

ANALYTICAL RESULTS SUMMARY

SEMI-VOLATILE ORGANICS

PROJECT NAME : CTO WE13

TETRA TECH NUS, INC.

661 Andersen Drive

Suite 200

Pittsburgh, PA - 15220-2745

Phone No: 412-921-7090

ORDER ID : P5065

ATTENTION : Ernie Wu



Laboratory Certification ID # 20012



1) Signature Page	3
2) Case Narrative	4
2.1) SVOC-SIMGroup1- Case Narrative	4
3) Qualifier Page	6
4) QA Checklist	7
5) SVOC-SIMGroup1 Data	8
6) Shipping Document	32
6.1) CHAIN OF CUSTODY	33
6.2) Lab Certificate	34

Cover Page

Order ID : P5065

Project ID : CTO WE13

Client : Tetra Tech NUS, Inc.

Lab Sample Number

P5065-04
P5065-05
P5065-06

Client Sample Number

RW7-SP200-20241202
RW7-SP201-20241202
RW7-SP300A-20241202

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. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature : _____

Date: 12/5/2024

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

CASE NARRATIVE

Tetra Tech NUS, Inc.

Project Name: CTO WE13

Project Manager: Ernie Wu

Chemtech Project # P5065

Test Name: SVOC-SIMGroup1

A. Number of Samples and Date of Receipt:

3 Water samples were received on 12/03/2024.

B. Parameters

According to the Chain of Custody document, the following analyses were requested: SVOC-SIMGroup1. This data package contains results for SVOC-SIMGroup1.

C. Analytical Techniques:

The samples were analyzed on instrument BNA_N using GC Column ZB-SemiVolatiles Guardian which is 30 meters, 0.25 mm ID, 0.5 um df, Catalog # 7HG-G027-17-GGAThe analysis of SVOC-SIMGroup1 was based on method 8270-Modified and extraction was done based on method 3510.

D. QA/ QC Samples:

The Holding Times were met for all analysis.

The Surrogate recoveries met the acceptable criteria except for RW7-SP200-20241202 [Terphenyl-d14 - 135%], RW7-SP201-20241202 [Terphenyl-d14 - 145%], RW7-SP300A-20241202 [Terphenyl-d14 - 151%], PB165348BS [2-Fluorobiphenyl - 108%, Nitrobenzene-d5 - 112%] and PB165348BSD [2-Fluorobiphenyl - 115%, Nitrobenzene-d5 - 127%], The failure surrogates not associated with the client parameters list, therefore no corrective action was taken.

The Internal Standards Areas met the acceptable requirements.

The Retention Times were acceptable for all samples.

The RPD met criteria .

The Blank Spike met requirements for all samples .

The Blank Spike Duplicate met requirements for all samples .

The Initial Calibration met the requirements .

The Continuous Calibration met the requirements .

The Tuning criteria met requirements.

E. Additional Comments:

The laboratory certifies that the all-electronic diskette deliverable exactly match the data summary forms (i.e. Form Is)."

The Form 6 is not included in the data package because the Initial Calibration was performed using 7 points.

The not QT review data is reported in the Miscellaneous.

Please use %D calculated based on Avg RF and CCRF for all compounds using Average Response Factor when the %RSD value for a compound is <15% for the Initial Calibration curve and use %D calculated based on Amount added and Calculated amount for all compounds using Linear Regression when the %RSD value for a compound is > 15% for the Initial Calibration curve for SW-846 analysis.

F. Manual Integration Comments:

Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

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_____

DATA REPORTING QUALIFIERS- ORGANIC

For reporting results, the following “Results Qualifiers” are used:

Value	If the result is a value greater than or equal to the detection limit, report the value
U	Indicates the compound was analyzed for but was not detected. Report the minimum detection limit for the sample with the U, i.e. “10 U”. This is not necessarily the instrument detection limit attainable for this particular sample based on any concentration or dilution that may have been required.
ND	Indicates the analyte was analyzed for, but not detected
J	Indicates an estimated value. This flag is used: (1) When estimating a concentration for a tentatively identified compound (library search hits, where a 1:1 response is assumed.) (2) When the mass spectral data indicated the identification, however the result was less than the specified detection limit greater than zero. If the detection limit was 10ug/L and a concentration of 3 ug/L was calculated report as 3 J. This flag is used when similar situation arise on any organic parameter i.e. Pest, PCB and others.
B	Indicates the analyte was found in the blank as well as the sample report as “12 B”.
E	Indicates the analyte ‘s concentration exceeds the calibrated range of the instrument for that specific analysis.
D	This flag identifies all compounds identified in an analysis at a secondary dilution factor.
P	This flag is used for Pesticide/PCB target analyte when there is >25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on Form 1 and flagged with a “P”.
N	This flag indicates presumptive evidence of a compound. This is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It applies to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the flag is not used.
A	This flag indicates that a Tentatively Identified Compound is a suspected aldol-condensation product.
Q	Indicates the LCS did not meet the control limits requirements

APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: P5065

Completed

For thorough review, the report must have the following:

GENERAL:

Are all original paperwork present (chain of custody, record of communication,airbill, sample management lab chronicle, login page)

✓

Check chain-of-custody for proper relinquish/return of samples

✓

Is the chain of custody signed and complete

✓

Check internal chain-of-custody for proper relinquish/return of samples /sample extracts

✓

Collect information for each project id from server. Were all requirements followed

✓

COVER PAGE:

Do numbers of samples correspond to the number of samples in the Chain of Custody on login page

✓

Do lab numbers and client Ids on cover page agree with the Chain of Custody

✓

CHAIN OF CUSTODY:

Do requested analyses on Chain of Custody agree with form I results

✓

Do requested analyses on Chain of Custody agree with the log-in page

✓

Were the correct method log-in for analysis according to the Analytical Request and Chain of Custody

✓

Were the samples received within hold time

✓

Were any problems found with the samples at arrival recorded in the Sample Management Laboratory Chronicle

✓

ANALYTICAL:

Was method requirement followed?

✓

Was client requirement followed?

✓

Does the case narrative summarize all QC failure?

✓

All runlogs and manual integration are reviewed for requirements

✓

All manual calculations and /or hand notations verified

✓

QA Review Signature: MAYUR DESAI

Date: 12/05/2024

LAB CHRONICLE

OrderID:	P5065	OrderDate:	12/3/2024 10:48:00 AM
Client:	Tetra Tech NUS, Inc.	Project:	CTO WE13
Contact:	Ernie Wu	Location:	L61

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
P5065-04	RW7-SP200-20241202	Water			12/02/24			12/03/24
			SVOC-SIMGroup1	8270-Modified		12/03/24	12/03/24	
P5065-05	RW7-SP201-20241202	Water			12/02/24			12/03/24
			SVOC-SIMGroup1	8270-Modified		12/03/24	12/03/24	
P5065-06	RW7-SP300A-20241202	Water			12/02/24			12/03/24
			SVOC-SIMGroup1	8270-Modified		12/03/24	12/03/24	



284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
Fax : 908 789 8922

Hit Summary Sheet SW-846

SDG No.: P5065
Client: Tetra Tech NUS, Inc.

Sample ID	Client ID	Parameter	Concentration	C	MDL	LOD	RDL	Units
Client ID : RW7-SP200-20241202								
P5065-04	RW7-SP200-20241202	WATER	1,4-Dioxane	3.300	0.07	0.21	0.21	ug/L
			Total Svoc :	3.30				
			Total Concentration:	3.30				
Client ID : RW7-SP300A-20241202								
P5065-06	RW7-SP300A-20241202	WATER	1,4-Dioxane	0.570	0.07	0.2	0.2	ug/L
			Total Svoc :	0.57				
			Total Concentration:	0.57				



SAMPLE DATA

Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	12/02/24
Project:	CTO WE13	Date Received:	12/03/24
Client Sample ID:	RW7-SP200-20241202	SDG No.:	P5065
Lab Sample ID:	P5065-04	Matrix:	Water
Analytical Method:	SW8270SIM	% Solid:	0
Sample Wt/Vol:	970 Units: mL	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-SIMGroup1
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3510C		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BN035410.D	1	12/03/24 12:30	12/03/24 19:24	PB165348

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
123-91-1	1,4-Dioxane	3.30		0.070	0.21	0.21	ug/L
SURROGATES							
7297-45-2	2-Methylnaphthalene-d10	0.36		30 - 150		90%	SPK: 0.4
93951-69-0	Fluoranthene-d10	0.37		30 - 150		93%	SPK: 0.4
4165-60-0	Nitrobenzene-d5	0.33		55 - 111		82%	SPK: 0.4
321-60-8	2-Fluorobiphenyl	0.37		53 - 106		91%	SPK: 0.4
1718-51-0	Terphenyl-d14	0.54	*	58 - 132		135%	SPK: 0.4
INTERNAL STANDARDS							
3855-82-1	1,4-Dichlorobenzene-d4	2080	7.308				
1146-65-2	Naphthalene-d8	5240	10.052				
15067-26-2	Acenaphthene-d10	3770	13.957				
1517-22-2	Phenanthrene-d10	9570	16.723				
1719-03-5	Chrysene-d12	8680	20.974				
1520-96-3	Perylene-d12	8370	23.064				

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	12/02/24
Project:	CTO WE13	Date Received:	12/03/24
Client Sample ID:	RW7-SP201-20241202	SDG No.:	P5065
Lab Sample ID:	P5065-05	Matrix:	Water
Analytical Method:	SW8270SIM	% Solid:	0
Sample Wt/Vol:	980 Units: mL	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-SIMGroup1
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3510C		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BN035411.D	1	12/03/24 12:30	12/03/24 20:00	PB165348

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
123-91-1	1,4-Dioxane	0.20	U	0.070	0.20	0.20	ug/L
SURROGATES							
7297-45-2	2-Methylnaphthalene-d10	0.36		30 - 150		89%	SPK: 0.4
93951-69-0	Fluoranthene-d10	0.38		30 - 150		94%	SPK: 0.4
4165-60-0	Nitrobenzene-d5	0.35		55 - 111		88%	SPK: 0.4
321-60-8	2-Fluorobiphenyl	0.36		53 - 106		90%	SPK: 0.4
1718-51-0	Terphenyl-d14	0.58	*	58 - 132		145%	SPK: 0.4
INTERNAL STANDARDS							
3855-82-1	1,4-Dichlorobenzene-d4	1850	7.308				
1146-65-2	Naphthalene-d8	4560	10.052				
15067-26-2	Acenaphthene-d10	3250	13.967				
1517-22-2	Phenanthrene-d10	8130	16.736				
1719-03-5	Chrysene-d12	6930	20.974				
1520-96-3	Perylene-d12	6310	23.067				

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	12/02/24
Project:	CTO WE13	Date Received:	12/03/24
Client Sample ID:	RW7-SP300A-20241202	SDG No.:	P5065
Lab Sample ID:	P5065-06	Matrix:	Water
Analytical Method:	SW8270SIM	% Solid:	0
Sample Wt/Vol:	990 Units: mL	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-SIMGroup1
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3510C		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BN035412.D	1	12/03/24 12:30	12/03/24 20:36	PB165348

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
123-91-1	1,4-Dioxane	0.57		0.070	0.20	0.20	ug/L
SURROGATES							
7297-45-2	2-Methylnaphthalene-d10	0.36		30 - 150		91%	SPK: 0.4
93951-69-0	Fluoranthene-d10	0.38		30 - 150		94%	SPK: 0.4
4165-60-0	Nitrobenzene-d5	0.32		55 - 111		81%	SPK: 0.4
321-60-8	2-Fluorobiphenyl	0.37		53 - 106		94%	SPK: 0.4
1718-51-0	Terphenyl-d14	0.60	*	58 - 132		151%	SPK: 0.4
INTERNAL STANDARDS							
3855-82-1	1,4-Dichlorobenzene-d4	1640	7.308				
1146-65-2	Naphthalene-d8	4080	10.052				
15067-26-2	Acenaphthene-d10	2950	13.956				
1517-22-2	Phenanthrene-d10	7430	16.723				
1719-03-5	Chrysene-d12	6340	20.973				
1520-96-3	Perylene-d12	5800	23.067				

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



QC SUMMARY

Surrogate Summary

SW-846

SDG No.: P5065

Client: Tetra Tech NUS, Inc.

Analytical Method: 8270-Modified

Lab Sample ID	Client ID	Parameter	Spike (PPM)	Result (PPM)	Recovery (%)	Qual	Limits (%)	
							Low	High
P5065-04	RW7-SP200-20241202	2-Methylnaphthalene-d10	0.4	0.36	90		30	150
		Fluoranthene-d10	0.4	0.37	93		30	150
		Nitrobenzene-d5	0.4	0.33	82		55	111
		2-Fluorobiphenyl	0.4	0.37	91		53	106
		Terphenyl-d14	0.4	0.54	135	*	58	132
P5065-05	RW7-SP201-20241202	2-Methylnaphthalene-d10	0.4	0.36	89		30	150
		Fluoranthene-d10	0.4	0.38	94		30	150
		Nitrobenzene-d5	0.4	0.35	88		55	111
		2-Fluorobiphenyl	0.4	0.36	90		53	106
		Terphenyl-d14	0.4	0.58	145	*	58	132
P5065-06	RW7-SP300A-20241202	2-Methylnaphthalene-d10	0.4	0.36	91		30	150
		Fluoranthene-d10	0.4	0.38	94		30	150
		Nitrobenzene-d5	0.4	0.32	81		55	111
		2-Fluorobiphenyl	0.4	0.37	94		53	106
		Terphenyl-d14	0.4	0.60	151	*	58	132
PB165348BL	PB165348BL	2-Methylnaphthalene-d10	0.4	0.44	109		30	150
		Fluoranthene-d10	0.4	0.42	104		30	150
		Nitrobenzene-d5	0.4	0.40	100		55	111
		2-Fluorobiphenyl	0.4	0.42	106		53	106
		Terphenyl-d14	0.4	0.51	128		58	132
PB165348BS	PB165348BS	2-Methylnaphthalene-d10	0.4	0.52	130		30	150
		Fluoranthene-d10	0.4	0.40	100		30	150
		Nitrobenzene-d5	0.4	0.45	112	*	55	111
		2-Fluorobiphenyl	0.4	0.43	108	*	53	106
		Terphenyl-d14	0.4	0.46	116		58	132
PB165348BSD	PB165348BSD	2-Methylnaphthalene-d10	0.4	0.57	142		30	150
		Fluoranthene-d10	0.4	0.43	108		30	150
		Nitrobenzene-d5	0.4	0.51	127	*	55	111
		2-Fluorobiphenyl	0.4	0.46	115	*	53	106
		Terphenyl-d14	0.4	0.50	124		58	132

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary

SW-846

SDG No.: P5065

Client: Tetra Tech NUS, Inc.

Analytical Method: 8270-Modified DataFile: BN035408.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	RPD	Limits		RPD
								Qual	Low	High	
PB165348BS	1,4-Dioxane	0.4	0.37	ug/L	93				70	130	

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary

SW-846

SDG No.: P5065

Client: Tetra Tech NUS, Inc.

Analytical Method: 8270-Modified DataFile: BN035409.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	RPD	Low	Limits	RPD
								Qual		High	
PB165348BSD	1,4-Dioxane	0.4	0.41	ug/L	103	10			70	130	20

A
B
C
D
E
F
G

4B

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

PB165348BL

Lab Name: CHEMTECH

Contract: TETR06

Lab Code: CHEM Case No.: P5065

SAS No.: P5065 SDG NO.: P5065

Lab File ID: BN035407.D

Lab Sample ID: PB165348BL

Instrument ID: BNA_N

Date Extracted: 12/03/2024

Matrix: (soil/water) Water

Date Analyzed: 12/03/2024

Level: (low/med) LOW

Time Analyzed: 17:37

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
PB165348BS	PB165348BS	BN035408.D	12/03/2024
PB165348BSD	PB165348BSD	BN035409.D	12/03/2024
RW7-SP300A-20241202	P5065-06	BN035412.D	12/03/2024
RW7-SP200-20241202	P5065-04	BN035410.D	12/03/2024
RW7-SP201-20241202	P5065-05	BN035411.D	12/03/2024

COMMENTS: _____

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: CHEMTECH

Contract: TETR06

Lab Code: CHEM

SAS No.: P5065

SDG NO.: P5065

Lab File ID: BN035349.D

DFTPP Injection Date: 11/27/2024

Instrument ID: BNA_N

DFTPP Injection Time: 14:55

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	21.6
68	Less than 2.0% of mass 69	0.0 (0.0) 1
69	Mass 69 relative abundance	28.9
70	Less than 2.0% of mass 69	0.1 (0.4) 1
127	10.0 - 80.0% of mass 198	39.4
197	Less than 2.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100
199	5.0 to 9.0% of mass 198	6.7
275	10.0 - 60.0% of mass 198	27.9
365	Greater than 1% of mass 198	4.6
441	Present, but less than mass 443	11.5
442	Greater than 50% of mass 198	100
443	15.0 - 24.0% of mass 442	14 (19.7) 2

1-Value is % mass 69

2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
SSTDICC0.1	SSTDICC0.1	BN035350.D	11/27/2024	15:34
SSTDICC0.2	SSTDICC0.2	BN035351.D	11/27/2024	16:10
SSTDICCC0.4	SSTDICCC0.4	BN035352.D	11/27/2024	16:46
SSTDICC0.8	SSTDICC0.8	BN035353.D	11/27/2024	17:21
SSTDICC1.6	SSTDICC1.6	BN035354.D	11/27/2024	17:57
SSTDICC3.2	SSTDICC3.2	BN035355.D	11/27/2024	18:33
SSTDICC5.0	SSTDICC5.0	BN035356.D	11/27/2024	19:09

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: CHEMTECH

Contract: TETR06

Lab Code: CHEM

SAS No.: P5065

SDG NO.: P5065

Lab File ID: BN035405.D

DFTPP Injection Date: 12/03/2024

Instrument ID: BNA_N

DFTPP Injection Time: 15:56

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	22.8
68	Less than 2.0% of mass 69	0.0 (0.0) 1
69	Mass 69 relative abundance	30.2
70	Less than 2.0% of mass 69	0.1 (0.4) 1
127	10.0 - 80.0% of mass 198	40.9
197	Less than 2.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 60.0% of mass 198	28.3
365	Greater than 1% of mass 198	4.5
441	Present, but less than mass 443	11.6
442	Greater than 50% of mass 198	100
443	15.0 - 24.0% of mass 442	14.1 (19) 2

1-Value is % mass 69

2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
SSTDCCC0.4	SSTDCCC0.4	BN035406.D	12/03/2024	16:35
PB165348BL	PB165348BL	BN035407.D	12/03/2024	17:37
PB165348BS	PB165348BS	BN035408.D	12/03/2024	18:13
PB165348BSD	PB165348BSD	BN035409.D	12/03/2024	18:48
RW7-SP200-20241202	P5065-04	BN035410.D	12/03/2024	19:24
RW7-SP201-20241202	P5065-05	BN035411.D	12/03/2024	20:00
RW7-SP300A-20241202	P5065-06	BN035412.D	12/03/2024	20:36
SSTDCCC0.4EC	SSTDCCC0.4	BN035413.D	12/03/2024	21:11

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH

Lab Code: CHEM Case No.: P5065 SAS No.: P5065 SDG NO.: P5065

EPA Sample No.: SSTDCCC0.4 Date Analyzed: 12/03/2024

Lab File ID: BN035406.D Time Analyzed: 16:35

Instrument ID: BNA_N GC Column: ZB-GR ID: 0.25 (mm)

	IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
12 HOUR STD	2015	7.3	5135	10.05	3625	13.96
UPPER LIMIT	4030	7.8	10270	10.552	7250	14.457
LOWER LIMIT	1007.5	6.8	2567.5	9.552	1812.5	13.457
EPA SAMPLE NO.						
01 PB165348BL	1833	7.30	4526	10.05	3257	13.97
02 PB165348BS	2152	7.30	5114	10.05	3359	13.96
03 RW7-SP200-20241202	2075	7.31	5240	10.05	3772	13.96
04 PB165348BSD	1951	7.30	4691	10.05	3099	13.96
05 RW7-SP201-20241202	1851	7.31	4555	10.05	3248	13.97
06 RW7-SP300A-20241202	1636	7.31	4083	10.05	2951	13.96

IS1 (DCB) = 1,4-Dichlorobenzene-d4

IS2 (NPT) = Naphthalene-d8

IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area

AREA LOWER LIMIT = -50% of internal standard area

RT UPPER LIMIT = +0.50 minutes of internal standard RT

RT UPPER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.

* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH

Lab Code: CHEM Case No.: P5065 SAS No.: P5065 SDG NO.: P5065

EPA Sample No.: SSTDCCC0.4 Date Analyzed: 12/03/2024

Lab File ID: BN035406.D Time Analyzed: 16:35

Instrument ID: BNA_N GC Column: ZB-GR ID: 0.25 (mm)

	IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
12 HOUR STD	8862	16.723	8251	20.974	7832	23.07
UPPER LIMIT	17724	17.223	16502	21.474	15664	23.57
LOWER LIMIT	4431	16.223	4125.5	20.474	3916	22.57
EPA SAMPLE NO.						
01 PB165348BL	8120	16.74	6937	20.98	6492	23.08
02 PB165348BS	8334	16.72	7507	20.97	6897	23.07
03 RW7-SP200-20241202	9570	16.72	8675	20.97	8373	23.06
04 PB165348BSD	7726	16.72	7120	20.97	6595	23.06
05 RW7-SP201-20241202	8127	16.74	6931	20.97	6312	23.07
06 RW7-SP300A-20241202	7433	16.72	6344	20.97	5799	23.07

IS4 (PHN) = Phenanthrene-d10

IS5 (CRY) = Chrysene-d12

IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area

AREA LOWER LIMIT = -50% of internal standard area

RT UPPER LIMIT = +0.50 minutes of internal standard RT

RT UPPER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.

* Values outside of QC limits.



QC SAMPLE DATA

Report of Analysis

Client:	Tetra Tech NUS, Inc.		Date Collected:		
Project:	CTO WE13		Date Received:		
Client Sample ID:	PB165348BL		SDG No.:	P5065	
Lab Sample ID:	PB165348BL		Matrix:	Water	
Analytical Method:	SW8270SIM		% Solid:	0	
Sample Wt/Vol:	1000	Units: mL	Final Vol:	1000	uL
Soil Aliquot Vol:		uL	Test:	SVOC-SIMGroup1	
Extraction Type :		Decanted : N	Level :	LOW	
Injection Volume :		GPC Factor : 1.0	GPC Cleanup :	N	PH :
Prep Method :	SW3510C				

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BN035407.D	1	12/03/24 12:30	12/03/24 17:37	PB165348

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
123-91-1	1,4-Dioxane	0.20	U	0.070	0.20	0.20	ug/L
SURROGATES							
7297-45-2	2-Methylnaphthalene-d10	0.44		30 - 150		109%	SPK: 0.4
93951-69-0	Fluoranthene-d10	0.42		30 - 150		104%	SPK: 0.4
4165-60-0	Nitrobenzene-d5	0.40		55 - 111		100%	SPK: 0.4
321-60-8	2-Fluorobiphenyl	0.42		53 - 106		106%	SPK: 0.4
1718-51-0	Terphenyl-d14	0.51		58 - 132		128%	SPK: 0.4
INTERNAL STANDARDS							
3855-82-1	1,4-Dichlorobenzene-d4	1830	7.3				
1146-65-2	Naphthalene-d8	4530	10.052				
15067-26-2	Acenaphthene-d10	3260	13.967				
1517-22-2	Phenanthrene-d10	8120	16.735				
1719-03-5	Chrysene-d12	6940	20.983				
1520-96-3	Perylene-d12	6490	23.076				

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Tetra Tech NUS, Inc.		Date Collected:		
Project:	CTO WE13		Date Received:		
Client Sample ID:	PB165348BS		SDG No.:	P5065	
Lab Sample ID:	PB165348BS		Matrix:	Water	
Analytical Method:	SW8270SIM		% Solid:	0	
Sample Wt/Vol:	1000	Units: mL	Final Vol:	1000	uL
Soil Aliquot Vol:		uL	Test:	SVOC-SIMGroup1	
Extraction Type :		Decanted : N	Level :	LOW	
Injection Volume :		GPC Factor : 1.0	GPC Cleanup :	N	PH :
Prep Method :	SW3510C				

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BN035408.D	1	12/03/24 12:30	12/03/24 18:13	PB165348

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
123-91-1	1,4-Dioxane	0.37		0.070	0.20	0.20	ug/L
SURROGATES							
7297-45-2	2-Methylnaphthalene-d10	0.52		30 - 150		130%	SPK: 0.4
93951-69-0	Fluoranthene-d10	0.40		30 - 150		100%	SPK: 0.4
4165-60-0	Nitrobenzene-d5	0.45	*	55 - 111		112%	SPK: 0.4
321-60-8	2-Fluorobiphenyl	0.43	*	53 - 106		108%	SPK: 0.4
1718-51-0	Terphenyl-d14	0.46		58 - 132		116%	SPK: 0.4
INTERNAL STANDARDS							
3855-82-1	1,4-Dichlorobenzene-d4	2150	7.301				
1146-65-2	Naphthalene-d8	5110	10.052				
15067-26-2	Acenaphthene-d10	3360	13.957				
1517-22-2	Phenanthrene-d10	8330	16.723				
1719-03-5	Chrysene-d12	7510	20.974				
1520-96-3	Perylene-d12	6900	23.067				

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Tetra Tech NUS, Inc.		Date Collected:		
Project:	CTO WE13		Date Received:		
Client Sample ID:	PB165348BSD		SDG No.:	P5065	
Lab Sample ID:	PB165348BSD		Matrix:	Water	
Analytical Method:	SW8270SIM		% Solid:	0	
Sample Wt/Vol:	1000	Units: mL	Final Vol:	1000	uL
Soil Aliquot Vol:		uL	Test:	SVOC-SIMGroup1	
Extraction Type :		Decanted : N	Level :	LOW	
Injection Volume :		GPC Factor : 1.0	GPC Cleanup :	N	PH :
Prep Method :	SW3510C				

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BN035409.D	1	12/03/24 12:30	12/03/24 18:48	PB165348

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
123-91-1	1,4-Dioxane	0.41		0.070	0.20	0.20	ug/L
SURROGATES							
7297-45-2	2-Methylnaphthalene-d10	0.57		30 - 150		142%	SPK: 0.4
93951-69-0	Fluoranthene-d10	0.43		30 - 150		108%	SPK: 0.4
4165-60-0	Nitrobenzene-d5	0.51	*	55 - 111		127%	SPK: 0.4
321-60-8	2-Fluorobiphenyl	0.46	*	53 - 106		115%	SPK: 0.4
1718-51-0	Terphenyl-d14	0.50		58 - 132		124%	SPK: 0.4
INTERNAL STANDARDS							
3855-82-1	1,4-Dichlorobenzene-d4	1950	7.301				
1146-65-2	Naphthalene-d8	4690	10.052				
15067-26-2	Acenaphthene-d10	3100	13.957				
1517-22-2	Phenanthrene-d10	7730	16.723				
1719-03-5	Chrysene-d12	7120	20.974				
1520-96-3	Perylene-d12	6600	23.064				

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



CALIBRATION SUMMARY

Method Path : Z:\svoasrv\HPCHEM1\BNA_N\Methods\
 Method File : 8270-SIM-BN112724.M
 Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION
 Last Update : Wed Nov 27 23:03:24 2024
 Response Via : Initial Calibration

Calibration Files

0.1 =BN035350.D 0.2 =BN035351.D 0.4 =BN035352.D 0.8 =BN035353.D 1.6 =BN035354.D 3.2 =BN035355.D 5.0 =BN035356.D

	Compound	0.1	0.2	0.4	0.8	1.6	3.2	5.0	Avg	%RSD

1) I	1,4-Dichlorobenzen...	-----ISTD-----								
2)	1,4-Dioxane	0.406	0.417	0.376	0.380	0.392	0.357	0.348	0.382	6.52
3)	n-Nitrosodimet...	0.334	0.302	0.326	0.315	0.332	0.310	0.309	0.319	3.92
4) S	2-Fluorophenol	1.025	1.112	1.018	0.958	0.998	0.954	0.942	1.001	5.88
5) S	Phenol-d6	1.227	1.186	1.193	1.143	1.235	1.215	1.229	1.204	2.69
6)	bis(2-Chloroet...	1.035	1.021	0.992	0.993	1.051	0.997	0.991	1.012	2.39
7) I	Naphthalene-d8	-----ISTD-----								
8) S	Nitrobenzene-d5	0.227	0.232	0.235	0.248	0.257	0.251	0.261	0.244	5.31
9)	Naphthalene	1.062	1.029	1.047	1.032	1.096	1.049	1.070	1.055	2.22
10)	Hexachlorobuta...	0.245	0.242	0.247	0.241	0.255	0.236	0.238	0.243	2.60
11) SURR2	Methylnaphth...	0.591	0.603	0.619	0.615	0.659	0.639	0.656	0.626	4.16
12)	2-Methylnaphth...	0.724	0.716	0.740	0.747	0.795	0.771	0.795	0.755	4.25
13) I	Acenaphthene-d10	-----ISTD-----								
14) S	2,4,6-Tribromo...	0.273	0.258	0.257	0.268	0.293	0.311	0.328	0.284	9.67
15) S	2-Fluorobiphenyl	1.489	1.491	1.510	1.508	1.566	1.511	1.511	1.512	1.68
16)	Acenaphthylene	1.643	1.600	1.595	1.638	1.737	1.763	1.781	1.680	4.68
17)	Acenaphthene	1.121	1.084	1.086	1.108	1.145	1.122	1.140	1.115	2.17
18)	Fluorene	1.589	1.549	1.543	1.600	1.652	1.614	1.625	1.596	2.47
19) I	Phenanthrene-d10	-----ISTD-----								
20)	4,6-Dinitro-2-...	0.038	0.031	0.036	0.041	0.051			0.039	19.30
21)	4-Bromophenyl-...	0.226	0.218	0.226	0.233	0.249	0.242	0.244	0.234	4.85
22)	Hexachlorobenzene	0.265	0.266	0.273	0.276	0.288	0.278	0.277	0.275	2.82
23)	Atrazine	0.155	0.155	0.154	0.156	0.175	0.179	0.191	0.167	8.98
24)	Pentachlorophenol	0.140	0.090	0.095	0.103	0.121	0.136	0.150	0.120	19.86
25)	Phenanthrene	1.092	1.046	1.067	1.092	1.148	1.121	1.125	1.099	3.20
26)	Anthracene	0.964	0.923	0.940	0.973	1.050	1.042	1.064	0.994	5.76
27) SURR	Fluoranthene-d10	1.203	1.086	1.077	1.105	1.165	1.138	1.164	1.134	4.10
28)	Fluoranthene	1.538	1.396	1.416	1.456	1.539	1.497	1.526	1.481	3.99
29) I	Chrysene-d12	-----ISTD-----								
30)	Pyrene	1.583	1.445	1.475	1.443	1.519	1.440	1.431	1.477	3.79
31) S	Terphenyl-d14	0.832	0.777	0.791	0.771	0.812	0.772	0.769	0.789	3.08
32)	Benzo(a)anthra...	1.431	1.343	1.355	1.375	1.451	1.411	1.429	1.399	2.98
33)	Chrysene	1.463	1.452	1.441	1.415	1.487	1.422	1.420	1.443	1.84
34)	Bis(2-ethylhex...	0.710	0.558	0.516	0.505	0.520	0.516	0.544	0.553	12.96
35) I	Perylene-d12	-----ISTD-----								

Method Path : Z:\svoasrv\HPCHEM1\BNA_N\Methods\

Method File : 8270-SIM-BN112724.M

36)	Indeno(1,2,3-c...	1.411	1.489	1.532	1.554	1.660	1.615	1.685	1.564	6.22
37)	Benzo(b)fluora...	1.305	1.348	1.313	1.378	1.827	1.463	1.608	1.463	13.12
38)	Benzo(k)fluora...	1.444	1.376	1.402	1.419	1.527	1.447	1.468	1.440	3.39
39) C	Benzo(a)pyrene	1.204	1.156	1.146	1.171	1.256	1.232	1.271	1.205	4.11
40)	Dibenzo(a,h)an...	1.104	1.187	1.194	1.226	1.315	1.280	1.332	1.234	6.55
41)	Benzo(g,h,i)pe...	1.188	1.238	1.248	1.269	1.360	1.330	1.394	1.289	5.71

(#) = Out of Range

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: TETR06

Lab Code: CHEM Case No.: P5065 SAS No.: P5065 SDG No.: P5065

Instrument ID: BNA_N Calibration Date/Time: 12/03/2024 16:35

Lab File ID: BN035406.D Init. Calib. Date(s): 11/27/2024 11/27/2024

EPA Sample No.: SSTDCCC0.4 Init. Calib. Time(s): 15:34 19:09

GC Column: ZB-GR ID: 0.25 (mm)

COMPOUND	RRF	RRF0.4	MIN RRF	%D	MAX%D
2-Methylnaphthalene-d10	0.626	0.600		-4.2	20.0
Fluoranthene-d10	1.134	1.017		-10.3	20.0
2-Fluorophenol	1.001	0.897		-10.4	20.0
Phenol-d6	1.204	1.101		-8.6	20.0
Nitrobenzene-d5	0.244	0.236		-3.3	20.0
2-Fluorobiphenyl	1.512	1.538		1.7	20.0
2,4,6-Tribromophenol	0.284	0.253		-10.9	20.0
Terphenyl-d14	0.789	0.767		-2.8	20.0
1,4-Dioxane	0.382	0.365		-4.4	20.0

All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: TETR06

Lab Code: CHEM Case No.: P5065 SAS No.: P5065 SDG No.: P5065

Instrument ID: BNA_N Calibration Date/Time: 12/03/2024 21:11

Lab File ID: BN035413.D Init. Calib. Date(s): 11/27/2024 11/27/2024

EPA Sample No.: SSTDCCC0.4EC Init. Calib. Time(s): 15:34 19:09

GC Column: ZB-GR ID: 0.25 (mm)

COMPOUND	RRF	RRF0.4	MIN RRF	%D	MAX%D
2-Methylnaphthalene-d10	0.626	0.609		-2.7	50.0
Fluoranthene-d10	1.134	1.023		-9.8	50.0
2-Fluorophenol	1.001	0.907		-9.4	50.0
Phenol-d6	1.204	1.095		-9.1	50.0
Nitrobenzene-d5	0.244	0.240		-1.6	50.0
2-Fluorobiphenyl	1.512	1.547		2.3	50.0
2,4,6-Tribromophenol	0.284	0.256		-9.9	50.0
Terphenyl-d14	0.789	0.795		0.8	50.0
1,4-Dioxane	0.382	0.384		0.5	50.0

All other compounds must meet a minimum RRF of 0.010.



SHIPPING DOCUMENTS

33 of 34

Laboratory Certification

Certified By	License No.
CAS EPA CLP Contract	68HERH20D0011
Connecticut	PH-0830
DOD ELAP (ANAB)	L2219
Maine	2024021
Maryland	296
New Hampshire	255424 Rev 1
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	525-24-234-08441
Texas	T104704488