CHEMTECH

284 Sheffield Street, Mountainside, New Jersey - 07092

Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

OrderID:	O1232	**OrderDate:**	1/19/2023 1:44:00 PM
Client:	Louis Berger U.S., Inc., A WSP Company	**Project:**	NYCDDC Phase II SCI Arthur Kill Road CEQR
Contact:	Jonathan Ganz	**Location:**	N11,VOA Ref. #2 Soil

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
O1232-01	**B-P-17A**	**SOIL**			**01/18/23**			**01/19/23**
			SVOC-TCL BNA -20	8270E		01/20/23	01/20/23	
O1232-02	**B-P-17B**	**SOIL**			**01/18/23**			**01/19/23**
			SVOC-TCL BNA -20	8270E		01/20/23	01/24/23	
O1232-03	**WC-17**	**SOIL**			**01/18/23**			**01/19/23**
			SVOC-PAH	8270E		01/20/23	01/24/23	
			SVOC-TCL BNA -20			01/20/23	01/24/23	
O1232-04	**B-P-18A**	**SOIL**			**01/18/23**			**01/19/23**
			SVOC-TCL BNA -20	8270E		01/20/23	01/24/23	
O1232-05	**B-P-18B**	**SOIL**			**01/18/23**			**01/19/23**
			SVOC-TCL BNA -20	8270E		01/20/23	01/20/23	
O1232-06	**B-P-19A**	**SOIL**			**01/18/23**			**01/19/23**
			SVOC-TCL BNA -20	8270E		01/20/23	01/20/23	
O1232-07	**B-P-19B**	**SOIL**			**01/18/23**			**01/19/23**
			SVOC-TCL BNA -20	8270E		01/20/23	01/24/23	
O1232-08	**B-P-35A**	**SOIL**			**01/18/23**			**01/19/23**
			SVOC-TCL BNA -20	8270E		01/20/23	01/20/23	
O1232-09	**B-P-35B**	**SOIL**			**01/18/23**			**01/19/23**
			SVOC-TCL BNA -20	8270E		01/20/23	01/24/23	
O1232-10	**DUP01**	**SOIL**			**01/18/23**			**01/19/23**
			SVOC-TCL BNA -20	8270E		01/20/23	01/20/23	

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Hit Summary Sheet
SW-846

SDG No.: O1232

Client: Louis Berger U.S., Inc., A WSP Company

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID : WC-17								
O1232-03	WC-17	SOIL	Benzo(a)anthracene	95.400	J	94.9	190	ug/Kg
O1232-03	WC-17	SOIL	Chrysene	120.000	J	93.5	190	ug/Kg
			Total Svoc :	**215.40**				
			Total Concentration:	**215.40**				

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SAMPLE DATA

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Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	01/18/23
Project:	NYCDDC Phase II SCI Arthur Kill Road CEQR	Date Received:	01/19/23
Client Sample ID:	WC-17	SDG No.:	O1232
Lab Sample ID:	O1232-03	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	91.4
Sample Wt/Vol:	30.03 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BP013584.D	1	01/20/23 12:30	01/24/23 22:44	PB150378

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	80.8	U	80.8	190	ug/Kg
208-96-8	Acenaphthylene	75.1	U	75.1	190	ug/Kg
83-32-9	Acenaphthene	86.2	U	86.2	190	ug/Kg
86-73-7	Fluorene	86.1	U	86.1	190	ug/Kg
85-01-8	Phenanthrene	91.4	U	91.4	190	ug/Kg
120-12-7	Anthracene	91.8	U	91.8	190	ug/Kg
206-44-0	Fluoranthene	87.2	U	87.2	190	ug/Kg
129-00-0	Pyrene	81.1	U	81.1	190	ug/Kg
56-55-3	Benzo(a)anthracene	95.4	J	94.9	190	ug/Kg
218-01-9	Chrysene	120	J	93.5	190	ug/Kg
205-99-2	Benzo(b)fluoranthene	75.4	U	75.4	190	ug/Kg
207-08-9	Benzo(k)fluoranthene	80.4	U	80.4	190	ug/Kg
50-32-8	Benzo(a)pyrene	74.0	U	74.0	190	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	110	U	110	190	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	110	U	110	190	ug/Kg
191-24-2	Benzo(g,h,i)perylene	110	U	110	190	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	68.4		27 - 109	68%	SPK: 100
321-60-8	2-Fluorobiphenyl	62.4		30 - 103	62%	SPK: 100
1718-51-0	Terphenyl-d14	65.2		21 - 107	65%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	386000	8.158			
1146-65-2	Naphthalene-d8	1520000	10.987			
15067-26-2	Acenaphthene-d10	828000	14.793			
1517-22-2	Phenanthrene-d10	1520000	17.545			
1719-03-5	Chrysene-d12	1000000	21.616			
1520-96-3	Perylene-d12	1340000	24.204			

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Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	01/18/23
Project:	NYCDDC Phase II SCI Arthur Kill Road CEQR	Date Received:	01/19/23
Client Sample ID:	WC-17	SDG No.:	O1232
Lab Sample ID:	O1232-03	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	91.4
Sample Wt/Vol:	30.03 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BP013584.D	1	01/20/23 12:30	01/24/23 22:44	PB150378

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

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

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Surrogate Summary

SW-846

SDG No.: O1232

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: 8270E

Lab Sample ID	Client ID	Parameter	Spike (PPM)	Result (PPM)	Recovery (%)	Qual	Limits (%) Low	Limits (%) High
O1232-03	WC-17	Nitrobenzene-d5	100	68.4	68		27	109
		2-Fluorobiphenyl	100	62.4	62		30	103
		Terphenyl-d14	100	65.2	65		21	107
O1233-02MS	B-P34AMS	Nitrobenzene-d5	100	81.4	81		27	109
		2-Fluorobiphenyl	100	65.7	66		30	103
		Terphenyl-d14	100	73.6	74		21	107
O1233-02MSD	B-P34AMSD	Nitrobenzene-d5	100	82.3	82		27	109
		2-Fluorobiphenyl	100	66.1	66		30	103
		Terphenyl-d14	100	74.4	74		21	107
PB150378BL	PB150378BL	Nitrobenzene-d5	100	78.9	79		27	109
		2-Fluorobiphenyl	100	67.6	68		30	103
		Terphenyl-d14	100	70.3	70		21	107
PB150378BS	PB150378BS	Nitrobenzene-d5	100	90.3	90		27	109
		2-Fluorobiphenyl	100	85.2	85		30	103
		Terphenyl-d14	100	103	103		21	107

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Matrix Spike/Matrix Spike Duplicate Summary
SW-846

SDG No.: O1232

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: SW8270E

Parameter	Spike	Sample Result	Result	Units	Rec	Rec Qual	RPD	RPD Qual	Limits Low	Limits High	RPD
Lab Sample ID: O1233-02MS		**Client Sample ID: B-P34AMS**						**DataFile: BF132171.D**			
Naphthalene	2000	0	1600	ug/Kg	80				72	110	
Acenaphthylene	2000	0	1600	ug/Kg	80				79	118	
Acenaphthene	2000	0	1800	ug/Kg	90				70	121	
Fluorene	2000	0	1600	ug/Kg	80				68	116	
Phenanthrene	2000	0	1500	ug/Kg	75				72	113	
Anthracene	2000	0	1500	ug/Kg	75				62	124	
Fluoranthene	2000	0	1700	ug/Kg	85				59	125	
Pyrene	2000	0	1600	ug/Kg	80				52	128	
Benzo(a)anthracene	2000	0	1700	ug/Kg	85				71	114	
Chrysene	2000	0	1600	ug/Kg	80				57	121	
Benzo(b)fluoranthene	2000	0	1800	ug/Kg	90				67	121	
Benzo(k)fluoranthene	2000	0	1700	ug/Kg	85				74	114	
Benzo(a)pyrene	2000	0	1600	ug/Kg	80				70	142	
Indeno(1,2,3-cd)pyrene	2000	0	1500	ug/Kg	75				61	125	
Dibenz(a,h)anthracene	2000	0	1700	ug/Kg	85				67	130	
Benzo(g,h,i)perylene	2000	0	1500	ug/Kg	75				53	140	

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Matrix Spike/Matrix Spike Duplicate Summary
SW-846

SDG No.: O1232

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: SW8270E

Parameter	Spike	Sample Result	Result	Units	Rec	Rec Qual	RPD	RPD Qual	Limits Low	Limits High	RPD
Lab Sample ID: O1233-02MSD		**Client Sample ID: B-P34AMSD**						**DataFile: BF132172.D**			
Naphthalene	1900	0	1600	ug/Kg	84		5		72	110	20
Acenaphthylene	1900	0	1600	ug/Kg	84		5		79	118	20
Acenaphthene	1900	0	1800	ug/Kg	95		5		70	121	20
Fluorene	1900	0	1600	ug/Kg	84		5		68	116	20
Phenanthrene	1900	0	1500	ug/Kg	79		5		72	113	20
Anthracene	1900	0	1500	ug/Kg	79		5		62	124	20
Fluoranthene	1900	0	1700	ug/Kg	89		5		59	125	20
Pyrene	1900	0	1600	ug/Kg	84		5		52	128	20
Benzo(a)anthracene	1900	0	1600	ug/Kg	84		1		71	114	20
Chrysene	1900	0	1600	ug/Kg	84		5		57	121	20
Benzo(b)fluoranthene	1900	0	1800	ug/Kg	95		5		67	121	20
Benzo(k)fluoranthene	1900	0	1700	ug/Kg	89		5		74	114	20
Benzo(a)pyrene	1900	0	1600	ug/Kg	84		5		70	142	20
Indeno(1,2,3-cd)pyrene	1900	0	1500	ug/Kg	79		5		61	125	20
Dibenz(a,h)anthracene	1900	0	1600	ug/Kg	84		1		67	130	20
Benzo(g,h,i)perylene	1900	0	1500	ug/Kg	79		5		53	140	20

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Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: O1232

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: 8270E **DataFile:** BP013684.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	RPD Qual	Limits Low	Limits High	RPD
PB150378BS	Naphthalene	1700	1400	ug/Kg	82				62	100	
	Acenaphthylene	1700	1400	ug/Kg	82				63	101	
	Acenaphthene	1700	1600	ug/Kg	94				57	104	
	Fluorene	1700	1400	ug/Kg	82				61	101	
	Phenanthrene	1700	1400	ug/Kg	82				59	103	
	Anthracene	1700	1400	ug/Kg	82				61	105	
	Fluoranthene	1700	1400	ug/Kg	82				57	107	
	Pyrene	1700	1600	ug/Kg	94				59	103	
	Benzo(a)anthracene	1700	1500	ug/Kg	88				60	102	
	Chrysene	1700	1400	ug/Kg	82				59	101	
	Benzo(b)fluoranthene	1700	1700	ug/Kg	100				62	109	
	Benzo(k)fluoranthene	1700	1600	ug/Kg	94				62	109	
	Benzo(a)pyrene	1700	1400	ug/Kg	82				63	103	
	Indeno(1,2,3-cd)pyrene	1700	1300	ug/Kg	76				63	101	
	Dibenz(a,h)anthracene	1700	1300	ug/Kg	76				61	112	
	Benzo(g,h,i)perylene	1700	1200	ug/Kg	71				57	116	

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4B

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

PB150378BL

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: O1232 SAS No.: O1232 SDG NO.: O1232

Lab File ID: BP013572.D Lab Sample ID: PB150378BL

Instrument ID: BNA_P Date Extracted: 01/20/2023

Matrix: (soil/water) SOIL Date Analyzed: 01/24/2023

Level: (low/med) LOW Time Analyzed: 15:50

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

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
WC-17	O1232-03	BP013584.D	01/24/2023
PB150378BS	PB150378BS	BP013684.D	01/31/2023
B-P34AMS	O1233-02MS	BF132171.D	01/20/2023
B-P34AMSD	O1233-02MSD	BF132172.D	01/20/2023

COMMENTS:

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5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM SAS No.: O1232 SDG NO.: O1232

Lab File ID: BF132139.D DFTPP Injection Date: 01/19/2023

Instrument ID: BNA_F DFTPP Injection Time: 10:46

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	40.6
68	Less than 2.0% of mass 69	0.7 (1.8) 1
69	Mass 69 relative abundance	37.4
70	Less than 2.0% of mass 69	0.2 (0.5) 1
127	10.0 - 80.0% of mass 198	48.4
197	Less than 2.0% of mass 198	0.7
198	Base Peak, 100% relative abundance	100
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 60.0% of mass 198	28.2
365	Greater than 1% of mass 198	3.9
441	Present, but less than mass 443	12.5
442	Greater than 50% of mass 198	100.0
443	15.0 - 24.0% of mass 442	16 (19.3) 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
SSTDICC2.5	SSTDICC2.5	BF132140.D	01/19/2023	11:21
SSTDICC005	SSTDICC005	BF132141.D	01/19/2023	11:53
SSTDICC010	SSTDICC010	BF132142.D	01/19/2023	12:26
SSTDICC020	SSTDICC020	BF132143.D	01/19/2023	12:59
SSTDICCC040	SSTDICCC040	BF132144.D	01/19/2023	13:32
SSTDICC050	SSTDICC050	BF132145.D	01/19/2023	14:05
SSTDICC060	SSTDICC060	BF132146.D	01/19/2023	14:38
SSTDICC080	SSTDICC080	BF132147.D	01/19/2023	15:11

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5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM SAS No.: O1232 SDG NO.: O1232

Lab File ID: BF132163.D DFTPP Injection Date: 01/20/2023

Instrument ID: BNA_F DFTPP Injection Time: 16:08

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	38.5
68	Less than 2.0% of mass 69	0.7 (1.9) 1
69	Mass 69 relative abundance	36
70	Less than 2.0% of mass 69	0.2 (0.5) 1
127	10.0 - 80.0% of mass 198	46.9
197	Less than 2.0% of mass 198	0.7
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	28.3
365	Greater than 1% of mass 198	4.3
441	Present, but less than mass 443	13.9
442	Greater than 50% of mass 198	100.0
443	15.0 - 24.0% of mass 442	17.6 (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
SSTDCCC040	SSTDCCC040	BF132164.D	01/20/2023	16:40
B-P34AMS	O1233-02MS	BF132171.D	01/20/2023	20:35
B-P34AMSD	O1233-02MSD	BF132172.D	01/20/2023	21:08

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5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM SAS No.: O1232 SDG NO.: O1232

Lab File ID: BP013544.D DFTPP Injection Date: 01/23/2023

Instrument ID: BNA_P DFTPP Injection Time: 10:51

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	38.4
68	Less than 2.0% of mass 69	0.6 (1.7) 1
69	Mass 69 relative abundance	34.2
70	Less than 2.0% of mass 69	0.2 (0.6) 1
127	10.0 - 80.0% of mass 198	47.0
197	Less than 2.0% of mass 198	0.6
198	Base Peak, 100% relative abundance	100
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 60.0% of mass 198	26.6
365	Greater than 1% of mass 198	3.4
441	Present, but less than mass 443	15.2
442	Greater than 50% of mass 198	100
443	15.0 - 24.0% of mass 442	19.9 (19.9) 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
SSTDICC2.5	SSTDICC2.5	BP013545.D	01/23/2023	11:25
SSTDICC005	SSTDICC005	BP013546.D	01/23/2023	12:00
SSTDICC010	SSTDICC010	BP013547.D	01/23/2023	12:34
SSTDICC020	SSTDICC020	BP013548.D	01/23/2023	13:08
SSTDICCC040	SSTDICCC040	BP013549.D	01/23/2023	13:42
SSTDICC050	SSTDICC050	BP013550.D	01/23/2023	14:17
SSTDICC060	SSTDICC060	BP013551.D	01/23/2023	14:51
SSTDICC080	SSTDICC080	BP013552.D	01/23/2023	16:01

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SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM SAS No.: O1232 SDG NO.: O1232

Lab File ID: BP013570.D DFTPP Injection Date: 01/24/2023

Instrument ID: BNA_P DFTPP Injection Time: 14:38

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	34.9
68	Less than 2.0% of mass 69	0.5 (1.7) 1
69	Mass 69 relative abundance	32.2
70	Less than 2.0% of mass 69	0.2 (0.5) 1
127	10.0 - 80.0% of mass 198	46.1
197	Less than 2.0% of mass 198	0.4
198	Base Peak, 100% relative abundance	100
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 60.0% of mass 198	26.4
365	Greater than 1% of mass 198	3.4
441	Present, but less than mass 443	15.9
442	Greater than 50% of mass 198	100
443	15.0 - 24.0% of mass 442	19.5 (19.5) 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
SSTDCCC040	SSTDCCC040	BP013571.D	01/24/2023	15:13
PB150378BL	PB150378BL	BP013572.D	01/24/2023	15:50
WC-17	O1232-03	BP013584.D	01/24/2023	22:44

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5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM SAS No.: O1232 SDG NO.: O1232

Lab File ID: BP013668.D DFTPP Injection Date: 01/31/2023

Instrument ID: BNA_P DFTPP Injection Time: 10:47

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	26.0
68	Less than 2.0% of mass 69	0.5 (1.8) 1
69	Mass 69 relative abundance	29.4
70	Less than 2.0% of mass 69	0.2 (0.6) 1
127	10.0 - 80.0% of mass 198	37.3
197	Less than 2.0% of mass 198	0.5
198	Base Peak, 100% relative abundance	100
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 60.0% of mass 198	29.7
365	Greater than 1% of mass 198	4.0
441	Present, but less than mass 443	16.4
442	Greater than 50% of mass 198	100
443	15.0 - 24.0% of mass 442	19.5 (19.5) 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
SSTDICC2.5	SSTDICC2.5	BP013669.D	01/31/2023	11:21
SSTDICC005	SSTDICC005	BP013670.D	01/31/2023	11:55
SSTDICC010	SSTDICC010	BP013671.D	01/31/2023	12:30
SSTDICC020	SSTDICC020	BP013672.D	01/31/2023	13:04
SSTDICCC040	SSTDICCC040	BP013673.D	01/31/2023	13:38
SSTDICC050	SSTDICC050	BP013674.D	01/31/2023	14:12
SSTDICC060	SSTDICC060	BP013675.D	01/31/2023	14:47
SSTDICC080	SSTDICC080	BP013676.D	01/31/2023	15:56
PB150378BS	PB150378BS	BP013684.D	01/31/2023	21:04

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8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH

Lab Code: CHEM Case No.: O1232 SAS No.: O1232 SDG NO.: O1232

EPA Sample No.: SSTDCCC040 Date Analyzed: 01/20/2023

Lab File ID: BF132164.D Time Analyzed: 16:40

Instrument ID: BNA_F GC Column: DB-UI ID: 0.18 (mm)

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	175584	7.09	590884	8.38	314145	10.14
	UPPER LIMIT	351168	7.59	1181770	8.878	628290	10.642
	LOWER LIMIT	87792	6.59	295442	7.878	157073	9.642
	EPA SAMPLE NO.						
01	B-P34AMS	184212	7.09	674454	8.38	369043	10.14
02	B-P34AMSD	185010	7.09	669898	8.38	363370	10.14

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.

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8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH

Lab Code: CHEM Case No.: O1232 SAS No.: O1232 SDG NO.: O1232

EPA Sample No.: SSTDCCC040 Date Analyzed: 01/20/2023

Lab File ID: BF132164.D Time Analyzed: 16:40

Instrument ID: BNA_F GC Column: DB-UI ID: 0.18 (mm)

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	631542	11.642	364265	14.307	316916	15.901
	UPPER LIMIT	1263080	12.142	728530	14.807	633832	16.401
	LOWER LIMIT	315771	11.142	182133	13.807	158458	15.401
	EPA SAMPLE NO.						
01	B-P34AMS	748390	11.64	455426	14.31	405760	15.90
02	B-P34AMSD	736982	11.64	439968	14.31	406965	15.90

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.

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8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH

Lab Code: CHEM Case No.: O1232 SAS No.: O1232 SDG NO.: O1232

EPA Sample No.: SSTDCCC040 Date Analyzed: 01/24/2023

Lab File ID: BP013571.D Time Analyzed: 15:13

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

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	306718	8.163	1319960	10.99	845480	14.80
	UPPER LIMIT	613436	8.663	2639920	11.493	1690960	15.298
	LOWER LIMIT	153359	7.663	659980	10.493	422740	14.298
	EPA SAMPLE NO.						
01	WC-17	385930	8.16	1523350	10.99	828227	14.79
02	PB150378BL	291029	8.16	1295640	10.99	837908	14.80

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.

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8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH

Lab Code: CHEM Case No.: O1232 SAS No.: O1232 SDG NO.: O1232

EPA Sample No.: SSTDCCC040 Date Analyzed: 01/24/2023

Lab File ID: BP013571.D Time Analyzed: 15:13

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

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	1830850	17.551	1775330	21.627	1903850	24.215
	UPPER LIMIT	3661700	18.051	3550660	22.127	3807700	24.715
	LOWER LIMIT	915425	17.051	887665	21.127	951925	23.715
	EPA SAMPLE NO.						
01	WC-17	1519830	17.55	1004640	21.62	1335170	24.20
02	PB150378BL	1910080	17.55	1883140	21.63	2131870	24.22

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.

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8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH

Lab Code: CHEM Case No.: O1232 SAS No.: O1232 SDG NO.: O1232

EPA Sample No.: SSTDICCC040 Date Analyzed: 01/31/2023

Lab File ID: BP013673.D Time Analyzed: 13:38

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

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	222064	8.14	832306	10.97	549003	14.78
	UPPER LIMIT	444128	8.64	1664610	11.469	1098010	15.281
	LOWER LIMIT	111032	7.64	416153	10.469	274502	14.281
	EPA SAMPLE NO.						
01	PB150378BS	297815	8.14	1192600	10.97	801024	14.78

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.

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8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH

Lab Code: CHEM Case No.: O1232 SAS No.: O1232 SDG NO.: O1232

EPA Sample No.: SSTDICCC040 Date Analyzed: 01/31/2023

Lab File ID: BP013673.D Time Analyzed: 13:38

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

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	1258360	17.533	1280890	21.61	1494510	24.186
	UPPER LIMIT	2516720	18.033	2561780	22.11	2989020	24.686
	LOWER LIMIT	629180	17.033	640445	21.11	747255	23.686
	EPA SAMPLE NO.						
01	PB150378BS	1851080	17.53	1639740	21.61	1453640	24.18

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.

CHEMTECH

A
B
C
D
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QC SAMPLE DATA

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Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	NYCDDC Phase II SCI Arthur Kill Road CEQR	Date Received:	
Client Sample ID:	PB150378BL	SDG No.:	O1232
Lab Sample ID:	PB150378BL	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	100
Sample Wt/Vol:	30.01 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BP013572.D	1	01/20/23 12:30	01/24/23 15:50	PB150378

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	73.9	U	73.9	170	ug/Kg
208-96-8	Acenaphthylene	68.7	U	68.7	170	ug/Kg
83-32-9	Acenaphthene	78.9	U	78.9	170	ug/Kg
86-73-7	Fluorene	78.8	U	78.8	170	ug/Kg
85-01-8	Phenanthrene	83.6	U	83.6	170	ug/Kg
120-12-7	Anthracene	84.0	U	84.0	170	ug/Kg
206-44-0	Fluoranthene	79.8	U	79.8	170	ug/Kg
129-00-0	Pyrene	74.2	U	74.2	170	ug/Kg
56-55-3	Benzo(a)anthracene	86.8	U	86.8	170	ug/Kg
218-01-9	Chrysene	85.5	U	85.5	170	ug/Kg
205-99-2	Benzo(b)fluoranthene	69.0	U	69.0	170	ug/Kg
207-08-9	Benzo(k)fluoranthene	73.6	U	73.6	170	ug/Kg
50-32-8	Benzo(a)pyrene	67.7	U	67.7	170	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	100	U	100	170	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	100	U	100	170	ug/Kg
191-24-2	Benzo(g,h,i)perylene	96.9	U	96.9	170	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	78.9		27 - 109	79%	SPK: 100
321-60-8	2-Fluorobiphenyl	67.6		30 - 103	68%	SPK: 100
1718-51-0	Terphenyl-d14	70.3		21 - 107	70%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	291000	8.163			
1146-65-2	Naphthalene-d8	1300000	10.993			
15067-26-2	Acenaphthene-d10	838000	14.798			
1517-22-2	Phenanthrene-d10	1910000	17.551			
1719-03-5	Chrysene-d12	1880000	21.627			
1520-96-3	Perylene-d12	2130000	24.216			

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Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	NYCDDC Phase II SCI Arthur Kill Road CEQR	Date Received:	
Client Sample ID:	PB150378BL	SDG No.:	O1232
Lab Sample ID:	PB150378BL	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	100
Sample Wt/Vol:	30.01 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BP013572.D	1	01/20/23 12:30	01/24/23 15:50	PB150378

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

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

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Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	NYCDDC Phase II SCI Arthur Kill Road CEQR	Date Received:	
Client Sample ID:	PB150378BS	SDG No.:	O1232
Lab Sample ID:	PB150378BS	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	100
Sample Wt/Vol:	30.02 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BP013684.D	1	01/20/23 12:30	01/31/23 21:04	PB150378

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	1400		73.9	170	ug/Kg
208-96-8	Acenaphthylene	1400		68.7	170	ug/Kg
83-32-9	Acenaphthene	1600		78.8	170	ug/Kg
86-73-7	Fluorene	1400		78.7	170	ug/Kg
85-01-8	Phenanthrene	1400		83.5	170	ug/Kg
120-12-7	Anthracene	1400		83.9	170	ug/Kg
206-44-0	Fluoranthene	1400		79.7	170	ug/Kg
129-00-0	Pyrene	1600		74.2	170	ug/Kg
56-55-3	Benzo(a)anthracene	1500		86.7	170	ug/Kg
218-01-9	Chrysene	1400		85.4	170	ug/Kg
205-99-2	Benzo(b)fluoranthene	1700		69.0	170	ug/Kg
207-08-9	Benzo(k)fluoranthene	1600		73.6	170	ug/Kg
50-32-8	Benzo(a)pyrene	1400		67.7	170	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	1300		100	170	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	1300		100	170	ug/Kg
191-24-2	Benzo(g,h,i)perylene	1200		96.8	170	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	90.3		27 - 109	90%	SPK: 100
321-60-8	2-Fluorobiphenyl	85.2		30 - 103	85%	SPK: 100
1718-51-0	Terphenyl-d14	103		21 - 107	103%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	298000	8.14			
1146-65-2	Naphthalene-d8	1190000	10.969			
15067-26-2	Acenaphthene-d10	801000	14.775			
1517-22-2	Phenanthrene-d10	1850000	17.528			
1719-03-5	Chrysene-d12	1640000	21.61			
1520-96-3	Perylene-d12	1450000	24.18			

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Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	NYCDDC Phase II SCI Arthur Kill Road CEQR	Date Received:	
Client Sample ID:	PB150378BS	SDG No.:	O1232
Lab Sample ID:	PB150378BS	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	100
Sample Wt/Vol:	30.02 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup : N	PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BP013684.D	1	01/20/23 12:30	01/31/23 21:04	PB150378

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

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

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Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	01/18/23
Project:	NYCDDC Phase II SCI Arthur Kill Road CEQR	Date Received:	01/19/23
Client Sample ID:	B-P34AMS	SDG No.:	O1232
Lab Sample ID:	O1233-02MS	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	85.3
Sample Wt/Vol:	30.05 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF132171.D	1	01/20/23 12:30	01/20/23 20:35	PB150378

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	1600		86.5	200	ug/Kg
208-96-8	Acenaphthylene	1600		80.4	200	ug/Kg
83-32-9	Acenaphthene	1800		92.3	200	ug/Kg
86-73-7	Fluorene	1600		92.2	200	ug/Kg
85-01-8	Phenanthrene	1500		97.8	200	ug/Kg
120-12-7	Anthracene	1500		98.3	200	ug/Kg
206-44-0	Fluoranthene	1700		93.4	200	ug/Kg
129-00-0	Pyrene	1600		86.8	200	ug/Kg
56-55-3	Benzo(a)anthracene	1700		100	200	ug/Kg
218-01-9	Chrysene	1600		100	200	ug/Kg
205-99-2	Benzo(b)fluoranthene	1800		80.8	200	ug/Kg
207-08-9	Benzo(k)fluoranthene	1700		86.1	200	ug/Kg
50-32-8	Benzo(a)pyrene	1600		79.2	200	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	1500		120	200	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	1700		120	200	ug/Kg
191-24-2	Benzo(g,h,i)perylene	1500		110	200	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	81.4		27 - 109	81%	SPK: 100
321-60-8	2-Fluorobiphenyl	65.7		30 - 103	66%	SPK: 100
1718-51-0	Terphenyl-d14	73.6		21 - 107	74%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	184000	7.09			
1146-65-2	Naphthalene-d8	674000	8.378			
15067-26-2	Acenaphthene-d10	369000	10.142			
1517-22-2	Phenanthrene-d10	748000	11.642			
1719-03-5	Chrysene-d12	455000	14.307			
1520-96-3	Perylene-d12	406000	15.901			

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Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	01/18/23
Project:	NYCDDC Phase II SCI Arthur Kill Road CEQR	Date Received:	01/19/23
Client Sample ID:	B-P34AMS	SDG No.:	O1232
Lab Sample ID:	O1233-02MS	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	85.3
Sample Wt/Vol:	30.05 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF132171.D	1	01/20/23 12:30	01/20/23 20:35	PB150378

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

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

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Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	01/18/23
Project:	NYCDDC Phase II SCI Arthur Kill Road CEQR	Date Received:	01/19/23
Client Sample ID:	B-P34AMSD	SDG No.:	O1232
Lab Sample ID:	O1233-02MSD	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	85.3
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF132172.D	1	01/20/23 12:30	01/20/23 21:08	PB150378

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	1600		86.4	200	ug/Kg
208-96-8	Acenaphthylene	1600		80.4	200	ug/Kg
83-32-9	Acenaphthene	1800		92.3	200	ug/Kg
86-73-7	Fluorene	1600		92.2	200	ug/Kg
85-01-8	Phenanthrene	1500		97.8	200	ug/Kg
120-12-7	Anthracene	1500		98.2	200	ug/Kg
206-44-0	Fluoranthene	1700		93.3	200	ug/Kg
129-00-0	Pyrene	1600		86.8	200	ug/Kg
56-55-3	Benzo(a)anthracene	1600		100	200	ug/Kg
218-01-9	Chrysene	1600		100	200	ug/Kg
205-99-2	Benzo(b)fluoranthene	1800		80.7	200	ug/Kg
207-08-9	Benzo(k)fluoranthene	1700		86.1	200	ug/Kg
50-32-8	Benzo(a)pyrene	1600		79.2	200	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	1500		120	200	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	1600		120	200	ug/Kg
191-24-2	Benzo(g,h,i)perylene	1500		110	200	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	82.3		27 - 109	82%	SPK: 100
321-60-8	2-Fluorobiphenyl	66.1		30 - 103	66%	SPK: 100
1718-51-0	Terphenyl-d14	74.4		21 - 107	74%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	185000	7.089			
1146-65-2	Naphthalene-d8	670000	8.378			
15067-26-2	Acenaphthene-d10	363000	10.142			
1517-22-2	Phenanthrene-d10	737000	11.642			
1719-03-5	Chrysene-d12	440000	14.307			
1520-96-3	Perylene-d12	407000	15.901			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	01/18/23
Project:	NYCDDC Phase II SCI Arthur Kill Road CEQR	Date Received:	01/19/23
Client Sample ID:	B-P34AMSD	SDG No.:	O1232
Lab Sample ID:	O1233-02MSD	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	85.3
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF132172.D	1	01/20/23 12:30	01/20/23 21:08	PB150378

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

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

CHEMTECH

A
B
C
D
E
F
G

CALIBRATION SUMMARY

Response Factor Report BNA_F

Method Path : Z:\svoasrv\HPCHEM1\BNA_F\Methods\
Method File : 8270-BF011923.M
Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION
Last Update : Fri Jan 20 00:50:42 2023
Response Via : Initial Calibration

Calibration Files
2.5 =BF132140.D 5 =BF132141.D 10 =BF132142.D 20 =BF132143.D 40 =BF132144.D 50 =BF132145.D 60 =BF132146.D 80 =BF1321
47.D

		Compound	2.5	5	10	20	40	50	60	80	Avg	%RSD
1)	I	1,4-Dichlorobenzen...	----------	ISTD	----------							
2)		1,4-Dioxane		0.624	0.591	0.586	0.580	0.553	0.575	0.553	0.580	4.24
3)		Pyridine		1.663	1.539	1.599	1.567	1.496	1.554	1.480	1.557	3.98
4)		n-Nitrosodimet...		0.731	0.705	0.733	0.730	0.724	0.761	0.742	0.732	2.31
5)	S	2-Fluorophenol		1.301	1.246	1.204	1.116	1.063	1.077	1.009	1.145	9.35
6)		Aniline		2.241	2.090	2.044	1.937	1.865	1.940	1.857	1.996	6.91
7)	S	Phenol-d6		1.696	1.541	1.516	1.404	1.325	1.352	1.254	1.441	10.54
8)		2-Chlorophenol		1.351	1.306	1.286	1.183	1.129	1.136	1.034	1.203	9.50
9)		Benzaldehyde			1.086	1.022	0.903	0.814	0.812		0.927	13.33
10)	C	Phenol		1.733	1.636	1.580	1.468	1.375	1.408	1.303	1.500	10.29
11)		bis(2-Chloroet...		1.461	1.341	1.325	1.236	1.178	1.219	1.131	1.270	8.87
12)		1,3-Dichlorobe...		1.556	1.458	1.406	1.312	1.242	1.269	1.174	1.345	9.97
13)	C	1,4-Dichlorobe...		1.544	1.451	1.419	1.314	1.238	1.266	1.163	1.342	9.99
14)		1,2-Dichlorobe...		1.495	1.391	1.326	1.200	1.128	1.134	1.014	1.241	13.62
15)		Benzyl Alcohol		1.128	1.103	1.125	1.106	1.090	1.105	1.060	1.102	2.07
16)		2,2'-oxybis(1-...		2.119	1.959	1.937	1.815	1.731	1.743	1.617	1.846	9.20
17)		2-Methylphenol		1.172	1.098	1.104	1.042	0.990	1.019	0.955	1.054	7.08
18)		Hexachloroethane		0.503	0.486	0.495	0.489	0.466	0.485	0.449	0.482	3.82
19)	P	n-Nitroso-di-n...	0.922	1.015	0.971	0.921	0.847	0.797	0.814	0.776	0.883	9.86
20)		3+4-Methylphenols		1.509	1.435	1.426	1.317	1.235	1.258	1.119	1.328	10.25
21)	I	Naphthalene-d8	----------	ISTD	----------							
22)		Acetophenone		0.579	0.528	0.504	0.462	0.431	0.442	0.419	0.481	12.18
23)	S	Nitrobenzene-d5		0.363	0.366	0.383	0.383	0.371	0.388	0.381	0.376	2.54
24)		Nitrobenzene		0.397	0.392	0.410	0.406	0.388	0.406	0.391	0.399	2.20
25)		Isophorone		0.767	0.740	0.738	0.719	0.711	0.739	0.743	0.737	2.45
26)	C	2-Nitrophenol		0.099	0.105	0.128	0.148	0.154			0.127	19.49
27)		2,4-Dimethylph...		0.334	0.330	0.324	0.322	0.308	0.313	0.300	0.319	3.82
28)		bis(2-Chloroet...		0.497	0.471	0.461	0.430	0.407	0.421	0.406	0.442	7.97
29)	C	2,4-Dichloroph...		0.303	0.298	0.313	0.309	0.294	0.305	0.296	0.303	2.28
30)		1,2,4-Trichlor...		0.388	0.360	0.355	0.338	0.320	0.328	0.316	0.344	7.49
31)		Naphthalene		1.185	1.119	1.075	0.998	0.942	0.965	0.907	1.027	9.89
32)		Benzoic acid			0.118	0.151	0.188	0.200	0.228	0.235	0.187	24.10
33)		4-Chloroaniline		0.496	0.474	0.458	0.437	0.411	0.410	0.390	0.440	8.72
34)	C	Hexachlorobuta...		0.252	0.234	0.234	0.227	0.220	0.230	0.220	0.231	4.75
35)		Caprolactam		0.075	0.081	0.086	0.090	0.089	0.090	0.089	0.086	6.65
36)	C	4-Chloro-3-met...		0.299	0.305	0.314	0.309	0.305	0.302	0.298	0.305	1.80
37)		2-Methylnaphth...		0.828	0.783	0.739	0.684	0.643	0.655	0.619	0.707	11.04
38)		1-Methylnaphth...		0.774	0.719	0.690	0.638	0.599	0.609	0.577	0.658	10.93

Method Path : Z:\svoasrv\HPCHEM1\BNA_F\Methods\
Method File : 8270-BF011923.M

39)	I	Acenaphthene-d10	----------ISTD----------								
40)		1,2,4,5-Tetrac...	0.789	0.737	0.719	0.684	0.641	0.667	0.634	0.696	8.04
41)	P	Hexachlorocycl...		0.306	0.342	0.390	0.389	0.422	0.428	0.380	12.43
42)	S	2,4,6-Tribromo...	0.197	0.207	0.222	0.221	0.217	0.219	0.212	0.214	4.25
43)	C	2,4,6-Trichlor...	0.392	0.414	0.445	0.448	0.437	0.451	0.436	0.432	4.95
44)		2,4,5-Trichlor...	0.475	0.487	0.519	0.523	0.504	0.524	0.504	0.505	3.69
45)	S	2-Fluorobiphenyl	1.669	1.529	1.407	1.250	1.162	1.197		1.369	14.76
46)		1,1'-Biphenyl	1.813	1.710	1.657	1.537	1.450	1.490	1.388	1.578	9.70
47)		2-Chloronaphth...	1.372	1.294	1.270	1.195	1.131	1.167	1.110	1.220	7.81
48)		2-Nitroaniline	0.245	0.288	0.354	0.380	0.391	0.405	0.395	0.351	17.42
49)		Acenaphthylene	2.180	2.078	2.033	1.912	1.834	1.851	1.771	1.951	7.63
50)		Dimethylphthalate	1.562	1.520	1.519	1.435	1.369	1.396	1.338	1.449	5.95
51)		2,6-Dinitrotol...	0.224	0.253	0.286	0.301	0.300	0.307	0.296	0.281	10.95
52)	C	Acenaphthene	1.315	1.269	1.214	1.141	1.085	1.123	1.070	1.174	8.01
53)		3-Nitroaniline	0.256	0.289	0.318	0.322	0.319	0.307	0.291	0.300	7.88
54)	P	2,4-Dinitrophenol		0.078	0.097	0.111	0.124	0.131		0.108	19.86
55)		Dibenzofuran	2.079	1.971	1.883	1.771	1.692	1.707	1.594	1.814	9.44
56)	P	4-Nitrophenol	0.172	0.191	0.221	0.232	0.242	0.239	0.233	0.218	12.18
57)		2,4-Dinitrotol...	0.266	0.281	0.340	0.355	0.372	0.379	0.366	0.337	13.46
58)		Fluorene	1.619	1.504	1.416	1.282	1.219	1.221	1.148	1.344	12.87
59)		2,3,4,6-Tetrac...	0.344	0.366	0.400	0.405	0.393	0.399	0.382	0.384	5.77
60)		Diethylphthalate	1.495	1.493	1.485	1.423	1.389	1.362	1.296	1.420	5.37
61)		4-Chlorophenyl...	0.838	0.783	0.750	0.704	0.664	0.673	0.625	0.720	10.37
62)		4-Nitroaniline	0.258	0.275	0.293	0.282	0.290	0.283	0.276	0.279	4.12
63)		Azobenzene	1.594	1.515	1.498	1.401	1.349	1.354	1.268	1.426	8.00
64)	I	Phenanthrene-d10	----------ISTD----------								
65)		4,6-Dinitro-2-...		0.058	0.072	0.085	0.094	0.103	0.109	0.087	22.26
66)	c	n-Nitrosodiphe...	0.705	0.681	0.655	0.614	0.598	0.628	0.601	0.641	6.46
67)		4-Bromophenyl-...	0.260	0.253	0.247	0.237	0.230	0.244	0.236	0.244	4.25
68)		Hexachlorobenzene	0.260	0.248	0.243	0.235	0.229	0.242	0.237	0.242	4.22
69)		Atrazine	0.204	0.202	0.203	0.197	0.190	0.198	0.190	0.198	2.96
70)	C	Pentachlorophenol	0.123	0.136	0.156	0.162	0.167	0.174	0.172	0.156	12.45
71)		Phenanthrene	1.231	1.134	1.083	0.997	0.960	1.003	0.939	1.050	10.02
72)		Anthracene	1.244	1.150	1.104	1.007	0.965	1.006	0.956	1.062	10.15
73)		Carbazole	1.046	0.997	0.952	0.865	0.829	0.852	0.808	0.907	10.07
74)		Di-n-butylphth...	1.021	1.052	1.071	0.990	0.977	1.001	0.955	1.010	4.07
75)	C	Fluoranthene	1.297	1.190	1.123	1.008	0.979	1.002	0.949	1.078	11.96
76)	I	Chrysene-d12	----------ISTD----------								
77)		Benzidine	0.607	0.635	0.615	0.682	0.569	0.574	0.521	0.600	8.60
78)		Pyrene	1.905	1.890	1.961	1.847	1.820	1.833	1.646	1.843	5.41
79)	S	Terphenyl-d14	1.378	1.298	1.274	1.157	1.116	1.127	1.007	1.194	10.71
80)		Butylbenzylpht...	0.360	0.428	0.535	0.582	0.598	0.624	0.612	0.534	19.03
81)		Benzo(a)anthra...	1.454	1.419	1.446	1.403	1.402	1.471	1.406	1.429	1.95
82)		3,3'-Dichlorob...	0.310	0.345	0.403	0.422	0.418	0.456	0.430	0.398	12.91
83)		Chrysene	1.457	1.365	1.351	1.331	1.310	1.380	1.325	1.360	3.62
84)		Bis(2-ethylhex...	0.472	0.547	0.691	0.768	0.788	0.841	0.830	0.705	20.44
85)	c	Di-n-octyl pht...		0.595	0.816	1.093	1.187	1.360	1.445	1.083	30.01#

Method Path : Z:\svoasrv\HPCHEM1\BNA_F\Methods\
Method File : 8270-BF011923.M

86)	I	Perylene-d12	----------ISTD----------							
87)		Indeno(1,2,3-c...	1.093	1.197	1.461	1.579	1.556	1.661	1.613	1.451	15.17
88)		Benzo(b)fluora...	1.288	1.234	1.181	1.230	1.164	1.212	1.214	1.218	3.28
89)		Benzo(k)fluora...	1.336	1.302	1.303	1.211	1.157	1.208	1.177	1.242	5.66
90)	C	Benzo(a)pyrene	1.124	1.102	1.157	1.195	1.167	1.243	1.212	1.171	4.23
91)		Dibenzo(a,h)an...	0.926	1.009	1.215	1.294	1.249	1.323	1.268	1.184	12.94
92)		Benzo(g,h,i)pe...	0.925	1.038	1.267	1.354	1.328	1.422	1.385	1.246	15.21

(#) = Out of Range

Response Factor Report MSBNA_P

Method Path : Z:\svoasrv\HPCHEM1\BNA_P\Methods\
Method File : 8270E-BP012323.M
Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION
Last Update : Tue Jan 24 04:44:15 2023
Response Via : Initial Calibration

Calibration Files
2.5 =BP013545.D 5 =BP013546.D 10 =BP013547.D 20 =BP013548.D 40 =BP013549.D 50 =BP013550.D 60 =BP013551.D 80 =BP0135
52.D

		Compound	2.5	5	10	20	40	50	60	80	Avg	%RSD
1)	I	1,4-Dichlorobenzen...	----------ISTD----------									
2)		1,4-Dioxane		0.496	0.484	0.477	0.495	0.475	0.451	0.417	0.471	5.98
3)		Pyridine		1.435	1.372	1.356	1.479	1.425	1.385	1.327	1.397	3.73
4)		n-Nitrosodimet...		0.665	0.639	0.646	0.662	0.634	0.607	0.569	0.632	5.34
5)	S	2-Fluorophenol		1.214	1.132	1.167	1.231	1.185	1.153	1.090	1.167	4.12
6)		Aniline		2.143	2.087	2.149	2.168	2.121	2.080	2.027	2.110	2.32
7)	S	Phenol-d6		1.602	1.516	1.588	1.626	1.590	1.559	1.517	1.571	2.69
8)		2-Chlorophenol		1.272	1.247	1.312	1.334	1.311	1.285	1.254	1.288	2.52
9)		Benzaldehyde		1.173	1.061	1.015	0.916	0.809			0.995	13.95
10)	C	Phenol		1.647	1.588	1.649	1.678	1.650	1.615	1.567	1.628	2.42
11)		bis(2-Chloroet...		1.406	1.327	1.359	1.360	1.327	1.285	1.253	1.331	3.81
12)		1,3-Dichlorobe...		1.507	1.421	1.454	1.479	1.419	1.374	1.318	1.424	4.49
13)	C	1,4-Dichlorobe...		1.534	1.462	1.461	1.496	1.434	1.390	1.333	1.444	4.62
14)		1,2-Dichlorobe...		1.496	1.415	1.424	1.440	1.386	1.345	1.283	1.399	4.94
15)		Benzyl Alcohol		1.139	1.068	1.135	1.139	1.137	1.127	1.114	1.122	2.29
16)		2,2'-oxybis(1-...		1.981	1.864	1.888	1.837	1.785	1.729	1.674	1.822	5.64
17)		2-Methylphenol		1.194	1.152	1.210	1.208	1.194	1.171	1.146	1.182	2.19
18)		Hexachloroethane		0.479	0.468	0.485	0.506	0.495	0.480	0.467	0.483	2.93
19)	P	n-Nitroso-di-n...	0.854	1.090	1.050	1.084	1.023	1.017	0.998	0.978	1.012	7.40
20)		3+4-Methylphenols		1.531	1.497	1.574	1.582	1.587	1.561	1.559	1.556	2.05
21)	I	Naphthalene-d8	----------ISTD----------									
22)		Acetophenone		0.519	0.502	0.520	0.532	0.524	0.510	0.485	0.513	3.08
23)	S	Nitrobenzene-d5		0.231	0.255	0.297	0.330	0.340	0.337	0.331	0.303	14.54
24)		Nitrobenzene		0.267	0.285	0.324	0.351	0.356	0.353	0.345	0.326	11.09
25)		Isophorone		0.730	0.700	0.727	0.718	0.726	0.716	0.712	0.719	1.46
26)	C	2-Nitrophenol		0.057	0.064	0.085	0.106	0.122	0.130		0.094	32.19#
27)		2,4-Dimethylph...		0.291	0.292	0.312	0.321	0.323	0.319	0.312	0.310	4.29
28)		bis(2-Chloroet...		0.436	0.416	0.437	0.439	0.443	0.434	0.426	0.433	2.11
29)	C	2,4-Dichloroph...		0.247	0.260	0.282	0.298	0.303	0.303	0.305	0.285	8.26
30)		1,2,4-Trichlor...		0.325	0.311	0.324	0.336	0.335	0.329	0.320	0.326	2.64
31)		Naphthalene		1.084	1.044	1.078	1.108	1.103	1.075	1.035	1.075	2.56
32)		Benzoic acid			0.077	0.106	0.131	0.155	0.166	0.196	0.138	31.08
33)		4-Chloroaniline		0.475	0.456	0.476	0.482	0.486	0.478	0.477	0.476	1.98
34)	C	Hexachlorobuta...		0.189	0.183	0.189	0.198	0.194	0.189	0.184	0.189	2.76
35)		Caprolactam		0.085	0.081	0.091	0.091	0.094	0.097	0.110	0.093	9.99
36)	C	4-Chloro-3-met...		0.283	0.281	0.315	0.314	0.325	0.323	0.334	0.311	6.68
37)		2-Methylnaphth...		0.770	0.744	0.769	0.772	0.778	0.762	0.755	0.764	1.48
38)		1-Methylnaphth...		0.731	0.701	0.727	0.717	0.728	0.715	0.707	0.718	1.57

Method Path : Z:\svoasrv\HPCHEM1\BNA_P\Methods\
Method File : 8270E-BP012323.M

39)	I	Acenaphthene-d10	----------ISTD----------								
40)		1,2,4,5-Tetrac...	0.594	0.591	0.604	0.652	0.653	0.627	0.590	0.616	4.55
41)	P	Hexachlorocycl...		0.218	0.252	0.302	0.325	0.325	0.317	0.290	15.30
42)	S	2,4,6-Tribromo...	0.167	0.172	0.199	0.213	0.226	0.227		0.201	13.18
43)	C	2,4,6-Trichlor...	0.289	0.310	0.351	0.381	0.401	0.396	0.395	0.360	12.51
44)		2,4,5-Trichlor...	0.337	0.369	0.415	0.453	0.474	0.467	0.465	0.426	12.70
45)	S	2-Fluorobiphenyl	1.472	1.448	1.468	1.532	1.524	1.454	1.302	1.457	5.22
46)		1,1'-Biphenyl	1.616	1.566	1.596	1.677	1.672	1.614	1.503	1.606	3.76
47)		2-Chloronaphth...	1.202	1.171	1.201	1.253	1.251	1.209	1.137	1.203	3.45
48)		2-Nitroaniline	0.125	0.152	0.213	0.263	0.295	0.305	0.332	0.241	33.07
49)		Acenaphthylene	1.931	1.901	1.972	2.038	2.042	1.989	1.903	1.968	3.00
50)		Dimethylphthalate	1.492	1.429	1.487	1.499	1.518	1.477	1.506	1.487	1.93
51)		2,6-Dinitrotol...	0.125	0.165	0.233	0.264	0.287	0.291	0.315	0.240	29.36
52)	C	Acenaphthene	1.197	1.165	1.200	1.251	1.263	1.229	1.205	1.216	2.80
53)		3-Nitroaniline	0.154	0.194	0.260	0.301	0.323	0.328	0.366	0.275	27.92
54)	P	2,4-Dinitrophenol	0.033	0.038	0.051	0.065	0.078	0.087		0.058	37.60
55)		Dibenzofuran	1.905	1.832	1.863	1.902	1.911	1.840	1.797	1.864	2.34
56)	P	4-Nitrophenol		0.145	0.195	0.229	0.241	0.249		0.212	20.07
57)		2,4-Dinitrotol...	0.133	0.175	0.263	0.313	0.351	0.362		0.266	35.50
58)		Fluorene	1.523	1.445	1.503	1.509	1.513	1.456	1.420	1.482	2.71
59)		2,3,4,6-Tetrac...	0.273	0.284	0.318	0.337	0.348	0.352	0.377	0.327	11.49
60)		Diethylphthalate	1.471	1.383	1.460	1.450	1.458	1.427	1.516	1.452	2.79
61)		4-Chlorophenyl...	0.745	0.705	0.732	0.736	0.744	0.723	0.714	0.729	2.06
62)		4-Nitroaniline	0.168	0.198	0.267	0.311	0.323	0.323		0.265	25.44
63)		Azobenzene	1.474	1.388	1.432	1.420	1.417	1.372	1.373	1.411	2.58
64)	I	Phenanthrene-d10	----------ISTD----------								
65)		4,6-Dinitro-2-...		0.027	0.040	0.053	0.065	0.072	0.090	0.058	39.19
66)	c	n-Nitrosodiphe...	0.634	0.631	0.663	0.675	0.686	0.672	0.604	0.652	4.54
67)		4-Bromophenyl-...	0.214	0.210	0.220	0.226	0.233	0.233	0.216	0.222	4.15
68)		Hexachlorobenzene	0.235	0.227	0.237	0.243	0.250	0.248	0.235	0.239	3.44
69)		Atrazine	0.174	0.171	0.189	0.199	0.194	0.191	0.189	0.187	5.42
70)	C	Pentachlorophenol		0.099	0.127	0.143	0.151	0.153	0.163	0.139	16.51
71)		Phenanthrene	1.134	1.075	1.111	1.151	1.145	1.121	1.053	1.113	3.29
72)		Anthracene	1.115	1.085	1.132	1.181	1.167	1.151	1.075	1.129	3.56
73)		Carbazole	1.018	0.962	1.001	1.066	1.042	1.014	1.002	1.015	3.25
74)		Di-n-butylphth...	1.055	0.996	1.116	1.186	1.186	1.165	1.204	1.130	6.94
75)	C	Fluoranthene	1.200	1.090	1.134	1.255	1.206	1.174	1.224	1.183	4.75
76)	I	Chrysene-d12	----------ISTD----------								
77)		Benzidine	0.546	0.523	0.502	0.528	0.458	0.476	0.488	0.503	6.22
78)		Pyrene	1.598	1.534	1.636	1.482	1.539	1.498	1.418	1.529	4.75
79)	S	Terphenyl-d14	1.183	1.124	1.204	1.112	1.126	1.093	0.940	1.112	7.67
80)		Butylbenzylpht...	0.404	0.407	0.487	0.527	0.545	0.552		0.487	13.72
81)		Benzo(a)anthra...	1.403	1.336	1.388	1.431	1.430	1.410	1.355	1.393	2.62
82)		3,3'-Dichlorob...	0.392	0.390	0.439	0.482	0.487	0.486	0.466	0.449	9.51
83)		Chrysene	1.337	1.294	1.343	1.376	1.366	1.338	1.275	1.333	2.74
84)		Bis(2-ethylhex...	0.691	0.677	0.751	0.814	0.821	0.820	0.881	0.779	9.65
85)	c	Di-n-octyl pht...	1.022	1.041	1.144	1.362	1.374	1.380	1.472	1.256	14.56

Method Path : Z:\svoasrv\HPCHEM1\BNA_P\Methods\
Method File : 8270E-BP012323.M

86)	I	Perylene-d12	----------ISTD----------							
87)		Indeno(1,2,3-c...	1.332	1.396	1.481	1.589	1.607	1.584	1.324	1.473	8.39
88)		Benzo(b)fluora...	1.203	1.148	1.199	1.268	1.267	1.244	1.283	1.230	3.96
89)		Benzo(k)fluora...	1.250	1.198	1.250	1.263	1.266	1.243	1.314	1.255	2.75
90)	C	Benzo(a)pyrene	1.154	1.118	1.177	1.240	1.242	1.219	1.204	1.194	3.86
91)		Dibenzo(a,h)an...	1.101	1.171	1.240	1.331	1.355	1.335	1.118	1.236	8.70
92)		Benzo(g,h,i)pe...	1.097	1.162	1.219	1.297	1.319	1.293	1.056	1.206	8.63

(#) = Out of Range

Response Factor Report MSBNA_P

Method Path : Z:\svoasrv\HPCHEM1\BNA_P\Methods\
Method File : 8270E-BP013123.M
Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION
Last Update : Wed Feb 01 03:43:48 2023
Response Via : Initial Calibration

Calibration Files
2.5 =BP013669.D 5 =BP013670.D 10 =BP013671.D 20 =BP013672.D 40 =BP013673.D 50 =BP013674.D 60 =BP013675.D 80 =BP013676.D

		Compound	2.5	5	10	20	40	50	60	80	Avg	%RSD
1)	I	1,4-Dichlorobenzen...	----------ISTD----------									
2)		1,4-Dioxane		0.540	0.526	0.508	0.501	0.486	0.470	0.433	0.495	7.29
3)		Pyridine		1.486	1.425	1.438	1.500	1.456	1.353	1.317	1.425	4.73
4)		n-Nitrosodimet...		0.524	0.509	0.519	0.526	0.518	0.497	0.485	0.511	3.02
5)	S	2-Fluorophenol		1.265	1.187	1.186	1.213	1.160	1.117	1.060	1.170	5.68
6)		Aniline		2.056	2.015	2.068	2.094	2.105	1.949	1.937	2.032	3.32
7)	S	Phenol-d6		1.648	1.553	1.571	1.610	1.589	1.488	1.452	1.559	4.39
8)		2-Chlorophenol		1.283	1.244	1.252	1.271	1.250	1.181	1.141	1.232	4.17
9)		Benzaldehyde		1.148	1.020	0.949	0.840	0.747	0.668		0.895	19.92
10)	C	Phenol		1.684	1.624	1.644	1.685	1.679	1.554	1.528	1.628	3.94
11)		bis(2-Chloroet...		1.389	1.317	1.310	1.328	1.316	1.236	1.210	1.301	4.60
12)		1,3-Dichlorobe...		1.501	1.431	1.411	1.420	1.373	1.314	1.263	1.387	5.70
13)	C	1,4-Dichlorobe...		1.503	1.432	1.439	1.437	1.399	1.338	1.279	1.404	5.28
14)		1,2-Dichlorobe...		1.461	1.362	1.370	1.383	1.353	1.270	1.205	1.343	6.16
15)		Benzyl Alcohol		1.054	1.042	1.087	1.151	1.194	1.101	1.097	1.104	4.82
16)		2,2'-oxybis(1-...		1.631	1.535	1.545	1.557	1.547	1.428	1.390	1.519	5.41
17)		2-Methylphenol		1.152	1.112	1.159	1.188	1.203	1.098	1.075	1.141	4.18
18)		Hexachloroethane		0.485	0.461	0.460	0.467	0.471	0.458	0.439	0.463	3.02
19)	P	n-Nitroso-di-n...	0.859	0.984	0.973	1.003	1.033	1.073	0.957	0.942	0.978	6.54
20)		3+4-Methylphenols		1.528	1.513	1.576	1.621	1.660	1.502	1.496	1.557	4.11
21)	I	Naphthalene-d8	----------ISTD----------									
22)		Acetophenone		0.530	0.508	0.529	0.531	0.540	0.522	0.492	0.522	3.13
23)	S	Nitrobenzene-d5		0.290	0.302	0.339	0.360	0.383	0.377	0.357	0.344	10.38
24)		Nitrobenzene		0.331	0.337	0.372	0.387	0.409	0.400	0.374	0.373	7.94
25)		Isophorone		0.746	0.730	0.764	0.778	0.814	0.767	0.736	0.762	3.78
26)	C	2-Nitrophenol		0.121	0.129	0.147	0.163	0.180	0.176	0.176	0.156	15.31
27)		2,4-Dimethylph...		0.296	0.296	0.308	0.317	0.324	0.311	0.300	0.308	3.47
28)		bis(2-Chloroet...		0.465	0.450	0.461	0.456	0.477	0.457	0.431	0.457	3.11
29)	C	2,4-Dichloroph...		0.318	0.319	0.334	0.341	0.356	0.347	0.328	0.335	4.28
30)		1,2,4-Trichlor...		0.382	0.367	0.373	0.372	0.380	0.374	0.353	0.371	2.56
31)		Naphthalene		1.097	1.040	1.066	1.060	1.077	1.033	0.989	1.052	3.33
32)		Benzoic acid			0.170	0.207	0.232	0.260	0.250	0.253	0.229	15.14
33)		4-Chloroaniline		0.450	0.445	0.464	0.472	0.492	0.464	0.447	0.462	3.59
34)	C	Hexachlorobuta...		0.242	0.232	0.234	0.233	0.240	0.241	0.228	0.236	2.17
35)		Caprolactam		0.103	0.099	0.107	0.112	0.123	0.113	0.113	0.110	7.07
36)	C	4-Chloro-3-met...		0.328	0.324	0.352	0.358	0.387	0.361	0.355	0.352	5.97
37)		2-Methylnaphth...		0.808	0.762	0.801	0.792	0.824	0.788	0.759	0.791	2.98
38)		1-Methylnaphth...		0.757	0.723	0.753	0.743	0.775	0.738	0.710	0.743	2.94

Method Path : Z:\svoasrv\HPCHEM1\BNA_P\Methods\
Method File : 8270E-BP013123.M

39)	I	Acenaphthene-d10	----------ISTD----------								
40)		1,2,4,5-Tetrac...	0.659	0.652	0.685	0.695	0.702	0.705	0.681	0.683	3.03
41)	P	Hexachlorocycl...		0.240	0.274	0.311	0.335	0.353	0.357	0.312	14.91
42)	S	2,4,6-Tribromo...	0.273	0.279	0.295	0.306	0.323	0.313	0.311	0.300	6.16
43)	C	2,4,6-Trichlor...	0.409	0.410	0.450	0.466	0.478	0.473	0.462	0.450	6.43
44)		2,4,5-Trichlor...	0.480	0.476	0.527	0.543	0.562	0.553	0.543	0.526	6.60
45)	S	2-Fluorobiphenyl	1.473	1.429	1.477	1.458	1.438	1.414	1.316	1.429	3.85
46)		1,1'-Biphenyl	1.545	1.486	1.551	1.539	1.535	1.509	1.430	1.513	2.88
47)		2-Chloronaphth...	1.181	1.143	1.198	1.191	1.188	1.173	1.115	1.170	2.56
48)		2-Nitroaniline	0.164	0.179	0.227	0.267	0.303	0.300	0.309	0.250	24.21
49)		Acenaphthylene	1.892	1.815	1.924	1.922	1.938	1.901	1.815	1.887	2.71
50)		Dimethylphthalate	1.558	1.482	1.571	1.570	1.609	1.542	1.496	1.547	2.87
51)		2,6-Dinitrotol...	0.167	0.208	0.274	0.306	0.332	0.324	0.325	0.276	23.48
52)	C	Acenaphthene	1.225	1.184	1.210	1.225	1.246	1.231	1.181	1.215	2.01
53)		3-Nitroaniline	0.204	0.247	0.297	0.327	0.352	0.343	0.340	0.302	18.60
54)	P	2,4-Dinitrophenol		0.102	0.131	0.169	0.201	0.197	0.210	0.168	25.88
55)		Dibenzofuran	1.959	1.911	1.935	1.903	1.926	1.884	1.789	1.901	2.88
56)	P	4-Nitrophenol		0.211	0.249	0.276	0.300	0.287	0.286	0.268	12.20
57)		2,4-Dinitrotol...	0.214	0.262	0.342	0.400	0.446	0.436	0.441	0.363	25.76
58)		Fluorene	1.549	1.492	1.547	1.505	1.506	1.463	1.384	1.492	3.78
59)		2,3,4,6-Tetrac...	0.430	0.428	0.453	0.466	0.489	0.472	0.465	0.458	4.85
60)		Diethylphthalate	1.499	1.450	1.496	1.494	1.544	1.473	1.425	1.483	2.59
61)		4-Chlorophenyl...	0.844	0.807	0.812	0.813	0.831	0.807	0.776	0.813	2.65
62)		4-Nitroaniline	0.195	0.236	0.298	0.329	0.352	0.343	0.344	0.299	20.47
63)		Azobenzene	1.344	1.335	1.411	1.395	1.421	1.372	1.311	1.370	3.03
64)	I	Phenanthrene-d10	----------ISTD----------								
65)		4,6-Dinitro-2-...		0.069	0.088	0.107	0.120	0.119	0.124	0.104	20.90
66)	c	n-Nitrosodiphe...	0.597	0.602	0.591	0.584	0.581	0.575	0.543	0.582	3.37
67)		4-Bromophenyl-...	0.224	0.221	0.230	0.230	0.238	0.234	0.228	0.229	2.52
68)		Hexachlorobenzene	0.259	0.247	0.252	0.251	0.259	0.257	0.250	0.254	1.90
69)		Atrazine	0.184	0.188	0.195	0.201	0.194	0.187	0.178	0.189	4.12
70)	C	Pentachlorophenol	0.162	0.168	0.185	0.195	0.203	0.200	0.198	0.187	8.87
71)		Phenanthrene	1.125	1.080	1.097	1.075	1.071	1.058	0.998	1.072	3.64
72)		Anthracene	1.102	1.080	1.101	1.101	1.095	1.080	1.017	1.082	2.80
73)		Carbazole	0.990	1.002	1.006	0.999	0.994	0.972	0.917	0.983	3.17
74)		Di-n-butylphth...	1.044	1.055	1.085	1.097	1.117	1.091	1.039	1.075	2.74
75)	C	Fluoranthene	1.358	1.328	1.355	1.346	1.356	1.337	1.262	1.335	2.53
76)	I	Chrysene-d12	----------ISTD----------								
77)		Benzidine	0.446	0.468	0.411	0.471	0.421	0.392	0.415	0.432	6.98
78)		Pyrene	1.361	1.313	1.355	1.378	1.373	1.355	1.284	1.346	2.55
79)	S	Terphenyl-d14	1.050	1.020	1.043	1.034	1.021	0.995	0.887	1.007	5.55
80)		Butylbenzylpht...	0.321	0.321	0.347	0.378	0.403	0.398	0.403	0.367	10.08
81)		Benzo(a)anthra...	1.414	1.353	1.399	1.417	1.421	1.394	1.326	1.389	2.60
82)		3,3'-Dichlorob...	0.398	0.405	0.447	0.463	0.465	0.452	0.443	0.439	6.10
83)		Chrysene	1.370	1.311	1.336	1.342	1.334	1.324	1.247	1.324	2.90
84)		Bis(2-ethylhex...	0.584	0.576	0.608	0.643	0.666	0.653	0.647	0.625	5.71
85)	c	Di-n-octyl pht...	1.069	1.047	1.108	1.173	1.220	1.198	1.180	1.142	5.88

Method Path : Z:\svoasrv\HPCHEM1\BNA_P\Methods\
Method File : 8270E-BP013123.M

86)	I	Perylene-d12	----------ISTD----------							
87)		Indeno(1,2,3-c...	1.562	1.482	1.517	1.530	1.549	1.531	1.476	1.521	2.11
88)		Benzo(b)fluora...	1.187	1.140	1.231	1.201	1.262	1.228	1.165	1.202	3.47
89)		Benzo(k)fluora...	1.243	1.138	1.216	1.248	1.208	1.200	1.174	1.204	3.19
90)	C	Benzo(a)pyrene	1.194	1.153	1.199	1.207	1.223	1.208	1.168	1.193	2.06
91)		Dibenzo(a,h)an...	1.290	1.236	1.263	1.274	1.288	1.271	1.215	1.263	2.18
92)		Benzo(g,h,i)pe...	1.297	1.221	1.249	1.258	1.274	1.258	1.221	1.254	2.19

(#) = Out of Range

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: O1232 SAS No.: O1232 SDG No.: O1232

Instrument ID: BNA_F Calibration Date/Time: 01/20/2023 16:40

Lab File ID: BF132164.D Init. Calib. Date(s): 01/19/2023 01/19/2023

EPA Sample No.: SSTDCCC040 Init. Calib. Time(s): 11:21 15:11

GC Column: DB-UI ID: 0.18 (mm)

COMPOUND	RRF	RRF040	MIN RRF	%D	MAX%D
2-Fluorophenol	1.145	1.115		-2.6	
Phenol-d6	1.441	1.412		-2.0	
Nitrobenzene-d5	0.376	0.393		4.5	
Naphthalene	1.027	1.008		-1.9	
2-Fluorobiphenyl	1.369	1.224		-10.6	
Acenaphthylene	1.951	1.915		-1.8	
Acenaphthene	1.174	1.145		-2.5	20.0
Fluorene	1.344	1.292		-3.9	
2,4,6-Tribromophenol	0.214	0.231		7.9	
Phenanthrene	1.050	1.000		-4.8	
Anthracene	1.062	1.012		-4.7	
Fluoranthene	1.078	1.118		3.7	20.0
Pyrene	1.843	1.942		5.4	
Terphenyl-d14	1.194	1.203		0.8	
Benzo(a)anthracene	1.429	1.449		1.4	
Chrysene	1.360	1.334		-1.9	
Benzo(b)fluoranthene	1.218	1.276		4.8	
Benzo(k)fluoranthene	1.242	1.197		-3.6	
Benzo(a)pyrene	1.171	1.185		1.2	20.0
Indeno(1,2,3-cd)pyrene	1.451	1.547		6.6	
Dibenzo(a,h)anthracene	1.184	1.248		5.4	
Benzo(g,h,i)perylene	1.246	1.338		7.4	

All other compounds must meet a minimum RRF of 0.010.

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7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: O1232 SAS No.: O1232 SDG No.: O1232

Instrument ID: BNA_P Calibration Date/Time: 01/24/2023 15:13

Lab File ID: BP013571.D Init. Calib. Date(s): 01/23/2023 01/23/2023

EPA Sample No.: SSTDCCC040 Init. Calib. Time(s): 11:25 16:01

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

COMPOUND	RRF	RRF040	MIN RRF	%D	MAX%D
2-Fluorophenol	1.167	1.147		-1.7	
Phenol-d6	1.571	1.597		1.7	
Nitrobenzene-d5	0.303	0.333		9.9	
Naphthalene	1.075	1.033		-3.9	
2-Fluorobiphenyl	1.457	1.331		-8.6	
Acenaphthylene	1.968	1.875		-4.7	
Acenaphthene	1.216	1.183		-2.7	20.0
Fluorene	1.482	1.443		-2.6	
2,4,6-Tribromophenol	0.201	0.241		19.9	
Phenanthrene	1.113	1.061		-4.7	
Anthracene	1.129	1.078		-4.5	
Fluoranthene	1.183	1.251		5.7	20.0
Pyrene	1.529	1.345		-12.0	
Terphenyl-d14	1.112	1.000		-10.1	
Benzo(a)anthracene	1.393	1.340		-3.8	
Chrysene	1.333	1.268		-4.9	
Benzo(b)fluoranthene	1.230	1.204		-2.1	
Benzo(k)fluoranthene	1.255	1.230		-2.0	
Benzo(a)pyrene	1.194	1.155		-3.3	20.0
Indeno(1,2,3-cd)pyrene	1.473	1.333		-9.5	
Dibenzo(a,h)anthracene	1.236	1.129		-8.7	
Benzo(g,h,i)perylene	1.206	1.048		-13.1	

All other compounds must meet a minimum RRF of 0.010.