, C0HL5 and C0HL9 were diluted due to high concentrations.

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

### **Concentration of Water Sample:**

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

$$(Ais)$$
  $(RRF)$   $(Vo)$   $(Vi)$ 

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 C0HK2 for 1,4-Dioxane:

Ax = 18836Ais = 23923Is = 20Vo = 1000Vi = 1Vt = 1000RRF = 0.646GPC = 1



#### Concentration ug/L = (18836) (20) (1000) (1) (1)(23923) (0.646) (1000) (1)

Reported Result = 24ug/L

RRF Calculation of standard 20 ppb 1,4-Dioxane with instrument G for method 01/06/2022.

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

= 6566/ 25532 X 20/8

= 0.643 (Reported RRF)

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: NimishaPandya.

Date: \_\_\_\_\_ Title: Document Control Officer.