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

LAB CHRONICLE

OrderID:	P5021	**OrderDate:**	11/27/2024 10:41:00 AM
Client:	LiRo Engineers, Inc.	**Project:**	RFK Bridge
Contact:	Martin Wesolowski	**Location:**	L41,VOA Ref. #3 Water

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
P5021-01	**MW-06**	**Water**			**11/26/24**			**11/27/24**
			VOCMS Group1	8260-Low			12/02/24	
P5021-02	**MW-08**	**Water**			**11/26/24**			**11/27/24**
			VOCMS Group1	8260-Low			12/02/24	
P5021-03	**MW-10**	**Water**			**11/26/24**			**11/27/24**
			VOCMS Group1	8260-Low			12/02/24	
P5021-04	**MW-11**	**Water**			**11/26/24**			**11/27/24**
			VOCMS Group1	8260-Low			12/02/24	
P5021-05	**MW-13**	**Water**			**11/26/24**			**11/27/24**
			VOCMS Group1	8260-Low			12/02/24	
P5021-06	**MW-12**	**Water**			**11/26/24**			**11/27/24**
			VOCMS Group1	8260-Low			11/27/24	
P5021-06DL	**MW-12DL**	**Water**			**11/26/24**			**11/27/24**
			VOCMS Group1	8260-Low			12/02/24	

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

Hit Summary Sheet
SW-846

SDG No.: P5021

Client: LiRo Engineers, Inc.

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID:	**MW-06**							
P5021-01	MW-06	Water	Benzene	8.40		0.16	1.00	ug/L
P5021-01	MW-06	Water	Toluene	1.40		0.18	1.00	ug/L
P5021-01	MW-06	Water	Ethyl Benzene	2.00		0.16	1.00	ug/L
P5021-01	MW-06	Water	m/p-Xylenes	3.50		0.31	2.00	ug/L
P5021-01	MW-06	Water	o-Xylene	1.50		0.14	1.00	ug/L
P5021-01	MW-06	Water	Isopropylbenzene	20.5		0.13	1.00	ug/L
P5021-01	MW-06	Water	n-propylbenzene	48.7		0.14	1.00	ug/L
P5021-01	MW-06	Water	1,3,5-Trimethylbenzene	1.10		0.18	1.00	ug/L
P5021-01	MW-06	Water	tert-Butylbenzene	0.42	J	0.17	1.00	ug/L
P5021-01	MW-06	Water	1,2,4-Trimethylbenzene	2.10		0.18	1.00	ug/L
P5021-01	MW-06	Water	sec-Butylbenzene	3.40		0.17	1.00	ug/L
P5021-01	MW-06	Water	n-Butylbenzene	2.20		0.22	1.00	ug/L
P5021-01	MW-06	Water	Naphthalene	77.5		0.59	1.00	ug/L
			Total Voc :	173				
			Total Concentration:	173				
Client ID:	**MW-08**							
P5021-02	MW-08	Water	Methyl tert-butyl Ether	25.0		1.60	10.0	ug/L
P5021-02	MW-08	Water	Benzene	180		1.60	10.0	ug/L
P5021-02	MW-08	Water	Toluene	9.70	J	1.80	10.0	ug/L
P5021-02	MW-08	Water	Ethyl Benzene	270		1.60	10.0	ug/L
P5021-02	MW-08	Water	m/p-Xylenes	380		3.10	20.0	ug/L
P5021-02	MW-08	Water	o-Xylene	270		1.40	10.0	ug/L
P5021-02	MW-08	Water	Isopropylbenzene	58.1		1.30	10.0	ug/L
P5021-02	MW-08	Water	n-propylbenzene	130		1.40	10.0	ug/L
P5021-02	MW-08	Water	1,2,4-Trimethylbenzene	610		1.80	10.0	ug/L
P5021-02	MW-08	Water	n-Butylbenzene	13.9		2.20	10.0	ug/L
P5021-02	MW-08	Water	Naphthalene	400		5.90	10.0	ug/L
			Total Voc :	2350				
			Total Concentration:	2350				
Client ID:	**MW-10**							
P5021-03	MW-10	Water	n-propylbenzene	0.27	J	0.14	1.00	ug/L
P5021-03	MW-10	Water	1,3,5-Trimethylbenzene	0.33	J	0.18	1.00	ug/L
P5021-03	MW-10	Water	tert-Butylbenzene	0.34	J	0.17	1.00	ug/L
P5021-03	MW-10	Water	sec-Butylbenzene	0.33	J	0.17	1.00	ug/L
P5021-03	MW-10	Water	n-Butylbenzene	1.10		0.22	1.00	ug/L
P5021-03	MW-10	Water	Naphthalene	2.10		0.59	1.00	ug/L

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

Hit Summary Sheet
SW-846

SDG No.: P5021

Client: LiRo Engineers, Inc.

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
			Total Voc :	4.47				
			Total Concentration:	4.47				
Client ID:	**MW-13**							
P5021-05	MW-13	Water	Methyl tert-butyl Ether	2.20		0.16	1.00	ug/L
P5021-05	MW-13	Water	Benzene	15.3		0.16	1.00	ug/L
P5021-05	MW-13	Water	Toluene	0.68	J	0.18	1.00	ug/L
P5021-05	MW-13	Water	Ethyl Benzene	19.0		0.16	1.00	ug/L
P5021-05	MW-13	Water	m/p-Xylenes	3.60		0.31	2.00	ug/L
P5021-05	MW-13	Water	o-Xylene	4.40		0.14	1.00	ug/L
P5021-05	MW-13	Water	Isopropylbenzene	1.50		0.13	1.00	ug/L
P5021-05	MW-13	Water	n-propylbenzene	2.20		0.14	1.00	ug/L
P5021-05	MW-13	Water	1,3,5-Trimethylbenzene	0.35	J	0.18	1.00	ug/L
P5021-05	MW-13	Water	1,2,4-Trimethylbenzene	1.60		0.18	1.00	ug/L
P5021-05	MW-13	Water	n-Butylbenzene	0.52	J	0.22	1.00	ug/L
			Total Voc :	51.4				
			Total Concentration:	51.4				
Client ID:	**MW-12**							
P5021-06	MW-12	Water	Benzene	330	E	0.16	1.00	ug/L
P5021-06	MW-12	Water	Toluene	38.9		0.18	1.00	ug/L
P5021-06	MW-12	Water	Ethyl Benzene	760	E	0.16	1.00	ug/L
P5021-06	MW-12	Water	m/p-Xylenes	250		0.31	2.00	ug/L
P5021-06	MW-12	Water	o-Xylene	100		0.14	1.00	ug/L
P5021-06	MW-12	Water	Isopropylbenzene	23.1		0.13	1.00	ug/L
P5021-06	MW-12	Water	n-propylbenzene	51.9		0.14	1.00	ug/L
P5021-06	MW-12	Water	1,3,5-Trimethylbenzene	2.70		0.18	1.00	ug/L
P5021-06	MW-12	Water	1,2,4-Trimethylbenzene	450	E	0.18	1.00	ug/L
P5021-06	MW-12	Water	sec-Butylbenzene	2.90		0.17	1.00	ug/L
P5021-06	MW-12	Water	p-Isopropyltoluene	3.50		0.15	1.00	ug/L
P5021-06	MW-12	Water	n-Butylbenzene	4.80		0.22	1.00	ug/L
P5021-06	MW-12	Water	Naphthalene	250	E	0.59	1.00	ug/L
			Total Voc :	2270				
			Total Concentration:	2270				
Client ID:	**MW-12DL**							
P5021-06DL	MW-12DL	Water	Benzene	270	D	3.20	20.0	ug/L
P5021-06DL	MW-12DL	Water	Toluene	30.0	D	3.60	20.0	ug/L
P5021-06DL	MW-12DL	Water	Ethyl Benzene	580	D	3.20	20.0	ug/L
P5021-06DL	MW-12DL	Water	m/p-Xylenes	190	D	6.20	40.0	ug/L
P5021-06DL	MW-12DL	Water	o-Xylene	85.2	D	2.80	20.0	ug/L

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

Hit Summary Sheet
SW-846

SDG No.: P5021

Client: LiRo Engineers, Inc.

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
P5021-06DL	MW-12DL	Water	Isopropylbenzene	18.6	JD	2.60	20.0	ug/L
P5021-06DL	MW-12DL	Water	n-propylbenzene	36.6	D	2.80	20.0	ug/L
P5021-06DL	MW-12DL	Water	1,2,4-Trimethylbenzene	350	D	3.60	20.0	ug/L
P5021-06DL	MW-12DL	Water	Naphthalene	180	D	11.8	20.0	ug/L
			Total Voc :	1740				
			Total Concentration:	1740				

SAMPLE DATA

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

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	11/26/24
Project:	RFK Bridge	Date Received:	11/27/24
Client Sample ID:	MW-06	SDG No.:	P5021
Lab Sample ID:	P5021-01	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX044059.D	1		12/02/24 12:35	VX120224

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
1634-04-4	Methyl tert-butyl Ether	1.00	U	0.16	1.00	ug/L
71-43-2	Benzene	8.40		0.16	1.00	ug/L
108-88-3	Toluene	1.40		0.18	1.00	ug/L
100-41-4	Ethyl Benzene	2.00		0.16	1.00	ug/L
179601-23-1	m/p-Xylenes	3.50		0.31	2.00	ug/L
95-47-6	o-Xylene	1.50		0.14	1.00	ug/L
98-82-8	Isopropylbenzene	20.5		0.13	1.00	ug/L
103-65-1	n-propylbenzene	48.7		0.14	1.00	ug/L
108-67-8	1,3,5-Trimethylbenzene	1.10		0.18	1.00	ug/L
98-06-6	tert-Butylbenzene	0.42	J	0.17	1.00	ug/L
95-63-6	1,2,4-Trimethylbenzene	2.10		0.18	1.00	ug/L
135-98-8	sec-Butylbenzene	3.40		0.17	1.00	ug/L
99-87-6	p-Isopropyltoluene	1.00	U	0.15	1.00	ug/L
104-51-8	n-Butylbenzene	2.20		0.22	1.00	ug/L
91-20-3	Naphthalene	77.5		0.59	1.00	ug/L
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	51.0		74 - 125	102%	SPK: 50
1868-53-7	Dibromofluoromethane	47.5		75 - 124	95%	SPK: 50
2037-26-5	Toluene-d8	48.9		86 - 113	98%	SPK: 50
460-00-4	4-Bromofluorobenzene	52.0		77 - 121	104%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	138000	5.543			
540-36-3	1,4-Difluorobenzene	259000	6.757			
3114-55-4	Chlorobenzene-d5	223000	10.055			
3855-82-1	1,4-Dichlorobenzene-d4	102000	12.024			

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

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	11/26/24
Project:	RFK Bridge	Date Received:	11/27/24
Client Sample ID:	MW-06	SDG No.:	P5021
Lab Sample ID:	P5021-01	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX044059.D	1		12/02/24 12:35	VX120224

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

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

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	11/26/24
Project:	RFK Bridge	Date Received:	11/27/24
Client Sample ID:	MW-08	SDG No.:	P5021
Lab Sample ID:	P5021-02	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX044057.D	10		12/02/24 11:49	VX120224

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
1634-04-4	Methyl tert-butyl Ether	25.0		1.60	10.0	ug/L
71-43-2	Benzene	180		1.60	10.0	ug/L
108-88-3	Toluene	9.70	J	1.80	10.0	ug/L
100-41-4	Ethyl Benzene	270		1.60	10.0	ug/L
179601-23-1	m/p-Xylenes	380		3.10	20.0	ug/L
95-47-6	o-Xylene	270		1.40	10.0	ug/L
98-82-8	Isopropylbenzene	58.1		1.30	10.0	ug/L
103-65-1	n-propylbenzene	130		1.40	10.0	ug/L
108-67-8	1,3,5-Trimethylbenzene	10.0	U	1.80	10.0	ug/L
98-06-6	tert-Butylbenzene	10.0	U	1.70	10.0	ug/L
95-63-6	1,2,4-Trimethylbenzene	610		1.80	10.0	ug/L
135-98-8	sec-Butylbenzene	10.0	U	1.70	10.0	ug/L
99-87-6	p-Isopropyltoluene	10.0	U	1.50	10.0	ug/L
104-51-8	n-Butylbenzene	13.9		2.20	10.0	ug/L
91-20-3	Naphthalene	400		5.90	10.0	ug/L
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	48.9		74 - 125	98%	SPK: 50
1868-53-7	Dibromofluoromethane	48.0		75 - 124	96%	SPK: 50
2037-26-5	Toluene-d8	48.8		86 - 113	98%	SPK: 50
460-00-4	4-Bromofluorobenzene	51.6		77 - 121	103%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	123000	5.544			
540-36-3	1,4-Difluorobenzene	229000	6.757			
3114-55-4	Chlorobenzene-d5	199000	10.049			
3855-82-1	1,4-Dichlorobenzene-d4	92200	12.018			

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

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	11/26/24
Project:	RFK Bridge	Date Received:	11/27/24
Client Sample ID:	MW-08	SDG No.:	P5021
Lab Sample ID:	P5021-02	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX044057.D	10		12/02/24 11:49	VX120224

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

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

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	11/26/24
Project:	RFK Bridge	Date Received:	11/27/24
Client Sample ID:	MW-10	SDG No.:	P5021
Lab Sample ID:	P5021-03	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX044060.D	1		12/02/24 12:58	VX120224

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
1634-04-4	Methyl tert-butyl Ether	1.00	U	0.16	1.00	ug/L
71-43-2	Benzene	1.00	U	0.16	1.00	ug/L
108-88-3	Toluene	1.00	U	0.18	1.00	ug/L
100-41-4	Ethyl Benzene	1.00	U	0.16	1.00	ug/L
179601-23-1	m/p-Xylenes	2.00	U	0.31	2.00	ug/L
95-47-6	o-Xylene	1.00	U	0.14	1.00	ug/L
98-82-8	Isopropylbenzene	1.00	U	0.13	1.00	ug/L
103-65-1	n-propylbenzene	0.27	J	0.14	1.00	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.33	J	0.18	1.00	ug/L
98-06-6	tert-Butylbenzene	0.34	J	0.17	1.00	ug/L
95-63-6	1,2,4-Trimethylbenzene	1.00	U	0.18	1.00	ug/L
135-98-8	sec-Butylbenzene	0.33	J	0.17	1.00	ug/L
99-87-6	p-Isopropyltoluene	1.00	U	0.15	1.00	ug/L
104-51-8	n-Butylbenzene	1.10		0.22	1.00	ug/L
91-20-3	Naphthalene	2.10		0.59	1.00	ug/L
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	51.8		74 - 125	104%	SPK: 50
1868-53-7	Dibromofluoromethane	46.4		75 - 124	93%	SPK: 50
2037-26-5	Toluene-d8	49.3		86 - 113	99%	SPK: 50
460-00-4	4-Bromofluorobenzene	49.9		77 - 121	100%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	121000	5.544			
540-36-3	1,4-Difluorobenzene	237000	6.751			
3114-55-4	Chlorobenzene-d5	202000	10.055			
3855-82-1	1,4-Dichlorobenzene-d4	89000	12.018			

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

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	11/26/24
Project:	RFK Bridge	Date Received:	11/27/24
Client Sample ID:	MW-10	SDG No.:	P5021
Lab Sample ID:	P5021-03	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX044060.D	1		12/02/24 12:58	VX120224

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

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

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	11/26/24
Project:	RFK Bridge	Date Received:	11/27/24
Client Sample ID:	MW-11	SDG No.:	P5021
Lab Sample ID:	P5021-04	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX044061.D	1		12/02/24 13:21	VX120224

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
1634-04-4	Methyl tert-butyl Ether	1.00	U	0.16	1.00	ug/L
71-43-2	Benzene	1.00	U	0.16	1.00	ug/L
108-88-3	Toluene	1.00	U	0.18	1.00	ug/L
100-41-4	Ethyl Benzene	1.00	U	0.16	1.00	ug/L
179601-23-1	m/p-Xylenes	2.00	U	0.31	2.00	ug/L
95-47-6	o-Xylene	1.00	U	0.14	1.00	ug/L
98-82-8	Isopropylbenzene	1.00	U	0.13	1.00	ug/L
103-65-1	n-propylbenzene	1.00	U	0.14	1.00	ug/L
108-67-8	1,3,5-Trimethylbenzene	1.00	U	0.18	1.00	ug/L
98-06-6	tert-Butylbenzene	1.00	U	0.17	1.00	ug/L
95-63-6	1,2,4-Trimethylbenzene	1.00	U	0.18	1.00	ug/L
135-98-8	sec-Butylbenzene	1.00	U	0.17	1.00	ug/L
99-87-6	p-Isopropyltoluene	1.00	U	0.15	1.00	ug/L
104-51-8	n-Butylbenzene	1.00	U	0.22	1.00	ug/L
91-20-3	Naphthalene	1.00	U	0.59	1.00	ug/L
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	51.9		74 - 125	104%	SPK: 50
1868-53-7	Dibromofluoromethane	47.0		75 - 124	94%	SPK: 50
2037-26-5	Toluene-d8	51.0		86 - 113	102%	SPK: 50
460-00-4	4-Bromofluorobenzene	51.6		77 - 121	103%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	120000	5.544			
540-36-3	1,4-Difluorobenzene	230000	6.757			
3114-55-4	Chlorobenzene-d5	209000	10.049			
3855-82-1	1,4-Dichlorobenzene-d4	91500	12.018			

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

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	11/26/24
Project:	RFK Bridge	Date Received:	11/27/24
Client Sample ID:	MW-11	SDG No.:	P5021
Lab Sample ID:	P5021-04	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX044061.D	1		12/02/24 13:21	VX120224

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

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

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	11/26/24
Project:	RFK Bridge	Date Received:	11/27/24
Client Sample ID:	MW-13	SDG No.:	P5021
Lab Sample ID:	P5021-05	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX044062.D	1		12/02/24 13:44	VX120224

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
1634-04-4	Methyl tert-butyl Ether	2.20		0.16	1.00	ug/L
71-43-2	Benzene	15.3		0.16	1.00	ug/L
108-88-3	Toluene	0.68	J	0.18	1.00	ug/L
100-41-4	Ethyl Benzene	19.0		0.16	1.00	ug/L
179601-23-1	m/p-Xylenes	3.60		0.31	2.00	ug/L
95-47-6	o-Xylene	4.40		0.14	1.00	ug/L
98-82-8	Isopropylbenzene	1.50		0.13	1.00	ug/L
103-65-1	n-propylbenzene	2.20		0.14	1.00	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.35	J	0.18	1.00	ug/L
98-06-6	tert-Butylbenzene	1.00	U	0.17	1.00	ug/L
95-63-6	1,2,4-Trimethylbenzene	1.60		0.18	1.00	ug/L
135-98-8	sec-Butylbenzene	1.00	U	0.17	1.00	ug/L
99-87-6	p-Isopropyltoluene	1.00	U	0.15	1.00	ug/L
104-51-8	n-Butylbenzene	0.52	J	0.22	1.00	ug/L
91-20-3	Naphthalene	1.00	U	0.59	1.00	ug/L
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	53.1		74 - 125	106%	SPK: 50
1868-53-7	Dibromofluoromethane	46.7		75 - 124	93%	SPK: 50
2037-26-5	Toluene-d8	50.2		86 - 113	100%	SPK: 50
460-00-4	4-Bromofluorobenzene	51.1		77 - 121	102%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	126000	5.544			
540-36-3	1,4-Difluorobenzene	245000	6.757			
3114-55-4	Chlorobenzene-d5	217000	10.049			
3855-82-1	1,4-Dichlorobenzene-d4	94600	12.018			

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

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	11/26/24
Project:	RFK Bridge	Date Received:	11/27/24
Client Sample ID:	MW-13	SDG No.:	P5021
Lab Sample ID:	P5021-05	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX044062.D	1		12/02/24 13:44	VX120224

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

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

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	11/26/24
Project:	RFK Bridge	Date Received:	11/27/24
Client Sample ID:	MW-12	SDG No.:	P5021
Lab Sample ID:	P5021-06	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX044049.D	1		11/27/24 18:29	VX112724

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
1634-04-4	Methyl tert-butyl Ether	1.00	U	0.16	1.00	ug/L
71-43-2	Benzene	330	E	0.16	1.00	ug/L
108-88-3	Toluene	38.9		0.18	1.00	ug/L
100-41-4	Ethyl Benzene	760	E	0.16	1.00	ug/L
179601-23-1	m/p-Xylenes	250		0.31	2.00	ug/L
95-47-6	o-Xylene	100		0.14	1.00	ug/L
98-82-8	Isopropylbenzene	23.1		0.13	1.00	ug/L
103-65-1	n-propylbenzene	51.9		0.14	1.00	ug/L
108-67-8	1,3,5-Trimethylbenzene	2.70		0.18	1.00	ug/L
98-06-6	tert-Butylbenzene	1.00	U	0.17	1.00	ug/L
95-63-6	1,2,4-Trimethylbenzene	450	E	0.18	1.00	ug/L
135-98-8	sec-Butylbenzene	2.90		0.17	1.00	ug/L
99-87-6	p-Isopropyltoluene	3.50		0.15	1.00	ug/L
104-51-8	n-Butylbenzene	4.80		0.22	1.00	ug/L
91-20-3	Naphthalene	250	E	0.59	1.00	ug/L
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	53.2		74 - 125	106%	SPK: 50
1868-53-7	Dibromofluoromethane	46.4		75 - 124	93%	SPK: 50
2037-26-5	Toluene-d8	50.2		86 - 113	100%	SPK: 50
460-00-4	4-Bromofluorobenzene	52.3		77 - 121	105%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	113000	5.55			
540-36-3	1,4-Difluorobenzene	218000	6.757			
3114-55-4	Chlorobenzene-d5	192000	10.055			
3855-82-1	1,4-Dichlorobenzene-d4	91200	12.018			

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

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	11/26/24
Project:	RFK Bridge	Date Received:	11/27/24
Client Sample ID:	MW-12	SDG No.:	P5021
Lab Sample ID:	P5021-06	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX044049.D	1		11/27/24 18:29	VX112724

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

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

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	11/26/24
Project:	RFK Bridge	Date Received:	11/27/24
Client Sample ID:	MW-12DL	SDG No.:	P5021
Lab Sample ID:	P5021-06DL	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX044058.D	20		12/02/24 12:12	VX120224

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
1634-04-4	Methyl tert-butyl Ether	20.0	UD	3.20	20.0	ug/L
71-43-2	Benzene	270	D	3.20	20.0	ug/L
108-88-3	Toluene	30.0	D	3.60	20.0	ug/L
100-41-4	Ethyl Benzene	580	D	3.20	20.0	ug/L
179601-23-1	m/p-Xylenes	190	D	6.20	40.0	ug/L
95-47-6	o-Xylene	85.2	D	2.80	20.0	ug/L
98-82-8	Isopropylbenzene	18.6	JD	2.60	20.0	ug/L
103-65-1	n-propylbenzene	36.6	D	2.80	20.0	ug/L
108-67-8	1,3,5-Trimethylbenzene	20.0	UD	3.60	20.0	ug/L
98-06-6	tert-Butylbenzene	20.0	UD	3.40	20.0	ug/L
95-63-6	1,2,4-Trimethylbenzene	350	D	3.60	20.0	ug/L
135-98-8	sec-Butylbenzene	20.0	UD	3.40	20.0	ug/L
99-87-6	p-Isopropyltoluene	20.0	UD	3.00	20.0	ug/L
104-51-8	n-Butylbenzene	20.0	UD	4.40	20.0	ug/L
91-20-3	Naphthalene	180	D	11.8	20.0	ug/L
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	51.2		74 - 125	102%	SPK: 50
1868-53-7	Dibromofluoromethane	46.3		75 - 124	93%	SPK: 50
2037-26-5	Toluene-d8	49.4		86 - 113	99%	SPK: 50
460-00-4	4-Bromofluorobenzene	51.1		77 - 121	102%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	126000	5.544			
540-36-3	1,4-Difluorobenzene	245000	6.757			
3114-55-4	Chlorobenzene-d5	215000	10.055			
3855-82-1	1,4-Dichlorobenzene-d4	97900	12.018			

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

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	11/26/24
Project:	RFK Bridge	Date Received:	11/27/24
Client Sample ID:	MW-12DL	SDG No.:	P5021
Lab Sample ID:	P5021-06DL	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX044058.D	20		12/02/24 12:12	VX120224

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

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

Surrogate Summary

SDG No.: P5021

Client: LiRo Engineers, Inc.

Analytical Method: SW8260-Low

Lab Sample ID	Client ID	Parameter	Spike	Result	RecoveryQual	Limits Low	Limits High
P5021-01	MW-06	1,2-Dichloroethane-d4	50	51.0	102	74	125
		Dibromofluoromethane	50	47.5	95	75	124
		Toluene-d8	50	48.9	98	86	113
		4-Bromofluorobenzene	50	52.0	104	77	121
P5021-02	MW-08	1,2-Dichloroethane-d4	50	48.9	98	74	125
		Dibromofluoromethane	50	48.0	96	75	124
		Toluene-d8	50	48.8	98	86	113
		4-Bromofluorobenzene	50	51.6	103	77	121
P5021-03	MW-10	1,2-Dichloroethane-d4	50	51.8	104	74	125
		Dibromofluoromethane	50	46.4	93	75	124
		Toluene-d8	50	49.3	99	86	113
		4-Bromofluorobenzene	50	50.0	100	77	121
P5021-04	MW-11	1,2-Dichloroethane-d4	50	51.9	104	74	125
		Dibromofluoromethane	50	47.0	94	75	124
		Toluene-d8	50	51.0	102	86	113
		4-Bromofluorobenzene	50	51.6	103	77	121
P5021-05	MW-13	1,2-Dichloroethane-d4	50	53.1	106	74	125
		Dibromofluoromethane	50	46.7	93	75	124
		Toluene-d8	50	50.2	100	86	113
		4-Bromofluorobenzene	50	51.1	102	77	121
P5021-06	MW-12	1,2-Dichloroethane-d4	50	53.2	106	74	125
		Dibromofluoromethane	50	46.4	93	75	124
		Toluene-d8	50	50.2	100	86	113
		4-Bromofluorobenzene	50	52.3	105	77	121
P5021-06DL	MW-12DL	1,2-Dichloroethane-d4	50	51.2	102	74	125
		Dibromofluoromethane	50	46.3	93	75	124
		Toluene-d8	50	49.4	99	86	113
		4-Bromofluorobenzene	50	51.1	102	77	121
VX1127WBL01	VX1127WBL01	1,2-Dichloroethane-d4	50	50.8	102	74	125
		Dibromofluoromethane	50	46.6	93	75	124
		Toluene-d8	50	48.9	98	86	113
		4-Bromofluorobenzene	50	47.2	94	77	121
VX1127WBS01	VX1127WBS01	1,2-Dichloroethane-d4	50	54.7	109	74	125
		Dibromofluoromethane	50	53.5	107	75	124
		Toluene-d8	50	53.1	106	86	113
		4-Bromofluorobenzene	50	53.6	107	77	121
VX1202WBL01	VX1202WBL01	1,2-Dichloroethane-d4	50	49.6	99	74	125
		Dibromofluoromethane	50	47.3	95	75	124
		Toluene-d8	50	48.6	97	86	113
		4-Bromofluorobenzene	50	46.5	93	77	121
VX1202WBS01	VX1202WBS01	1,2-Dichloroethane-d4	50	54.9	110	74	125
		Dibromofluoromethane	50	53.7	107	75	124
		Toluene-d8	50	50.8	102	86	113
		4-Bromofluorobenzene	50	52.8	105	77	121
VX1202WBSD0	VX1202WBSD01	1,2-Dichloroethane-d4	50	55.6	111	74	125
		Dibromofluoromethane	50	54.7	109	75	124
		Toluene-d8	50	53.5	107	86	113
		4-Bromofluorobenzene	50	55.0	110	77	121

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

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary

SW-846

SDG No.: P5021

Client: LiRo Engineers, Inc.

Analytical Method: SW8260-Low **Datafile :** VX044028.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Limits Low	Limits High	RPD
VX1127WBS01	Methyl tert-butyl Ether	20	21.6	ug/L	108			78	114	
	Benzene	20	20.9	ug/L	104			82	109	
	Toluene	20	21.2	ug/L	106			82	110	
	Ethyl Benzene	20	21.1	ug/L	106			83	109	
	m/p-Xylenes	40	42.2	ug/L	106			82	110	
	o-Xylene	20	21.0	ug/L	105			83	109	
	Isopropylbenzene	20	21.5	ug/L	108			83	112	
	N-propylbenzene	20	21.6	ug/L	108			83	112	
	1,3,5-Trimethylbenzene	20	21.9	ug/L	110			85	112	
	tert-Butylbenzene	20	21.5	ug/L	108			83	112	
	1,2,4-Trimethylbenzene	20	21.9	ug/L	110			85	111	
	Sec-butylbenzene	20	21.5	ug/L	108			81	114	
	p-Isopropyltoluene	20	22.4	ug/L	112			78	116	
	n-Butylbenzene	20	21.5	ug/L	108			75	115	
	Naphthalene	20	20.8	ug/L	104			78	119	

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

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary

SW-846

SDG No.: P5021

Client: LiRo Engineers, Inc.

Analytical Method: SW8260-Low **Datafile :** VX044055.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Limits Low	Limits High	RPD
VX1202WBS01	Methyl tert-butyl Ether	20	20.3	ug/L	102			78	114	
	Benzene	20	19.4	ug/L	97			82	109	
	Toluene	20	19.4	ug/L	97			82	110	
	Ethyl Benzene	20	20.7	ug/L	104			83	109	
	m/p-Xylenes	40	41.5	ug/L	104			82	110	
	o-Xylene	20	21.3	ug/L	106			83	109	
	Isopropylbenzene	20	20.6	ug/L	103			83	112	
	N-propylbenzene	20	20.7	ug/L	104			83	112	
	1,3,5-Trimethylbenzene	20	21.3	ug/L	106			85	112	
	tert-Butylbenzene	20	21.3	ug/L	106			83	112	
	1,2,4-Trimethylbenzene	20	21.2	ug/L	106			85	111	
	Sec-butylbenzene	20	20.8	ug/L	104			81	114	
	p-Isopropyltoluene	20	21.5	ug/L	108			78	116	
	n-Butylbenzene	20	20.1	ug/L	101			75	115	
	Naphthalene	20	20.3	ug/L	102			78	119	

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

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary

SW-846

SDG No.: P5021

Client: LiRo Engineers, Inc.

Analytical Method: SW8260-Low **Datafile :** VX044056.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Limits Low	Limits High	Limits RPD
VX1202WBSD01	Methyl tert-butyl Ether	20	21.5	ug/L	108	6		78	114	20
	Benzene	20	19.8	ug/L	99	2		82	109	20
	Toluene	20	20.8	ug/L	104	7		82	110	20
	Ethyl Benzene	20	21.0	ug/L	105	1		83	109	20
	m/p-Xylenes	40	40.8	ug/L	102	2		82	110	20
	o-Xylene	20	21.1	ug/L	106	0		83	109	20
	Isopropylbenzene	20	21.1	ug/L	106	3		83	112	20
	N-propylbenzene	20	20.9	ug/L	104	0		83	112	20
	1,3,5-Trimethylbenzene	20	21.3	ug/L	106	0		85	112	20
	tert-Butylbenzene	20	21.4	ug/L	107	1		83	112	20
	1,2,4-Trimethylbenzene	20	21.2	ug/L	106	0		85	111	20
	Sec-butylbenzene	20	21.2	ug/L	106	2		81	114	20
	p-Isopropyltoluene	20	21.8	ug/L	109	1		78	116	20
	n-Butylbenzene	20	21.0	ug/L	105	4		75	115	20
	Naphthalene	20	20.6	ug/L	103	1		78	119	20

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

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VX1127WBL01

Lab Name: CHEMTECH Contract: LIRO01

Lab Code: CHEM Case No.: P5021 SAS No.: P5021 SDG NO.: P5021

Lab File ID: VX044026.D Lab Sample ID: VX1127WBL01

Date Analyzed: 11/27/2024 Time Analyzed: 09:38

GC Column: DB-624UI ID: 0.18 (mm) Heated Purge: (Y/N) N

Instrument ID: MSVOA_X

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

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
VX1127WBS01	VX1127WBS01	VX044028.D	11/27/2024
MW-12	P5021-06	VX044049.D	11/27/2024

COMMENTS:

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

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VX1202WBL01

Lab Name: CHEMTECH Contract: LIRO01

Lab Code: CHEM Case No.: P5021 SAS No.: P5021 SDG NO.: P5021

Lab File ID: VX044054.D Lab Sample ID: VX1202WBL01

Date Analyzed: 12/02/2024 Time Analyzed: 10:37

GC Column: DB-624UI ID: 0.18 (mm) Heated Purge: (Y/N) N

Instrument ID: MSVOA_X

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

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
VX1202WBS01	VX1202WBS01	VX044055.D	12/02/2024
VX1202WBSD01	VX1202WBSD01	VX044056.D	12/02/2024
MW-08	P5021-02	VX044057.D	12/02/2024
MW-12DL	P5021-06DL	VX044058.D	12/02/2024
MW-06	P5021-01	VX044059.D	12/02/2024
MW-10	P5021-03	VX044060.D	12/02/2024
MW-11	P5021-04	VX044061.D	12/02/2024
MW-13	P5021-05	VX044062.D	12/02/2024

COMMENTS:

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

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: CHEMTECH Contract: LIRO01

Lab Code: CHEM Case No.: P5021 SAS No.: P5021 SDG NO.: P5021

Lab File ID: VX043924.D BFB Injection Date: 11/21/2024

Instrument ID: MSVOA_X BFB Injection Time: 08:51

GC Column: DB-624UI ID: 0.18 (mm) Heated Purge: Y/N N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	22.4
75	30.0 - 60.0% of mass 95	54.2
95	Base Peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	6.5
173	Less than 2.0% of mass 174	0.5 (0.7) 1
174	50.0 - 100.0% of mass 95	70.5
175	5.0 - 9.0% of mass 174	4.8 (6.8) 1
176	95.0 - 101.0% of mass 174	67.9 (96.4) 1
177	5.0 - 9.0% of mass 176	4.9 (7.3) 2

1-Value is % mass 174 2-Value is % mass 176

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
VSTDICC001	VSTDICC001	VX043925.D	11/21/2024	09:47
VSTDICC005	VSTDICC005	VX043926.D	11/21/2024	10:14
VSTDICC020	VSTDICC020	VX043927.D	11/21/2024	10:37
VSTDICCC050	VSTDICCC050	VX043928.D	11/21/2024	11:17
VSTDICC100	VSTDICC100	VX043929.D	11/21/2024	11:40
VSTDICC150	VSTDICC150	VX043930.D	11/21/2024	12:03

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

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: CHEMTECH Contract: LIRO01

Lab Code: CHEM Case No.: P5021 SAS No.: P5021 SDG NO.: P5021

Lab File ID: VX044023.D BFB Injection Date: 11/27/2024

Instrument ID: MSVOA_X BFB Injection Time: 07:52

GC Column: DB-624UI ID: 0.18 (mm) Heated Purge: Y/N N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	22.5
75	30.0 - 60.0% of mass 95	56.3
95	Base Peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	6.3
173	Less than 2.0% of mass 174	0.8 (1.1) 1
174	50.0 - 100.0% of mass 95	76.1
175	5.0 - 9.0% of mass 174	5.6 (7.3) 1
176	95.0 - 101.0% of mass 174	73 (96) 1
177	5.0 - 9.0% of mass 176	4.8 (6.6) 2

1-Value is % mass 174 2-Value is % mass 176

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
VSTDCCC050	VSTDCCC050	VX044024.D	11/27/2024	08:46
VX1127WBL01	VX1127WBL01	VX044026.D	11/27/2024	09:38
VX1127WBS01	VX1127WBS01	VX044028.D	11/27/2024	10:27
MW-12	P5021-06	VX044049.D	11/27/2024	18:29

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

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: CHEMTECH Contract: LIRO01

Lab Code: CHEM Case No.: P5021 SAS No.: P5021 SDG NO.: P5021

Lab File ID: VX044051.D BFB Injection Date: 12/02/2024

Instrument ID: MSVOA_X BFB Injection Time: 08:35

GC Column: DB-624UI ID: 0.18 (mm) Heated Purge: Y/N N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.2
75	30.0 - 60.0% of mass 95	56.1
95	Base Peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	6.3
173	Less than 2.0% of mass 174	0.5 (0.6) 1
174	50.0 - 100.0% of mass 95	74.9
175	5.0 - 9.0% of mass 174	5.3 (7.1) 1
176	95.0 - 101.0% of mass 174	71.7 (95.7) 1
177	5.0 - 9.0% of mass 176	4.6 (6.4) 2

1-Value is % mass 174

2-Value is % mass 176

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
VSTDCCC050	VSTDCCC050	VX044052.D	12/02/2024	09:45
VX1202WBL01	VX1202WBL01	VX044054.D	12/02/2024	10:37
VX1202WBS01	VX1202WBS01	VX044055.D	12/02/2024	11:00
VX1202WBSD01	VX1202WBSD01	VX044056.D	12/02/2024	11:27
MW-08	P5021-02	VX044057.D	12/02/2024	11:49
MW-12DL	P5021-06DL	VX044058.D	12/02/2024	12:12
MW-06	P5021-01	VX044059.D	12/02/2024	12:35
MW-10	P5021-03	VX044060.D	12/02/2024	12:58
MW-11	P5021-04	VX044061.D	12/02/2024	13:21
MW-13	P5021-05	VX044062.D	12/02/2024	13:44

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

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH Contract: LIRO01

Lab Code: CHEM Case No.: P5021 SAS No.: P5021 SDG NO.: P5021

Lab File ID: VX044024.D Date Analyzed: 11/27/2024

Instrument ID: MSVOA_X Time Analyzed: 08:46

GC Column: DB-624UI ID: 0.18 (mm) Heated Purge: (Y/N) N

	IS1 AREA #	RT #	IS2 AREA #	RT #	IS3 AREA #	RT #
12 HOUR STD	130547	5.54	218884	6.75	184783	10.05
UPPER LIMIT	261094	6.037	437768	7.251	369566	10.549
LOWER LIMIT	65273.5	5.037	109442	6.251	92391.5	9.549
EPA SAMPLE NO.						
MW-12	112926	5.55	218400	6.76	192264	10.06
VX1127WBL01	125569	5.54	244455	6.75	212718	10.05
VX1127WBS01	106843	5.54	192894	6.76	162801	10.05

IS1 = Pentafluorobenzene
IS2 = 1,4-Difluorobenzene
IS3 = Chlorobenzene-d5

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 LOWER LIMIT = -0.50 minutes of internal standard RT

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

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

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH Contract: LIRO01

Lab Code: CHEM Case No.: P5021 SAS No.: P5021 SDG NO.: P5021

Lab File ID: VX044024.D Date Analyzed: 11/27/2024

Instrument ID: MSVOA_X Time Analyzed: 08:46

GC Column: DB-624UI ID: 0.18 (mm) Heated Purge: (Y/N) N

	IS4 AREA #	RT #				
12 HOUR STD	86408	12.018				
UPPER LIMIT	172816	12.518				
LOWER LIMIT	43204	11.518				
EPA SAMPLE NO.						
MW-12	91181	12.02				
VX1127WBL01	92049	12.02				
VX1127WBS01	74629	12.02				

IS4 = 1,4-Dichlorobenzene-d4

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 LOWER LIMIT = -0.50 minutes of internal standard RT

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

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

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH Contract: LIRO01

Lab Code: CHEM Case No.: P5021 SAS No.: P5021 SDG NO.: P5021

Lab File ID: VX044052.D Date Analyzed: 12/02/2024

Instrument ID: MSVOA_X Time Analyzed: 09:45

GC Column: DB-624UI ID: 0.18 (mm) Heated Purge: (Y/N) N

	IS1 AREA #	RT #	IS2 AREA #	RT #	IS3 AREA #	RT #
12 HOUR STD	140021	5.54	242098	6.75	204952	10.05
UPPER LIMIT	280042	6.043	484196	7.25	409904	10.549
LOWER LIMIT	70010.5	5.043	121049	6.25	102476	9.549
EPA SAMPLE NO.						
MW-06	137934	5.54	259323	6.76	223099	10.06
MW-08	123344	5.54	229138	6.76	199363	10.05
MW-10	121483	5.54	237218	6.75	202018	10.06
MW-11	120070	5.54	229971	6.76	208817	10.05
MW-13	125796	5.54	244811	6.76	217402	10.05
MW-12DL	125735	5.54	244727	6.76	215420	10.06
VX1202WBL01	137622	5.54	262897	6.76	221008	10.05
VX1202WBS01	133564	5.55	236701	6.76	191057	10.06
VX1202WBSD01	119891	5.54	216106	6.75	186524	10.05

IS1 = Pentafluorobenzene
IS2 = 1,4-Difluorobenzene
IS3 = Chlorobenzene-d5

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 LOWER LIMIT = -0.50 minutes of internal standard RT

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

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

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH Contract: LIRO01

Lab Code: CHEM Case No.: P5021 SAS No.: P5021 SDG NO.: P5021

Lab File ID: VX044052.D Date Analyzed: 12/02/2024

Instrument ID: MSVOA_X Time Analyzed: 09:45

GC Column: DB-624UI ID: 0.18 (mm) Heated Purge: (Y/N) N

	IS4 AREA #	RT #				
12 HOUR STD	98861	12.018				
UPPER LIMIT	197722	12.518				
LOWER LIMIT	49430.5	11.518				
EPA SAMPLE NO.						
MW-06	102016	12.02				
MW-08	92150	12.02				
MW-10	89001	12.02				
MW-11	91525	12.02				
MW-13	94569	12.02				
MW-12DL	97904	12.02				
VX1202WBL01	93273	12.02				
VX1202WBS01	90073	12.02				
VX1202WBSD01	85631	12.02				

IS4 = 1,4-Dichlorobenzene-d4

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 LOWER 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

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

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	
Project:	RFK Bridge	Date Received:	
Client Sample ID:	VX1127WBL01	SDG No.:	P5021
Lab Sample ID:	VX1127WBL01	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX044026.D	1		11/27/24 09:38	VX112724

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
1634-04-4	Methyl tert-butyl Ether	1.00	U	0.16	1.00	ug/L
71-43-2	Benzene	1.00	U	0.16	1.00	ug/L
108-88-3	Toluene	1.00	U	0.18	1.00	ug/L
100-41-4	Ethyl Benzene	1.00	U	0.16	1.00	ug/L
179601-23-1	m/p-Xylenes	2.00	U	0.31	2.00	ug/L
95-47-6	o-Xylene	1.00	U	0.14	1.00	ug/L
98-82-8	Isopropylbenzene	1.00	U	0.13	1.00	ug/L
103-65-1	n-propylbenzene	1.00	U	0.14	1.00	ug/L
108-67-8	1,3,5-Trimethylbenzene	1.00	U	0.18	1.00	ug/L
98-06-6	tert-Butylbenzene	1.00	U	0.17	1.00	ug/L
95-63-6	1,2,4-Trimethylbenzene	1.00	U	0.18	1.00	ug/L
135-98-8	sec-Butylbenzene	1.00	U	0.17	1.00	ug/L
99-87-6	p-Isopropyltoluene	1.00	U	0.15	1.00	ug/L
104-51-8	n-Butylbenzene	1.00	U	0.22	1.00	ug/L
91-20-3	Naphthalene	1.00	U	0.59	1.00	ug/L
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	50.8		74 - 125	102%	SPK: 50
1868-53-7	Dibromofluoromethane	46.6		75 - 124	93%	SPK: 50
2037-26-5	Toluene-d8	48.9		86 - 113	98%	SPK: 50
460-00-4	4-Bromofluorobenzene	47.2		77 - 121	94%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	126000	5.538			
540-36-3	1,4-Difluorobenzene	244000	6.751			
3114-55-4	Chlorobenzene-d5	213000	10.049			
3855-82-1	1,4-Dichlorobenzene-d4	92000	12.018			

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

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	
Project:	RFK Bridge	Date Received:	
Client Sample ID:	VX1127WBL01	SDG No.:	P5021
Lab Sample ID:	VX1127WBL01	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX044026.D	1		11/27/24 09:38	VX112724

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

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

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	
Project:	RFK Bridge	Date Received:	
Client Sample ID:	VX1202WBL01	SDG No.:	P5021
Lab Sample ID:	VX1202WBL01	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX044054.D	1		12/02/24 10:37	VX120224

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
1634-04-4	Methyl tert-butyl Ether	1.00	U	0.16	1.00	ug/L
71-43-2	Benzene	1.00	U	0.16	1.00	ug/L
108-88-3	Toluene	1.00	U	0.18	1.00	ug/L
100-41-4	Ethyl Benzene	1.00	U	0.16	1.00	ug/L
179601-23-1	m/p-Xylenes	2.00	U	0.31	2.00	ug/L
95-47-6	o-Xylene	1.00	U	0.14	1.00	ug/L
98-82-8	Isopropylbenzene	1.00	U	0.13	1.00	ug/L
103-65-1	n-propylbenzene	1.00	U	0.14	1.00	ug/L
108-67-8	1,3,5-Trimethylbenzene	1.00	U	0.18	1.00	ug/L
98-06-6	tert-Butylbenzene	1.00	U	0.17	1.00	ug/L
95-63-6	1,2,4-Trimethylbenzene	1.00	U	0.18	1.00	ug/L
135-98-8	sec-Butylbenzene	1.00	U	0.17	1.00	ug/L
99-87-6	p-Isopropyltoluene	1.00	U	0.15	1.00	ug/L
104-51-8	n-Butylbenzene	1.00	U	0.22	1.00	ug/L
91-20-3	Naphthalene	1.00	U	0.59	1.00	ug/L
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	49.6		74 - 125	99%	SPK: 50
1868-53-7	Dibromofluoromethane	47.3		75 - 124	95%	SPK: 50
2037-26-5	Toluene-d8	48.6		86 - 113	97%	SPK: 50
460-00-4	4-Bromofluorobenzene	46.5		77 - 121	93%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	138000	5.544			
540-36-3	1,4-Difluorobenzene	263000	6.757			
3114-55-4	Chlorobenzene-d5	221000	10.049			
3855-82-1	1,4-Dichlorobenzene-d4	93300	12.018			

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

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	
Project:	RFK Bridge	Date Received:	
Client Sample ID:	VX1202WBL01	SDG No.:	P5021
Lab Sample ID:	VX1202WBL01	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX044054.D	1		12/02/24 10:37	VX120224

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

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

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	
Project:	RFK Bridge	Date Received:	
Client Sample ID:	VX1127WBS01	SDG No.:	P5021
Lab Sample ID:	VX1127WBS01	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX044028.D	1		11/27/24 10:27	VX112724

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
1634-04-4	Methyl tert-butyl Ether	21.6		0.16	1.00	ug/L
71-43-2	Benzene	20.9		0.16	1.00	ug/L
108-88-3	Toluene	21.2		0.18	1.00	ug/L
100-41-4	Ethyl Benzene	21.1		0.16	1.00	ug/L
179601-23-1	m/p-Xylenes	42.2		0.31	2.00	ug/L
95-47-6	o-Xylene	21.0		0.14	1.00	ug/L
98-82-8	Isopropylbenzene	21.5		0.13	1.00	ug/L
103-65-1	n-propylbenzene	21.6		0.14	1.00	ug/L
108-67-8	1,3,5-Trimethylbenzene	21.9		0.18	1.00	ug/L
98-06-6	tert-Butylbenzene	21.5		0.17	1.00	ug/L
95-63-6	1,2,4-Trimethylbenzene	21.9		0.18	1.00	ug/L
135-98-8	sec-Butylbenzene	21.5		0.17	1.00	ug/L
99-87-6	p-Isopropyltoluene	22.4		0.15	1.00	ug/L
104-51-8	n-Butylbenzene	21.5		0.22	1.00	ug/L
91-20-3	Naphthalene	20.8		0.59	1.00	ug/L
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	54.7		74 - 125	109%	SPK: 50
1868-53-7	Dibromofluoromethane	53.5		75 - 124	107%	SPK: 50
2037-26-5	Toluene-d8	53.1		86 - 113	106%	SPK: 50
460-00-4	4-Bromofluorobenzene	53.6		77 - 121	107%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	107000	5.544			
540-36-3	1,4-Difluorobenzene	193000	6.757			
3114-55-4	Chlorobenzene-d5	163000	10.049			
3855-82-1	1,4-Dichlorobenzene-d4	74600	12.018			

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

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	
Project:	RFK Bridge	Date Received:	
Client Sample ID:	VX1127WBS01	SDG No.:	P5021
Lab Sample ID:	VX1127WBS01	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX044028.D	1		11/27/24 10:27	VX112724

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

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

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	
Project:	RFK Bridge	Date Received:	
Client Sample ID:	VX1202WBS01	SDG No.:	P5021
Lab Sample ID:	VX1202WBS01	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX044055.D	1		12/02/24 11:00	VX120224

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
1634-04-4	Methyl tert-butyl Ether	20.3		0.16	1.00	ug/L
71-43-2	Benzene	19.4		0.16	1.00	ug/L
108-88-3	Toluene	19.4		0.18	1.00	ug/L
100-41-4	Ethyl Benzene	20.7		0.16	1.00	ug/L
179601-23-1	m/p-Xylenes	41.5		0.31	2.00	ug/L
95-47-6	o-Xylene	21.3		0.14	1.00	ug/L
98-82-8	Isopropylbenzene	20.6		0.13	1.00	ug/L
103-65-1	n-propylbenzene	20.7		0.14	1.00	ug/L
108-67-8	1,3,5-Trimethylbenzene	21.3		0.18	1.00	ug/L
98-06-6	tert-Butylbenzene	21.3		0.17	1.00	ug/L
95-63-6	1,2,4-Trimethylbenzene	21.2		0.18	1.00	ug/L
135-98-8	sec-Butylbenzene	20.8		0.17	1.00	ug/L
99-87-6	p-Isopropyltoluene	21.5		0.15	1.00	ug/L
104-51-8	n-Butylbenzene	20.1		0.22	1.00	ug/L
91-20-3	Naphthalene	20.3		0.59	1.00	ug/L
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	54.9		74 - 125	110%	SPK: 50
1868-53-7	Dibromofluoromethane	53.7		75 - 124	107%	SPK: 50
2037-26-5	Toluene-d8	50.8		86 - 113	102%	SPK: 50
460-00-4	4-Bromofluorobenzene	52.8		77 - 121	105%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	134000	5.55			
540-36-3	1,4-Difluorobenzene	237000	6.757			
3114-55-4	Chlorobenzene-d5	191000	10.055			
3855-82-1	1,4-Dichlorobenzene-d4	90100	12.018			

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

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	
Project:	RFK Bridge	Date Received:	
Client Sample ID:	VX1202WBS01	SDG No.:	P5021
Lab Sample ID:	VX1202WBS01	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX044055.D	1		12/02/24 11:00	VX120224

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

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

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	
Project:	RFK Bridge	Date Received:	
Client Sample ID:	VX1202WBSD01	SDG No.:	P5021
Lab Sample ID:	VX1202WBSD01	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX044056.D	1		12/02/24 11:27	VX120224

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
1634-04-4	Methyl tert-butyl Ether	21.5		0.16	1.00	ug/L
71-43-2	Benzene	19.8		0.16	1.00	ug/L
108-88-3	Toluene	20.8		0.18	1.00	ug/L
100-41-4	Ethyl Benzene	21.0		0.16	1.00	ug/L
179601-23-1	m/p-Xylenes	40.8		0.31	2.00	ug/L
95-47-6	o-Xylene	21.1		0.14	1.00	ug/L
98-82-8	Isopropylbenzene	21.1		0.13	1.00	ug/L
103-65-1	n-propylbenzene	20.9		0.14	1.00	ug/L
108-67-8	1,3,5-Trimethylbenzene	21.3		0.18	1.00	ug/L
98-06-6	tert-Butylbenzene	21.4		0.17	1.00	ug/L
95-63-6	1,2,4-Trimethylbenzene	21.2		0.18	1.00	ug/L
135-98-8	sec-Butylbenzene	21.2		0.17	1.00	ug/L
99-87-6	p-Isopropyltoluene	21.8		0.15	1.00	ug/L
104-51-8	n-Butylbenzene	21.0		0.22	1.00	ug/L
91-20-3	Naphthalene	20.6		0.59	1.00	ug/L
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	55.6		74 - 125	111%	SPK: 50
1868-53-7	Dibromofluoromethane	54.7		75 - 124	109%	SPK: 50
2037-26-5	Toluene-d8	53.5		86 - 113	107%	SPK: 50
460-00-4	4-Bromofluorobenzene	55.0		77 - 121	110%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	120000	5.544			
540-36-3	1,4-Difluorobenzene	216000	6.751			
3114-55-4	Chlorobenzene-d5	187000	10.049			
3855-82-1	1,4-Dichlorobenzene-d4	85600	12.018			

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

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	
Project:	RFK Bridge	Date Received:	
Client Sample ID:	VX1202WBSD01	SDG No.:	P5021
Lab Sample ID:	VX1202WBSD01	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX044056.D	1		12/02/24 11:27	VX120224

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

CALIBRATION SUMMARY

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

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: CHEMTECH Contract: LIRO01

Lab Code: CHEM Case No.: P5021 SAS No.: P5021 SDG No.: P5021

Instrument ID: MSVOA_X Calibration Date(s): 11/21/2024 11/21/2024

Heated Purge: (Y/N) N Calibration Time(s): 09:47 12:03

GC Column: DB-624UI ID: 0.18 (mm)

LAB FILE ID: RRF001 = VX043925.D RRF005 = VX043926.D RRF020 = VX043927.D
RRF050 = VX043928.D RRF100 = VX043929.D RRF150 = VX043930.D

COMPOUND	RRF001	RRF005	RRF020	RRF050	RRF100	RRF150	$\overline{RRF}$	% RSD
Methyl tert-butyl Ether	1.732	1.991	2.212	2.264	2.160	2.192	2.092	9.5
Benzene	1.211	1.369	1.457	1.494	1.388	1.402	1.387	7
Toluene	0.636	0.839	0.883	0.921	0.850	0.852	0.830	12
Ethyl Benzene	1.579	1.831	1.910	2.024	1.884	1.938	1.861	8.2
m/p-Xylenes	0.610	0.663	0.704	0.762	0.700	0.725	0.694	7.6
o-Xylene	0.543	0.665	0.691	0.757	0.693	0.716	0.678	10.7
Isopropylbenzene	3.435	3.927	3.996	4.097	3.679	3.927	3.843	6.3
n-propylbenzene	3.667	4.115	4.469	4.733	4.286	4.486	4.293	8.6
1,3,5-Trimethylbenzene	2.704	3.115	3.352	3.444	3.118	3.238	3.162	8.2
tert-Butylbenzene	2.581	3.097	3.266	3.440	3.152	3.269	3.134	9.4
1,2,4-Trimethylbenzene	2.557	3.173	3.366	3.440	3.124	3.228	3.148	9.9
sec-Butylbenzene	3.116	3.921	3.968	4.249	3.812	3.974	3.840	10
p-Isopropyltoluene	2.255	3.043	3.316	3.521	3.219	3.362	3.119	14.5
n-Butylbenzene	1.897	2.580	2.805	3.184	2.909	3.126	2.750	17.2
Naphthalene	2.605	3.361	3.698	4.005	3.733	4.058	3.576	15
1,2-Dichloroethane-d4		0.926	0.876	0.751	0.855	0.880	0.858	7.6
Dibromofluoromethane		0.371	0.353	0.327	0.359	0.376	0.357	5.4
Toluene-d8		1.327	1.237	1.104	1.232	1.257	1.232	6.6
4-Bromofluorobenzene		0.401	0.414	0.387	0.438	0.455	0.419	6.6

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

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

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: LIRO01

Lab Code: CHEM Case No.: P5021 SAS No.: P5021 SDG No.: P5021

Instrument ID: MSVOA_X Calibration Date/Time: 11/27/2024 08:46

Lab File ID: VX044024.D Init. Calib. Date(s): 11/21/2024 11/21/2024

Heated Purge: (Y/N) N Init. Calib. Time(s): 09:47 12:03

GC Column: DB-624UI ID: 0.18 (mm)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX%D
Methyl tert-butyl Ether	2.092	1.967		-5.97	20
Benzene	1.387	1.345		-3.03	20
Toluene	0.830	0.830		0	20
Ethyl Benzene	1.861	1.877		0.86	20
m/p-Xylenes	0.694	0.703		1.3	20
o-Xylene	0.678	0.683		0.74	20
Isopropylbenzene	3.843	3.898		1.43	20
n-propylbenzene	4.293	4.376		1.93	20
1,3,5-Trimethylbenzene	3.162	3.201		1.23	20
tert-Butylbenzene	3.134	3.187		1.69	20
1,2,4-Trimethylbenzene	3.148	3.189		1.3	20
sec-Butylbenzene	3.840	3.885		1.17	20
p-Isopropyltoluene	3.119	3.286		5.35	20
n-Butylbenzene	2.750	2.884		4.87	20
Naphthalene	3.576	3.607		0.87	20
1,2-Dichloroethane-d4	0.858	0.810		-5.59	20
Dibromofluoromethane	0.357	0.370		3.64	20
Toluene-d8	1.232	1.254		1.79	20
4-Bromofluorobenzene	0.419	0.419		0	20

All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

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

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: LIRO01

Lab Code: CHEM Case No.: P5021 SAS No.: P5021 SDG No.: P5021

Instrument ID: MSVOA_X Calibration Date/Time: 12/02/2024 09:45

Lab File ID: VX044052.D Init. Calib. Date(s): 11/21/2024 11/21/2024

Heated Purge: (Y/N) N Init. Calib. Time(s): 09:47 12:03

GC Column: DB-624UI ID: 0.18 (mm)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX%D
Methyl tert-butyl Ether	2.092	2.203		5.31	20
Benzene	1.387	1.412		1.8	20
Toluene	0.830	0.852		2.65	20
Ethyl Benzene	1.861	1.956		5.11	20
m/p-Xylenes	0.694	0.726		4.61	20
o-Xylene	0.678	0.704		3.84	20
Isopropylbenzene	3.843	3.944		2.63	20
n-propylbenzene	4.293	4.440		3.42	20
1,3,5-Trimethylbenzene	3.162	3.291		4.08	20
tert-Butylbenzene	3.134	3.312		5.68	20
1,2,4-Trimethylbenzene	3.148	3.302		4.89	20
sec-Butylbenzene	3.840	4.041		5.23	20
p-Isopropyltoluene	3.119	3.375		8.21	20
n-Butylbenzene	2.750	3.049		10.87	20
Naphthalene	3.576	3.761		5.17	20
1,2-Dichloroethane-d4	0.858	0.890		3.73	20
Dibromofluoromethane	0.357	0.379		6.16	20
Toluene-d8	1.232	1.268		2.92	20
4-Bromofluorobenzene	0.419	0.442		5.49	20

All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

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

LAB CHRONICLE

OrderID:	P5021	**OrderDate:**	11/27/2024 10:41:00 AM
Client:	LiRo Engineers, Inc.	**Project:**	RFK Bridge
Contact:	Martin Wesolowski	**Location:**	L41,VOA Ref. #3 Water

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
P5021-01	**MW-06**	**Water**			**11/26/24**			**11/27/24**
			SVOCMS Group1	8270E		11/27/24	12/02/24	
P5021-02	**MW-08**	**Water**			**11/26/24**			**11/27/24**
			SVOCMS Group1	8270E		11/27/24	12/03/24	
P5021-03	**MW-10**	**Water**			**11/26/24**			**11/27/24**
			SVOCMS Group1	8270E		11/27/24	12/03/24	
P5021-04	**MW-11**	**Water**			**11/26/24**			**11/27/24**
			SVOCMS Group1	8270E		11/27/24	12/02/24	
P5021-05	**MW-13**	**Water**			**11/26/24**			**11/27/24**
			SVOCMS Group1	8270E		11/27/24	12/02/24	
P5021-06	**MW-12**	**Water**			**11/26/24**			**11/27/24**
			SVOCMS Group1	8270E		11/27/24	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.: P5021

Client: LiRo Engineers, Inc.

Sample ID	Client ID		Parameter	Concentration	C	MDL	RDL	Units
Client ID : MW-06								
P5021-01	MW-06	WATER	Acenaphthene	11.800		0.83	5.1	ug/L
P5021-01	MW-06	WATER	Fluorene	5.200		0.98	5.1	ug/L
P5021-01	MW-06	WATER	Anthracene	2.700	J	1.1	5.1	ug/L
P5021-01	MW-06	WATER	Fluoranthene	8.900		1.3	5.1	ug/L
P5021-01	MW-06	WATER	Pyrene	6.800	Q	1.1	5.1	ug/L
			Total Svoc :		**35.40**			
			Total Concentration:		**35.40**			

SAMPLE DATA

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

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	11/26/24
Project:	RFK Bridge	Date Received:	11/27/24
Client Sample ID:	MW-06	SDG No.:	P5021
Lab Sample ID:	P5021-01	Matrix:	Water
Analytical Method:	SW8270	% Solid:	0
Sample Wt/Vol:	980 Units: mL	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOCMS Group1
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
BF140691.D	1	11/27/24 08:40	12/02/24 16:21	PB165296

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
208-96-8	Acenaphthylene	5.10	UQ	1.10	5.10	ug/L
83-32-9	Acenaphthene	11.8		0.83	5.10	ug/L
86-73-7	Fluorene	5.20		0.98	5.10	ug/L
85-01-8	Phenanthrene	5.10	U	0.91	5.10	ug/L
120-12-7	Anthracene	2.70	J	1.10	5.10	ug/L
206-44-0	Fluoranthene	8.90		1.30	5.10	ug/L
129-00-0	Pyrene	6.80	Q	1.10	5.10	ug/L
56-55-3	Benzo(a)anthracene	5.10	UQ	0.96	5.10	ug/L
218-01-9	Chrysene	5.10	UQ	0.88	5.10	ug/L
205-99-2	Benzo(b)fluoranthene	5.10	U	1.20	5.10	ug/L
207-08-9	Benzo(k)fluoranthene	5.10	UQ	1.20	5.10	ug/L
50-32-8	Benzo(a)pyrene	5.10	U	1.70	5.10	ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	5.10	U	1.00	5.10	ug/L
53-70-3	Dibenzo(a,h)anthracene	5.10	U	1.20	5.10	ug/L
191-24-2	Benzo(g,h,i)perylene	5.10	U	1.20	5.10	ug/L
SURROGATES						
4165-60-0	Nitrobenzene-d5	89.8		49 - 133	90%	SPK: 100
321-60-8	2-Fluorobiphenyl	83.0		52 - 132	83%	SPK: 100
1718-51-0	Terphenyl-d14	80.1		48 - 125	80%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	83000	6.869			
1146-65-2	Naphthalene-d8	310000	8.151			
15067-26-2	Acenaphthene-d10	187000	9.904			
1517-22-2	Phenanthrene-d10	344000	11.398			
1719-03-5	Chrysene-d12	220000	14.045			
1520-96-3	Perylene-d12	187000	15.551			

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

Report of Analysis

Client:	LiRo Engineers, Inc.			Date Collected:	11/26/24
Project:	RFK Bridge			Date Received:	11/27/24
Client Sample ID:	MW-06			SDG No.:	P5021
Lab Sample ID:	P5021-01			Matrix:	Water
Analytical Method:	SW8270			% Solid:	0
Sample Wt/Vol:	980	Units:	mL	Final Vol:	1000 uL
Soil Aliquot Vol:			uL	Test:	SVOCMS Group1
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
BF140691.D	1	11/27/24 08:40	12/02/24 16:21	PB165296

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

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

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	11/26/24
Project:	RFK Bridge	Date Received:	11/27/24
Client Sample ID:	MW-08	SDG No.:	P5021
Lab Sample ID:	P5021-02	Matrix:	Water
Analytical Method:	SW8270	% Solid:	0
Sample Wt/Vol:	990 Units: mL	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOCMS Group1
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
BF140710.D	1	11/27/24 08:40	12/03/24 14:59	PB165296

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
208-96-8	Acenaphthylene	5.10	UQ	1.10	5.10	ug/L
83-32-9	Acenaphthene	5.10	U	0.82	5.10	ug/L
86-73-7	Fluorene	5.10	U	0.97	5.10	ug/L
85-01-8	Phenanthrene	5.10	U	0.90	5.10	ug/L
120-12-7	Anthracene	5.10	U	1.10	5.10	ug/L
206-44-0	Fluoranthene	5.10	U	1.30	5.10	ug/L
129-00-0	Pyrene	5.10	UQ	1.10	5.10	ug/L
56-55-3	Benzo(a)anthracene	5.10	UQ	0.95	5.10	ug/L
218-01-9	Chrysene	5.10	UQ	0.87	5.10	ug/L
205-99-2	Benzo(b)fluoranthene	5.10	U	1.20	5.10	ug/L
207-08-9	Benzo(k)fluoranthene	5.10	UQ	1.20	5.10	ug/L
50-32-8	Benzo(a)pyrene	5.10	U	1.70	5.10	ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	5.10	U	1.00	5.10	ug/L
53-70-3	Dibenzo(a,h)anthracene	5.10	U	1.20	5.10	ug/L
191-24-2	Benzo(g,h,i)perylene	5.10	U	1.20	5.10	ug/L
SURROGATES						
4165-60-0	Nitrobenzene-d5	75.9		49 - 133	76%	SPK: 100
321-60-8	2-Fluorobiphenyl	76.6		52 - 132	77%	SPK: 100
1718-51-0	Terphenyl-d14	80.7		48 - 125	81%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	83400	6.869			
1146-65-2	Naphthalene-d8	299000	8.151			
15067-26-2	Acenaphthene-d10	175000	9.904			
1517-22-2	Phenanthrene-d10	305000	11.398			
1719-03-5	Chrysene-d12	169000	14.051			
1520-96-3	Perylene-d12	158000	15.563			

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

Report of Analysis

Client:	LiRo Engineers, Inc.			Date Collected:	11/26/24
Project:	RFK Bridge			Date Received:	11/27/24
Client Sample ID:	MW-08			SDG No.:	P5021
Lab Sample ID:	P5021-02			Matrix:	Water
Analytical Method:	SW8270			% Solid:	0
Sample Wt/Vol:	990	Units:	mL	Final Vol:	1000 uL
Soil Aliquot Vol:			uL	Test:	SVOCMS Group1
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
BF140710.D	1	11/27/24 08:40	12/03/24 14:59	PB165296

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

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

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	11/26/24
Project:	RFK Bridge	Date Received:	11/27/24
Client Sample ID:	MW-10	SDG No.:	P5021
Lab Sample ID:	P5021-03	Matrix:	Water
Analytical Method:	SW8270	% Solid:	0
Sample Wt/Vol:	980 Units: mL	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOCMS Group1
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
BF140711.D	1	11/27/24 08:40	12/03/24 15:24	PB165296

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
208-96-8	Acenaphthylene	5.10	UQ	1.10	5.10	ug/L
83-32-9	Acenaphthene	5.10	U	0.83	5.10	ug/L
86-73-7	Fluorene	5.10	U	0.98	5.10	ug/L
85-01-8	Phenanthrene	5.10	U	0.91	5.10	ug/L
120-12-7	Anthracene	5.10	U	1.10	5.10	ug/L
206-44-0	Fluoranthene	5.10	U	1.30	5.10	ug/L
129-00-0	Pyrene	5.10	UQ	1.10	5.10	ug/L
56-55-3	Benzo(a)anthracene	5.10	UQ	0.96	5.10	ug/L
218-01-9	Chrysene	5.10	UQ	0.88	5.10	ug/L
205-99-2	Benzo(b)fluoranthene	5.10	U	1.20	5.10	ug/L
207-08-9	Benzo(k)fluoranthene	5.10	UQ	1.20	5.10	ug/L
50-32-8	Benzo(a)pyrene	5.10	U	1.70	5.10	ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	5.10	U	1.00	5.10	ug/L
53-70-3	Dibenzo(a,h)anthracene	5.10	U	1.20	5.10	ug/L
191-24-2	Benzo(g,h,i)perylene	5.10	U	1.20	5.10	ug/L
SURROGATES						
4165-60-0	Nitrobenzene-d5	91.8		49 - 133	92%	SPK: 100
321-60-8	2-Fluorobiphenyl	94.2		52 - 132	94%	SPK: 100
1718-51-0	Terphenyl-d14	93.7		48 - 125	94%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	71000	6.869			
1146-65-2	Naphthalene-d8	270000	8.151			
15067-26-2	Acenaphthene-d10	150000	9.904			
1517-22-2	Phenanthrene-d10	272000	11.398			
1719-03-5	Chrysene-d12	165000	14.051			
1520-96-3	Perylene-d12	152000	15.574			

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

Report of Analysis

Client:	LiRo Engineers, Inc.			Date Collected:	11/26/24
Project:	RFK Bridge			Date Received:	11/27/24
Client Sample ID:	MW-10			SDG No.:	P5021
Lab Sample ID:	P5021-03			Matrix:	Water
Analytical Method:	SW8270			% Solid:	0
Sample Wt/Vol:	980	Units:	mL	Final Vol:	1000 uL
Soil Aliquot Vol:			uL	Test:	SVOCMS Group1
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
BF140711.D	1	11/27/24 08:40	12/03/24 15:24	PB165296

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

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

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	11/26/24
Project:	RFK Bridge	Date Received:	11/27/24
Client Sample ID:	MW-11	SDG No.:	P5021
Lab Sample ID:	P5021-04	Matrix:	Water
Analytical Method:	SW8270	% Solid:	0
Sample Wt/Vol:	990 Units: mL	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOCMS Group1
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
BF140689.D	1	11/27/24 08:40	12/02/24 15:29	PB165296

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
208-96-8	Acenaphthylene	5.10	UQ	1.10	5.10	ug/L
83-32-9	Acenaphthene	5.10	U	0.82	5.10	ug/L
86-73-7	Fluorene	5.10	U	0.97	5.10	ug/L
85-01-8	Phenanthrene	5.10	U	0.90	5.10	ug/L
120-12-7	Anthracene	5.10	U	1.10	5.10	ug/L
206-44-0	Fluoranthene	5.10	U	1.30	5.10	ug/L
129-00-0	Pyrene	5.10	UQ	1.10	5.10	ug/L
56-55-3	Benzo(a)anthracene	5.10	UQ	0.95	5.10	ug/L
218-01-9	Chrysene	5.10	UQ	0.87	5.10	ug/L
205-99-2	Benzo(b)fluoranthene	5.10	U	1.20	5.10	ug/L
207-08-9	Benzo(k)fluoranthene	5.10	UQ	1.20	5.10	ug/L
50-32-8	Benzo(a)pyrene	5.10	U	1.70	5.10	ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	5.10	U	1.00	5.10	ug/L
53-70-3	Dibenzo(a,h)anthracene	5.10	U	1.20	5.10	ug/L
191-24-2	Benzo(g,h,i)perylene	5.10	U	1.20	5.10	ug/L
SURROGATES						
4165-60-0	Nitrobenzene-d5	95.6		49 - 133	96%	SPK: 100
321-60-8	2-Fluorobiphenyl	94.4		52 - 132	94%	SPK: 100
1718-51-0	Terphenyl-d14	91.0		48 - 125	91%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	79000	6.869			
1146-65-2	Naphthalene-d8	302000	8.151			
15067-26-2	Acenaphthene-d10	171000	9.904			
1517-22-2	Phenanthrene-d10	322000	11.398			
1719-03-5	Chrysene-d12	192000	14.051			
1520-96-3	Perylene-d12	157000	15.574			

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

Report of Analysis

Client:	LiRo Engineers, Inc.			Date Collected:	11/26/24
Project:	RFK Bridge			Date Received:	11/27/24
Client Sample ID:	MW-11			SDG No.:	P5021
Lab Sample ID:	P5021-04			Matrix:	Water
Analytical Method:	SW8270			% Solid:	0
Sample Wt/Vol:	990	Units:	mL	Final Vol:	1000 uL
Soil Aliquot Vol:			uL	Test:	SVOCMS Group1
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
BF140689.D	1	11/27/24 08:40	12/02/24 15:29	PB165296

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

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

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	11/26/24
Project:	RFK Bridge	Date Received:	11/27/24
Client Sample ID:	MW-13	SDG No.:	P5021
Lab Sample ID:	P5021-05	Matrix:	Water
Analytical Method:	SW8270	% Solid:	0
Sample Wt/Vol:	990 Units: mL	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOCMS Group1
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
BF140688.D	1	11/27/24 08:40	12/02/24 15:03	PB165296

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
208-96-8	Acenaphthylene	5.10	UQ	1.10	5.10	ug/L
83-32-9	Acenaphthene	5.10	U	0.82	5.10	ug/L
86-73-7	Fluorene	5.10	U	0.97	5.10	ug/L
85-01-8	Phenanthrene	5.10	U	0.90	5.10	ug/L
120-12-7	Anthracene	5.10	U	1.10	5.10	ug/L
206-44-0	Fluoranthene	5.10	U	1.30	5.10	ug/L
129-00-0	Pyrene	5.10	UQ	1.10	5.10	ug/L
56-55-3	Benzo(a)anthracene	5.10	UQ	0.95	5.10	ug/L
218-01-9	Chrysene	5.10	UQ	0.87	5.10	ug/L
205-99-2	Benzo(b)fluoranthene	5.10	U	1.20	5.10	ug/L
207-08-9	Benzo(k)fluoranthene	5.10	UQ	1.20	5.10	ug/L
50-32-8	Benzo(a)pyrene	5.10	U	1.70	5.10	ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	5.10	U	1.00	5.10	ug/L
53-70-3	Dibenzo(a,h)anthracene	5.10	U	1.20	5.10	ug/L
191-24-2	Benzo(g,h,i)perylene	5.10	U	1.20	5.10	ug/L
SURROGATES						
4165-60-0	Nitrobenzene-d5	96.1		49 - 133	96%	SPK: 100
321-60-8	2-Fluorobiphenyl	94.0		52 - 132	94%	SPK: 100
1718-51-0	Terphenyl-d14	90.8		48 - 125	91%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	82100	6.869			
1146-65-2	Naphthalene-d8	307000	8.151			
15067-26-2	Acenaphthene-d10	175000	9.904			
1517-22-2	Phenanthrene-d10	319000	11.398			
1719-03-5	Chrysene-d12	197000	14.051			
1520-96-3	Perylene-d12	158000	15.568			

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

Report of Analysis

Client:	LiRo Engineers, Inc.			Date Collected:	11/26/24
Project:	RFK Bridge			Date Received:	11/27/24
Client Sample ID:	MW-13			SDG No.:	P5021
Lab Sample ID:	P5021-05			Matrix:	Water
Analytical Method:	SW8270			% Solid:	0
Sample Wt/Vol:	990	Units:	mL	Final Vol:	1000 uL
Soil Aliquot Vol:			uL	Test:	SVOCMS Group1
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
BF140688.D	1	11/27/24 08:40	12/02/24 15:03	PB165296

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

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

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	11/26/24
Project:	RFK Bridge	Date Received:	11/27/24
Client Sample ID:	MW-12	SDG No.:	P5021
Lab Sample ID:	P5021-06	Matrix:	Water
Analytical Method:	SW8270	% Solid:	0
Sample Wt/Vol:	980 Units: mL	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOCMS Group1
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
BF140712.D	1	11/27/24 08:40	12/03/24 15:50	PB165296

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
208-96-8	Acenaphthylene	5.10	UQ	1.10	5.10	ug/L
83-32-9	Acenaphthene	5.10	U	0.83	5.10	ug/L
86-73-7	Fluorene	5.10	U	0.98	5.10	ug/L
85-01-8	Phenanthrene	5.10	U	0.91	5.10	ug/L
120-12-7	Anthracene	5.10	U	1.10	5.10	ug/L
206-44-0	Fluoranthene	5.10	U	1.30	5.10	ug/L
129-00-0	Pyrene	5.10	UQ	1.10	5.10	ug/L
56-55-3	Benzo(a)anthracene	5.10	UQ	0.96	5.10	ug/L
218-01-9	Chrysene	5.10	UQ	0.88	5.10	ug/L
205-99-2	Benzo(b)fluoranthene	5.10	U	1.20	5.10	ug/L
207-08-9	Benzo(k)fluoranthene	5.10	UQ	1.20	5.10	ug/L
50-32-8	Benzo(a)pyrene	5.10	U	1.70	5.10	ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	5.10	U	1.00	5.10	ug/L
53-70-3	Dibenzo(a,h)anthracene	5.10	U	1.20	5.10	ug/L
191-24-2	Benzo(g,h,i)perylene	5.10	U	1.20	5.10	ug/L
SURROGATES						
4165-60-0	Nitrobenzene-d5	93.5		49 - 133	93%	SPK: 100
321-60-8	2-Fluorobiphenyl	88.4		52 - 132	88%	SPK: 100
1718-51-0	Terphenyl-d14	97.2		48 - 125	97%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	67800	6.869			
1146-65-2	Naphthalene-d8	251000	8.151			
15067-26-2	Acenaphthene-d10	156000	9.904			
1517-22-2	Phenanthrene-d10	260000	11.398			
1719-03-5	Chrysene-d12	154000	14.051			
1520-96-3	Perylene-d12	131000	15.563			

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

Report of Analysis

Client:	LiRo Engineers, Inc.			Date Collected:	11/26/24
Project:	RFK Bridge			Date Received:	11/27/24
Client Sample ID:	MW-12			SDG No.:	P5021
Lab Sample ID:	P5021-06			Matrix:	Water
Analytical Method:	SW8270			% Solid:	0
Sample Wt/Vol:	980	Units:	mL	Final Vol:	1000 uL
Soil Aliquot Vol:			uL	Test:	SVOCMS Group1
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
BF140712.D	1	11/27/24 08:40	12/03/24 15:50	PB165296

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

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

Surrogate Summary

SW-846

SDG No.: P5021

Client: LiRo Engineers, Inc.

Analytical Method: 8270E

Lab Sample ID	Client ID	Parameter	Spike (PPM)	Result (PPM)	Recovery (%)	Qual	Limits (%) Low	Limits (%) High
P5021-01	MW-06	Nitrobenzene-d5	100	89.8	90		49	133
		2-Fluorobiphenyl	100	83.0	83		52	132
		Terphenyl-d14	100	80.1	80		48	125
P5021-02	MW-08	Nitrobenzene-d5	100	75.9	76		49	133
		2-Fluorobiphenyl	100	76.6	77		52	132
		Terphenyl-d14	100	80.7	81		48	125
P5021-03	MW-10	Nitrobenzene-d5	100	91.8	92		49	133
		2-Fluorobiphenyl	100	94.2	94		52	132
		Terphenyl-d14	100	93.7	94		48	125
P5021-04	MW-11	Nitrobenzene-d5	100	95.6	96		49	133
		2-Fluorobiphenyl	100	94.4	94		52	132
		Terphenyl-d14	100	91.0	91		48	125
P5021-05	MW-13	Nitrobenzene-d5	100	96.1	96		49	133
		2-Fluorobiphenyl	100	94.0	94		52	132
		Terphenyl-d14	100	90.8	91		48	125
P5021-06	MW-12	Nitrobenzene-d5	100	93.5	93		49	133
		2-Fluorobiphenyl	100	88.4	88		52	132
		Terphenyl-d14	100	97.2	97		48	125
PB165296BL	PB165296BL	Nitrobenzene-d5	100	94.5	94		49	133
		2-Fluorobiphenyl	100	96.0	96		52	132
		Terphenyl-d14	100	94.7	95		48	125
PB165296BS	PB165296BS	Nitrobenzene-d5	100	86.7	87		49	133
		2-Fluorobiphenyl	100	87.6	88		52	132
		Terphenyl-d14	100	87.5	87		48	125
PB165296BSD	PB165296BSD	Nitrobenzene-d5	100	96.7	97		49	133
		2-Fluorobiphenyl	100	95.4	95		52	132
		Terphenyl-d14	100	101	101		48	125

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

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary

SW-846

SDG No.: P5021

Client: LiRo Engineers, Inc.

Analytical Method: 8270E **DataFile:** BF140683.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	RPD Qual	Limits Low	Limits High	RPD
PB165296BS	Acenaphthylene	50	49.7	ug/L	99				79	103	
	Acenaphthene	50	47.6	ug/L	95				59	113	
	Fluorene	50	47.3	ug/L	95				64	107	
	Phenanthrene	50	47.6	ug/L	95				62	109	
	Anthracene	50	49.7	ug/L	99				65	110	
	Fluoranthene	50	50.5	ug/L	101				64	110	
	Pyrene	50	46.0	ug/L	92				71	103	
	Benzo(a)anthracene	50	48.2	ug/L	96				62	107	
	Chrysene	50	48.5	ug/L	97				61	108	
	Benzo(b)fluoranthene	50	47.2	ug/L	94				77	113	
	Benzo(k)fluoranthene	50	48.9	ug/L	98				77	105	
	Benzo(a)pyrene	50	52.4	ug/L	105				72	131	
	Indeno(1,2,3-cd)pyrene	50	47.6	ug/L	95				72	105	
	Dibenz(a,h)anthracene	50	47.4	ug/L	95				78	115	
	Benzo(g,h,i)perylene	50	43.9	ug/L	88				75	118	

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

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary

SW-846

SDG No.: P5021

Client: LiRo Engineers, Inc.

Analytical Method: 8270E **DataFile:** BF140684.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	RPD Qual	Limits Low	Limits High	RPD
PB165296BSD	Acenaphthylene	50	54.9	ug/L	110	10	*		79	103	20
	Acenaphthene	50	52.4	ug/L	105	10			59	113	20
	Fluorene	50	52.2	ug/L	104	10			64	107	20
	Phenanthrene	50	53.2	ug/L	106	11			62	109	20
	Anthracene	50	54.6	ug/L	109	9			65	110	20
	Fluoranthene	50	46.8	ug/L	94	8			64	110	20
	Pyrene	50	52.5	ug/L	105	13	*		71	103	20
	Benzo(a)anthracene	50	56.0	ug/L	112	15	*		62	107	20
	Chrysene	50	54.9	ug/L	110	12	*		61	108	20
	Benzo(b)fluoranthene	50	55.5	ug/L	111	16			77	113	20
	Benzo(k)fluoranthene	50	54.0	ug/L	108	10	*		77	105	20
	Benzo(a)pyrene	50	62.5	ug/L	125	18			72	131	20
	Indeno(1,2,3-cd)pyrene	50	49.9	ug/L	100	5			72	105	20
	Dibenz(a,h)anthracene	50	49.7	ug/L	99	5			78	115	20
	Benzo(g,h,i)perylene	50	49.2	ug/L	98	11			75	118	20

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

4B

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

PB165296BL

Lab Name: CHEMTECH Contract: LIRO01

Lab Code: CHEM Case No.: P5021 SAS No.: P5021 SDG NO.: P5021

Lab File ID: BF140682.D Lab Sample ID: PB165296BL

Instrument ID: BNA_F Date Extracted: 11/27/2024

Matrix: (soil/water) Water Date Analyzed: 12/02/2024

Level: (low/med) LOW Time Analyzed: 10:57

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

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
PB165296BS	PB165296BS	BF140683.D	12/02/2024
PB165296BSD	PB165296BSD	BF140684.D	12/02/2024
MW-13	P5021-05	BF140688.D	12/02/2024
MW-08	P5021-02	BF140710.D	12/03/2024
MW-10	P5021-03	BF140711.D	12/03/2024
MW-12	P5021-06	BF140712.D	12/03/2024
MW-06	P5021-01	BF140691.D	12/02/2024
MW-11	P5021-04	BF140689.D	12/02/2024

COMMENTS:

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

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: CHEMTECH Contract: LIRO01

Lab Code: CHEM SAS No.: P5021 SDG NO.: P5021

Lab File ID: BF140526.D DFTPP Injection Date: 11/21/2024

Instrument ID: BNA_F DFTPP Injection Time: 10:17

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	33.3
68	Less than 2.0% of mass 69	0.6 (1.8) 1
69	Mass 69 relative abundance	35.5
70	Less than 2.0% of mass 69	0.3 (0.7) 1
127	10.0 - 80.0% of mass 198	48
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	6.8
275	10.0 - 60.0% of mass 198	29.2
365	Greater than 1% of mass 198	3.8
441	Present, but less than mass 443	15.7
442	Greater than 50% of mass 198	99.8
443	15.0 - 24.0% of mass 442	18.1 (18.1) 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	BF140528.D	11/21/2024	11:13
SSTDICC005	SSTDICC005	BF140529.D	11/21/2024	11:39
SSTDICC010	SSTDICC010	BF140530.D	11/21/2024	12:05
SSTDICC020	SSTDICC020	BF140531.D	11/21/2024	12:32
SSTDICCC040	SSTDICCC040	BF140532.D	11/21/2024	12:58
SSTDICC050	SSTDICC050	BF140533.D	11/21/2024	13:25
SSTDICC060	SSTDICC060	BF140534.D	11/21/2024	13:51
SSTDICC080	SSTDICC080	BF140535.D	11/21/2024	14:18

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

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: CHEMTECH Contract: LIRO01

Lab Code: CHEM SAS No.: P5021 SDG NO.: P5021

Lab File ID: BF140680.D DFTPP Injection Date: 12/02/2024

Instrument ID: BNA_F DFTPP Injection Time: 09:05

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	32.7
68	Less than 2.0% of mass 69	0.7 (1.9) 1
69	Mass 69 relative abundance	35
70	Less than 2.0% of mass 69	0.2 (0.5) 1
127	10.0 - 80.0% of mass 198	45.9
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	6.5
275	10.0 - 60.0% of mass 198	29.2
365	Greater than 1% of mass 198	3.7
441	Present, but less than mass 443	15.4
442	Greater than 50% of mass 198	100
443	15.0 - 24.0% of mass 442	18.4 (18.4) 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	BF140681.D	12/02/2024	10:22
PB165296BL	PB165296BL	BF140682.D	12/02/2024	10:57
PB165296BS	PB165296BS	BF140683.D	12/02/2024	11:23
PB165296BSD	PB165296BSD	BF140684.D	12/02/2024	11:49
MW-13	P5021-05	BF140688.D	12/02/2024	15:03
MW-11	P5021-04	BF140689.D	12/02/2024	15:29
MW-06	P5021-01	BF140691.D	12/02/2024	16:21

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

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: CHEMTECH Contract: LIRO01

Lab Code: CHEM SAS No.: P5021 SDG NO.: P5021

Lab File ID: BF140701.D DFTPP Injection Date: 12/03/2024

Instrument ID: BNA_F DFTPP Injection Time: 10:24

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	32.9
68	Less than 2.0% of mass 69	0.6 (1.8) 1
69	Mass 69 relative abundance	35
70	Less than 2.0% of mass 69	0.2 (0.6) 1
127	10.0 - 80.0% of mass 198	46.7
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	6.6
275	10.0 - 60.0% of mass 198	28.2
365	Greater than 1% of mass 198	3.4
441	Present, but less than mass 443	15.6
442	Greater than 50% of mass 198	100
443	15.0 - 24.0% of mass 442	18.7 (18.7) 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	BF140702.D	12/03/2024	11:24
MW-08	P5021-02	BF140710.D	12/03/2024	14:59
MW-10	P5021-03	BF140711.D	12/03/2024	15:24
MW-12	P5021-06	BF140712.D	12/03/2024	15:50

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

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH

Lab Code: CHEM Case No.: P5021 SAS No.: P5021 SDG NO.: P5021

EPA Sample No.: SSTDCCC040 Date Analyzed: 12/02/2024

Lab File ID: BF140681.D Time Analyzed: 10:22

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	83338	6.869	303615	8.15	170338	9.91
	UPPER LIMIT	166676	7.369	607230	8.651	340676	10.41
	LOWER LIMIT	41669	6.369	151808	7.651	85169	9.41
	EPA SAMPLE NO.						
01	PB165296BL	73230	6.87	279727	8.15	158263	9.90
02	PB165296BS	84060	6.87	323501	8.15	181370	9.91
03	PB165296BSD	80604	6.87	308077	8.15	176945	9.91
04	MW-06	82990	6.87	310195	8.15	187284	9.90
05	MW-11	78955	6.87	302257	8.15	171220	9.90
06	MW-13	82130	6.87	307028	8.15	174760	9.90

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.

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

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH

Lab Code: CHEM Case No.: P5021 SAS No.: P5021 SDG NO.: P5021

EPA Sample No.: SSTDCCC040 Date Analyzed: 12/02/2024

Lab File ID: BF140681.D Time Analyzed: 10:22

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	321182	11.398	183379	14.063	159952	15.58
	UPPER LIMIT	642364	11.898	366758	14.563	319904	16.08
	LOWER LIMIT	160591	10.898	91689.5	13.563	79976	15.08
	EPA SAMPLE NO.						
01	PB165296BL	307927	11.40	198812	14.07	157266	15.60
02	PB165296BS	351850	11.40	225717	14.06	182835	15.58
03	PB165296BSD	364189	11.40	185704	14.06	166131	15.57
04	MW-06	343851	11.40	220062	14.05	186765	15.55
05	MW-11	321567	11.40	192319	14.05	156519	15.57
06	MW-13	319066	11.40	197195	14.05	158239	15.57

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.

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

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH

Lab Code: CHEM Case No.: P5021 SAS No.: P5021 SDG NO.: P5021

EPA Sample No.: SSTDCCC040 Date Analyzed: 12/03/2024

Lab File ID: BF140702.D Time Analyzed: 11:24

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	78577	6.869	287976	8.15	161859	9.91
	UPPER LIMIT	157154	7.369	575952	8.651	323718	10.41
	LOWER LIMIT	39288.5	6.369	143988	7.651	80929.5	9.41
	EPA SAMPLE NO.						
01	MW-08	83408	6.87	298688	8.15	174661	9.90
02	MW-10	70972	6.87	269570	8.15	149746	9.90
03	MW-12	67828	6.87	251382	8.15	155575	9.90

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.

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

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH

Lab Code: CHEM Case No.: P5021 SAS No.: P5021 SDG NO.: P5021

EPA Sample No.: SSTDCCC040 Date Analyzed: 12/03/2024

Lab File ID: BF140702.D Time Analyzed: 11:24

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	309121	11.398	178961	14.057	151018	15.568
	UPPER LIMIT	618242	11.898	357922	14.557	302036	16.068
	LOWER LIMIT	154561	10.898	89480.5	13.557	75509	15.068
	EPA SAMPLE NO.						
01	MW-08	305249	11.40	169161	14.05	157526	15.56
02	MW-10	271510	11.40	165452	14.05	151648	15.57
03	MW-12	260123	11.40	154428	14.05	130761	15.56

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

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

Report of Analysis

Client:	LiRo Engineers, Inc.			Date Collected:	
Project:	RFK Bridge			Date Received:	
Client Sample ID:	PB165296BL			SDG No.:	P5021
Lab Sample ID:	PB165296BL			Matrix:	Water
Analytical Method:	SW8270			% Solid:	0
Sample Wt/Vol:	1000	Units: mL		Final Vol:	1000 uL
Soil Aliquot Vol:		uL		Test:	SVOCMS Group1
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
BF140682.D	1	11/27/24 08:40	12/02/24 10:57	PB165296

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
208-96-8	Acenaphthylene	5.00	U	1.00	5.00	ug/L
83-32-9	Acenaphthene	5.00	U	0.81	5.00	ug/L
86-73-7	Fluorene	5.00	U	0.96	5.00	ug/L
85-01-8	Phenanthrene	5.00	U	0.89	5.00	ug/L
120-12-7	Anthracene	5.00	U	1.10	5.00	ug/L
206-44-0	Fluoranthene	5.00	U	1.30	5.00	ug/L
129-00-0	Pyrene	5.00	U	1.10	5.00	ug/L
56-55-3	Benzo(a)anthracene	5.00	U	0.94	5.00	ug/L
218-01-9	Chrysene	5.00	U	0.86	5.00	ug/L
205-99-2	Benzo(b)fluoranthene	5.00	U	1.10	5.00	ug/L
207-08-9	Benzo(k)fluoranthene	5.00	U	1.20	5.00	ug/L
50-32-8	Benzo(a)pyrene	5.00	U	1.70	5.00	ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	5.00	U	1.00	5.00	ug/L
53-70-3	Dibenzo(a,h)anthracene	5.00	U	1.20	5.00	ug/L
191-24-2	Benzo(g,h,i)perylene	5.00	U	1.20	5.00	ug/L
SURROGATES						
4165-60-0	Nitrobenzene-d5	94.5		49 - 133	94%	SPK: 100
321-60-8	2-Fluorobiphenyl	96.0		52 - 132	96%	SPK: 100
1718-51-0	Terphenyl-d14	94.7		48 - 125	95%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	73200	6.869			
1146-65-2	Naphthalene-d8	280000	8.151			
15067-26-2	Acenaphthene-d10	158000	9.904			
1517-22-2	Phenanthrene-d10	308000	11.398			
1719-03-5	Chrysene-d12	199000	14.068			
1520-96-3	Perylene-d12	157000	15.598			

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

Report of Analysis

Client:	LiRo Engineers, Inc.			Date Collected:	
Project:	RFK Bridge			Date Received:	
Client Sample ID:	PB165296BL			SDG No.:	P5021
Lab Sample ID:	PB165296BL			Matrix:	Water
Analytical Method:	SW8270			% Solid:	0
Sample Wt/Vol:	1000	Units:	mL	Final Vol:	1000 uL
Soil Aliquot Vol:			uL	Test:	SVOCMS Group1
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
BF140682.D	1	11/27/24 08:40	12/02/24 10:57	PB165296

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

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

Report of Analysis

Client:	LiRo Engineers, Inc.			Date Collected:	
Project:	RFK Bridge			Date Received:	
Client Sample ID:	PB165296BS			SDG No.:	P5021
Lab Sample ID:	PB165296BS			Matrix:	Water
Analytical Method:	SW8270			% Solid:	0
Sample Wt/Vol:	1000	Units:	mL	Final Vol:	1000 uL
Soil Aliquot Vol:			uL	Test:	SVOCMS Group1
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
BF140683.D	1	11/27/24 08:40	12/02/24 11:23	PB165296

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
208-96-8	Acenaphthylene	49.7		1.00	5.00	ug/L
83-32-9	Acenaphthene	47.6		0.81	5.00	ug/L
86-73-7	Fluorene	47.3		0.96	5.00	ug/L
85-01-8	Phenanthrene	47.6		0.89	5.00	ug/L
120-12-7	Anthracene	49.7		1.10	5.00	ug/L
206-44-0	Fluoranthene	50.5		1.30	5.00	ug/L
129-00-0	Pyrene	46.0		1.10	5.00	ug/L
56-55-3	Benzo(a)anthracene	48.2		0.94	5.00	ug/L
218-01-9	Chrysene	48.5		0.86	5.00	ug/L
205-99-2	Benzo(b)fluoranthene	47.2		1.10	5.00	ug/L
207-08-9	Benzo(k)fluoranthene	48.9		1.20	5.00	ug/L
50-32-8	Benzo(a)pyrene	52.4		1.70	5.00	ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	47.6		1.00	5.00	ug/L
53-70-3	Dibenzo(a,h)anthracene	47.4		1.20	5.00	ug/L
191-24-2	Benzo(g,h,i)perylene	43.9		1.20	5.00	ug/L
SURROGATES						
4165-60-0	Nitrobenzene-d5	86.7		49 - 133	87%	SPK: 100
321-60-8	2-Fluorobiphenyl	87.6		52 - 132	88%	SPK: 100
1718-51-0	Terphenyl-d14	87.5		48 - 125	87%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	84100	6.869			
1146-65-2	Naphthalene-d8	324000	8.151			
15067-26-2	Acenaphthene-d10	181000	9.91			
1517-22-2	Phenanthrene-d10	352000	11.398			
1719-03-5	Chrysene-d12	226000	14.063			
1520-96-3	Perylene-d12	183000	15.58			

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

Report of Analysis

Client:	LiRo Engineers, Inc.			Date Collected:	
Project:	RFK Bridge			Date Received:	
Client Sample ID:	PB165296BS			SDG No.:	P5021
Lab Sample ID:	PB165296BS			Matrix:	Water
Analytical Method:	SW8270			% Solid:	0
Sample Wt/Vol:	1000	Units:	mL	Final Vol:	1000 uL
Soil Aliquot Vol:			uL	Test:	SVOCMS Group1
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
BF140683.D	1	11/27/24 08:40	12/02/24 11:23	PB165296

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

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

Report of Analysis

Client:	LiRo Engineers, Inc.			Date Collected:	
Project:	RFK Bridge			Date Received:	
Client Sample ID:	PB165296BSD			SDG No.:	P5021
Lab Sample ID:	PB165296BSD			Matrix:	Water
Analytical Method:	SW8270			% Solid:	0
Sample Wt/Vol:	1000	Units: mL		Final Vol:	1000 uL
Soil Aliquot Vol:		uL		Test:	SVOCMS Group1
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
BF140684.D	1	11/27/24 08:40	12/02/24 11:49	PB165296

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
208-96-8	Acenaphthylene	54.9		1.00	5.00	ug/L
83-32-9	Acenaphthene	52.4		0.81	5.00	ug/L
86-73-7	Fluorene	52.2		0.96	5.00	ug/L
85-01-8	Phenanthrene	53.2		0.89	5.00	ug/L
120-12-7	Anthracene	54.6		1.10	5.00	ug/L
206-44-0	Fluoranthene	46.8		1.30	5.00	ug/L
129-00-0	Pyrene	52.5		1.10	5.00	ug/L
56-55-3	Benzo(a)anthracene	56.0		0.94	5.00	ug/L
218-01-9	Chrysene	54.9		0.86	5.00	ug/L
205-99-2	Benzo(b)fluoranthene	55.5		1.10	5.00	ug/L
207-08-9	Benzo(k)fluoranthene	54.0		1.20	5.00	ug/L
50-32-8	Benzo(a)pyrene	62.5		1.70	5.00	ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	49.9		1.00	5.00	ug/L
53-70-3	Dibenzo(a,h)anthracene	49.7		1.20	5.00	ug/L
191-24-2	Benzo(g,h,i)perylene	49.2		1.20	5.00	ug/L
SURROGATES						
4165-60-0	Nitrobenzene-d5	96.7		49 - 133	97%	SPK: 100
321-60-8	2-Fluorobiphenyl	95.4		52 - 132	95%	SPK: 100
1718-51-0	Terphenyl-d14	101		48 - 125	101%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	80600	6.869			
1146-65-2	Naphthalene-d8	308000	8.151			
15067-26-2	Acenaphthene-d10	177000	9.91			
1517-22-2	Phenanthrene-d10	364000	11.398			
1719-03-5	Chrysene-d12	186000	14.057			
1520-96-3	Perylene-d12	166000	15.574			

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

Report of Analysis

Client:	LiRo Engineers, Inc.			Date Collected:	
Project:	RFK Bridge			Date Received:	
Client Sample ID:	PB165296BSD			SDG No.:	P5021
Lab Sample ID:	PB165296BSD			Matrix:	Water
Analytical Method:	SW8270			% Solid:	0
Sample Wt/Vol:	1000	Units:	mL	Final Vol:	1000 uL
Soil Aliquot Vol:			uL	Test:	SVOCMS Group1
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
BF140684.D	1	11/27/24 08:40	12/02/24 11:49	PB165296

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

CALIBRATION SUMMARY

Response Factor Report BNA_F

Method Path : Z:\svoasrv\HPCHEM1\BNA_F\Methods\
Method File : 8270-BF112124.M
Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION
Last Update : Thu Nov 21 15:23:48 2024
Response Via : Initial Calibration

Calibration Files
2.5 =BF140528.D 5 =BF140529.D 10 =BF140530.D 20 =BF140531.D 40 =BF140532.D 50 =BF140533.D 60 =BF140534.D 80 =BF1405
35.D

		Compound	2.5	5	10	20	40	50	60	80	Avg	%RSD
1)	I	1,4-Dichlorobenzen...	----------	ISTD	----------							
2)		1,4-Dioxane		0.501	0.502	0.576	0.489	0.452	0.454	0.477	0.493	8.46
3)		Pyridine		0.981	1.019	1.121	1.192	1.062	1.087	1.128	1.084	6.54
4)		n-Nitrosodimet...		0.616	0.611	0.661	0.648	0.632	0.632	0.660	0.637	3.15
5)	S	2-Fluorophenol		1.261	1.233	1.202	1.174	1.117	1.127	1.091	1.172	5.40
6)		Aniline		1.159	1.195	1.133	1.251	1.042	1.020	0.835	1.091	12.73
7)	S	Phenol-d6		1.729	1.617	1.559	1.602	1.465	1.470	1.407	1.550	7.14
8)		2-Chlorophenol		1.385	1.328	1.278	1.283	1.201	1.208	1.145	1.261	6.51
9)		Benzaldehyde			1.007	0.970	0.738	0.752	0.635		0.820	19.55
10)	C	Phenol		1.723	1.648	1.620	1.667	1.514	1.490	1.417	1.583	6.98
11)		bis(2-Chloroet...		1.292	1.242	1.214	1.246	1.146	1.200	1.138	1.211	4.56
12)		1,3-Dichlorobe...		1.600	1.493	1.433	1.399	1.345	1.361	1.288	1.417	7.31
13)	C	1,4-Dichlorobe...		1.613	1.501	1.456	1.428	1.358	1.372	1.314	1.435	7.04
14)		1,2-Dichlorobe...		1.503	1.434	1.375	1.355	1.268	1.266	1.210	1.344	7.71
15)		Benzyl Alcohol		1.234	1.174	1.161	1.224	1.113	1.090	1.048	1.149	5.98
16)		2,2'-oxybis(1-...		1.650	1.480	1.434	1.463	1.335	1.377	1.276	1.431	8.43
17)		2-Methylphenol		1.121	1.034	1.033	1.042	0.956	0.959	0.922	1.009	6.74
18)		Hexachloroethane		0.598	0.545	0.549	0.537	0.514	0.510	0.499	0.536	6.17
19)	P	n-Nitroso-di-n...	0.972	1.002	0.949	0.916	0.946	0.856	0.857	0.829	0.916	6.82
20)		3+4-Methylphenols		1.495	1.362	1.305	1.347	1.211	1.209	1.154	1.298	8.98
21)	I	Naphthalene-d8	----------	ISTD	----------							
22)		Acetophenone		0.536	0.511	0.494	0.481	0.463	0.460	0.468	0.488	5.75
23)	S	Nitrobenzene-d5		0.409	0.403	0.395	0.392	0.377	0.377	0.383	0.391	3.21
24)		Nitrobenzene		0.439	0.409	0.409	0.401	0.388	0.391	0.392	0.404	4.35
25)		Isophorone		0.694	0.654	0.657	0.662	0.629	0.634	0.635	0.652	3.44
26)	C	2-Nitrophenol		0.178	0.172	0.185	0.180	0.178	0.180	0.180	0.179	2.17
27)		2,4-Dimethylph...		0.221	0.214	0.213	0.224	0.204	0.207	0.218	0.214	3.40
28)		bis(2-Chloroet...		0.428	0.408	0.403	0.397	0.378	0.384	0.383	0.397	4.37
29)	C	2,4-Dichloroph...		0.301	0.291	0.290	0.282	0.277	0.274	0.271	0.284	3.82
30)		1,2,4-Trichlor...		0.342	0.338	0.332	0.317	0.317	0.312	0.312	0.324	3.91
31)		Naphthalene		1.116	1.075	1.062	1.013	0.993	0.983	0.970	1.030	5.32
32)		Benzoic acid			0.101	0.126	0.177	0.185	0.192	0.202	0.164	24.72
33)		4-Chloroaniline		0.308	0.318	0.309	0.325	0.303	0.308	0.289	0.308	3.71
34)	C	Hexachlorobuta...		0.227	0.225	0.219	0.212	0.209	0.207	0.204	0.215	4.15
35)		Caprolactam		0.091	0.091	0.091	0.090	0.085	0.085	0.083	0.088	3.99
36)	C	4-Chloro-3-met...		0.348	0.318	0.317	0.327	0.307	0.307	0.301	0.318	4.95
37)		2-Methylnaphth...		0.724	0.680	0.669	0.650	0.623	0.620	0.615	0.654	6.09
38)		1-Methylnaphth...		0.707	0.665	0.659	0.638	0.611	0.608	0.601	0.641	5.98

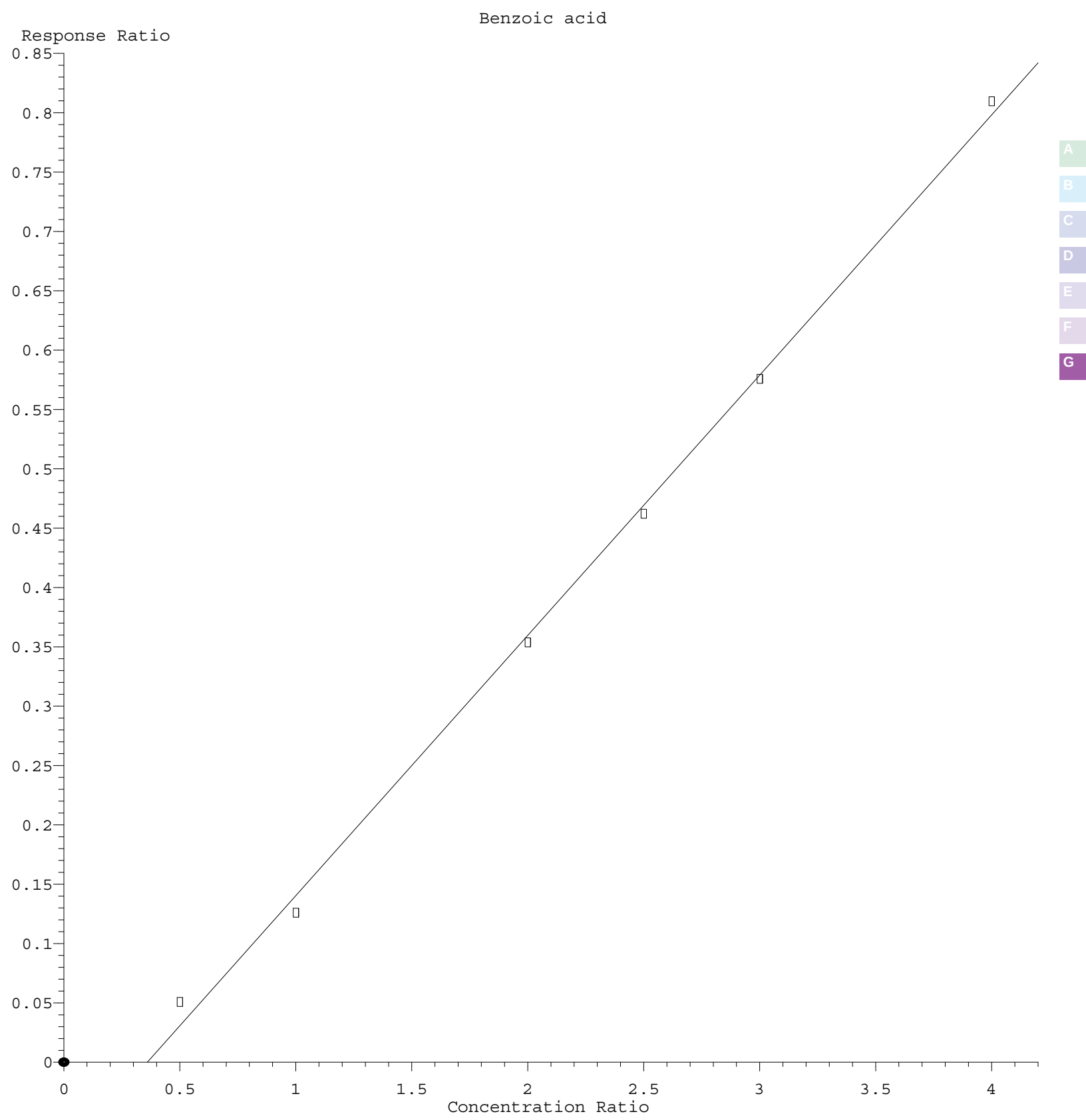
Method Path : Z:\svoasrv\HPCHEM1\BNA_F\Methods\
Method File : 8270-BF112124.M

39)	I	Acenaphthene-d10	----------ISTD----------								
40)		1,2,4,5-Tetrac...	0.635	0.604	0.606	0.563	0.561	0.565	0.565	0.586	5.02
41)	P	Hexachlorocycl...		0.055	0.090	0.114	0.121	0.129	0.133	0.107	27.80
42)	S	2,4,6-Tribromo...	0.222	0.209	0.220	0.216	0.210	0.210	0.211	0.214	2.52
43)	C	2,4,6-Trichlor...	0.384	0.358	0.375	0.366	0.364	0.360	0.365	0.367	2.45
44)		2,4,5-Trichlor...	0.402	0.396	0.410	0.404	0.390	0.397	0.392	0.399	1.80
45)	S	2-Fluorobiphenyl	1.550	1.402	1.423	1.291	1.255	1.240	1.235	1.342	8.90
46)		1,1'-Biphenyl	1.666	1.530	1.563	1.447	1.427	1.418	1.403	1.493	6.50
47)		2-Chloronaphth...	1.251	1.145	1.162	1.106	1.082	1.084	1.091	1.131	5.39
48)		2-Nitroaniline	0.367	0.351	0.379	0.367	0.363	0.357	0.359	0.363	2.50
49)		Acenaphthylene	1.890	1.765	1.808	1.662	1.628	1.623	1.590	1.710	6.58
50)		Dimethylphthalate	1.455	1.329	1.346	1.299	1.267	1.270	1.254	1.317	5.28
51)		2,6-Dinitrotol...	0.314	0.299	0.307	0.301	0.291	0.293	0.286	0.299	3.24
52)	C	Acenaphthene	1.182	1.110	1.134	1.063	1.052	1.037	1.026	1.086	5.29
53)		3-Nitroaniline	0.307	0.297	0.309	0.300	0.289	0.281	0.262	0.292	5.71
54)	P	2,4-Dinitrophenol		0.057	0.089	0.140	0.145	0.150	0.154	0.122	32.70
55)		Dibenzofuran	1.898	1.739	1.739	1.622	1.559	1.531	1.509	1.657	8.53
56)	P	4-Nitrophenol		0.160	0.195	0.207	0.212	0.214	0.208	0.199	10.31
57)		2,4-Dinitrotol...	0.403	0.403	0.416	0.404	0.386	0.389	0.379	0.397	3.24
58)		Fluorene	1.509	1.409	1.399	1.295	1.263	1.224	1.210	1.330	8.37
59)		2,3,4,6-Tetrac...	0.307	0.296	0.308	0.312	0.305	0.305	0.312	0.306	1.72
60)		Diethylphthalate	1.495	1.375	1.393	1.311	1.292	1.268	1.234	1.338	6.66
61)		4-Chlorophenyl...	0.739	0.682	0.685	0.639	0.619	0.605	0.599	0.653	7.90
62)		4-Nitroaniline	0.307	0.301	0.315	0.312	0.310	0.309	0.291	0.306	2.67
63)		Azobenzene	1.406	1.320	1.320	1.235	1.205	1.206	1.179	1.267	6.55
64)	I	Phenanthrene-d10	----------ISTD----------								
65)		4,6-Dinitro-2-...		0.073	0.090	0.110	0.110	0.117	0.113	0.102	16.74
66)	c	n-Nitrosodiphe...	0.632	0.618	0.597	0.578	0.577	0.580	0.558	0.591	4.39
67)		4-Bromophenyl-...	0.218	0.215	0.206	0.200	0.200	0.205	0.198	0.206	3.79
68)		Hexachlorobenzene	0.257	0.240	0.239	0.233	0.232	0.236	0.232	0.238	3.65
69)		Atrazine	0.181	0.171	0.131	0.140	0.147	0.196	0.198	0.166	16.37
70)	C	Pentachlorophenol		0.071	0.090	0.116	0.115	0.121	0.118	0.105	19.24
71)		Phenanthrene	1.074	1.020	0.970	0.944	0.925	0.916	0.881	0.961	6.87
72)		Anthracene	1.038	0.994	0.958	0.925	0.905	0.904	0.859	0.940	6.47
73)		Carbazole	1.004	0.949	0.930	0.889	0.876	0.862	0.821	0.905	6.75
74)		Di-n-butylphth...	1.144	1.075	1.074	1.023	1.021	1.007	0.967	1.044	5.56
75)	C	Fluoranthene	1.186	1.111	1.114	1.014	0.999	0.962	0.921	1.044	9.11
76)	I	Chrysene-d12	----------ISTD----------								
77)		Benzidine	0.268	0.422	0.296	0.575	0.734	1.025	0.751	0.581	47.31
78)		Pyrene	1.905	1.801	1.897	1.853	1.791	1.898	1.799	1.849	2.79
79)	S	Terphenyl-d14	1.351	1.254	1.308	1.283	1.228	1.313	1.254	1.284	3.31
80)		Butylbenzylpht...	0.676	0.644	0.694	0.679	0.655	0.674	0.641	0.666	2.96
81)		Benzo(a)anthra...	1.409	1.319	1.379	1.286	1.295	1.338	1.242	1.324	4.30
82)		3,3'-Dichlorob...	0.375	0.383	0.393	0.413	0.406	0.419	0.394	0.397	4.03
83)		Chrysene	1.354	1.263	1.218	1.201	1.137	1.173	1.128	1.211	6.50
84)		Bis(2-ethylhex...	0.904	0.828	0.862	0.833	0.824	0.841	0.797	0.841	4.00
85)	c	Di-n-octyl pht...	1.198	1.133	1.147	1.132	1.147	1.169	1.121	1.150	2.29

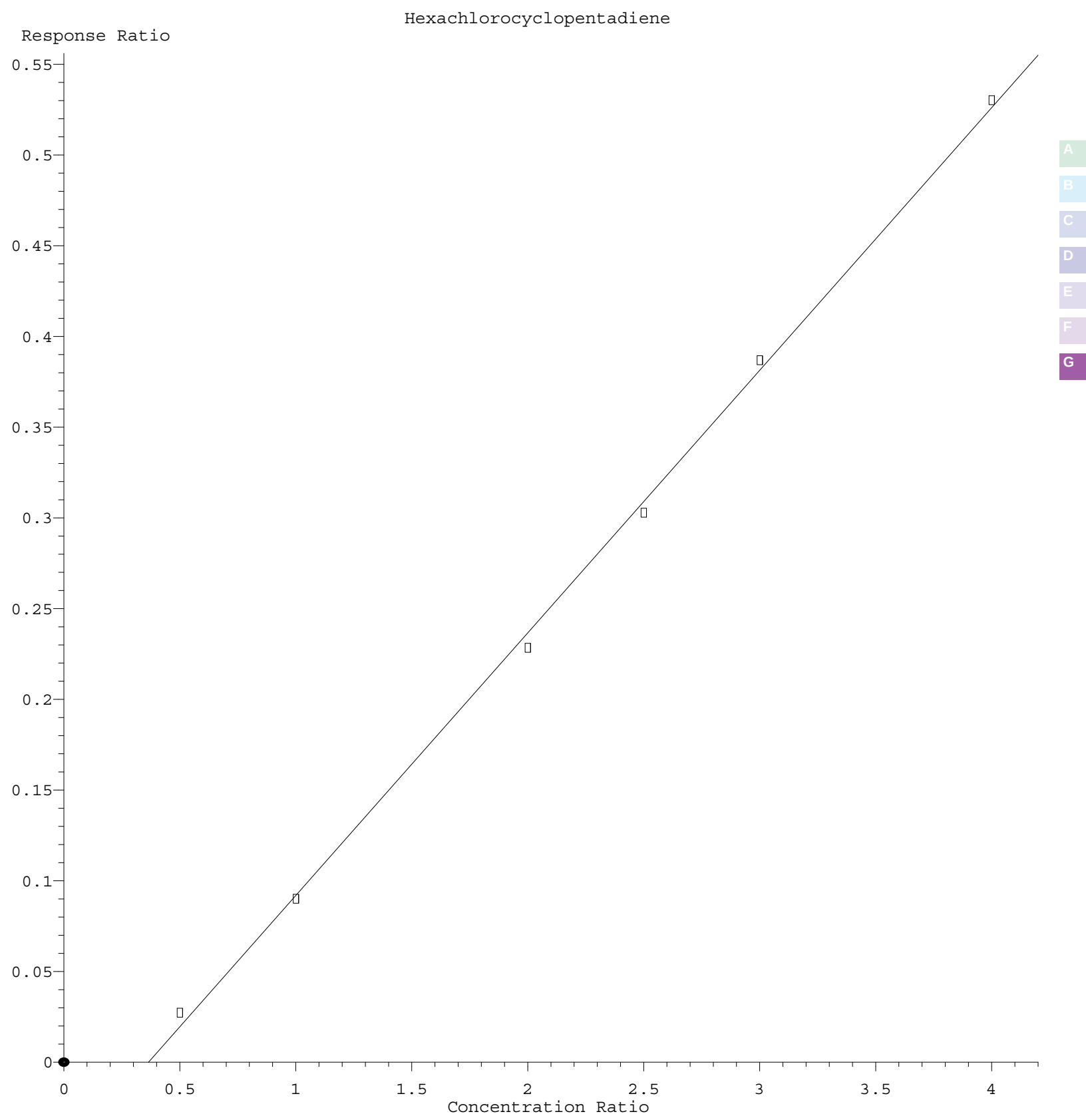
Method Path : Z:\svoasrv\HPCHEM1\BNA_F\Methods\
Method File : 8270-BF112124.M

86)	I	Perylene-d12	----------ISTD----------							
87)		Indeno(1,2,3-c...	1.209	1.283	1.299	1.304	1.306	1.409	1.313	1.303	4.51
88)		Benzo(b)fluora...	1.347	1.256	1.380	1.186	1.248	1.207	1.168	1.256	6.41
89)		Benzo(k)fluora...	1.243	1.236	1.059	1.101	1.022	1.055	0.980	1.099	9.34
90)	C	Benzo(a)pyrene	1.062	1.050	1.063	1.007	0.998	1.014	0.957	1.021	3.81
91)		Dibenzo(a,h)an...	1.015	1.038	1.063	1.068	1.075	1.149	1.064	1.067	3.90
92)		Benzo(g,h,i)pe...	1.033	1.090	1.078	1.085	1.094	1.161	1.083	1.089	3.48

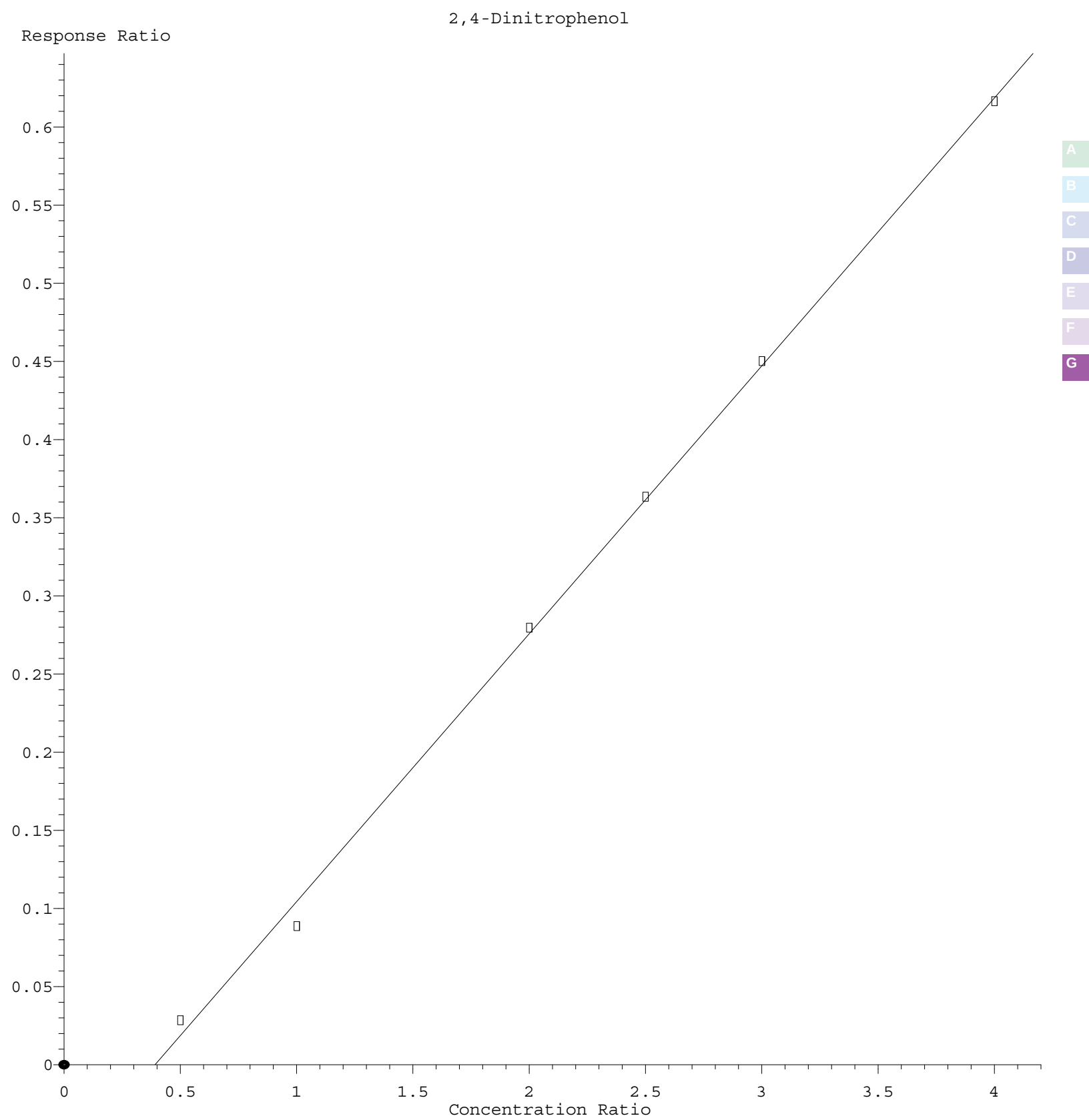
(#) = Out of Range



Response = 2.193e-001 * Amt - 7.887e-002
Coef of Det (r^2) = 0.997922 Curve Fit: Linear
Method Name: Z:\svoasrv\HPCHEM1\BNA F\Methods\8270-BF112124.M
Calibration Table Last Updated: Thu Nov 21 15:23:48 2024



Response = 1.448e-001 * Amt - 5.280e-002
Coef of Det (r^2) = 0.998763 Curve Fit: Linear
Method Name: Z:\svoasrv\HPCHEM1\BNA F\Methods\8270-BF112124.M
Calibration Table Last Updated: Thu Nov 21 15:23:48 2024



Response = 1.715e-001 * Amt - 6.708e-002
Coef of Det (r^2) = 0.998475 Curve Fit: Linear
Method Name: Z:\svoasrv\HPCHEM1\BNA F\Methods\8270-BF112124.M
Calibration Table Last Updated: Thu Nov 21 15:23:48 2024

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

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: LIRO01

Lab Code: CHEM Case No.: P5021 SAS No.: P5021 SDG No.: P5021

Instrument ID: BNA_F Calibration Date/Time: 12/02/2024 10:22

Lab File ID: BF140681.D Init. Calib. Date(s): 11/21/2024 11/21/2024

EPA Sample No.: SSTDCCC040 Init. Calib. Time(s): 11:13 14:18

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

COMPOUND	RRF	RRF040	MIN RRF	%D	MAX%D
2-Fluorophenol	1.172	1.148		-2.0	
Phenol-d6	1.550	1.511		-2.5	
Nitrobenzene-d5	0.391	0.381		-2.6	
2-Fluorobiphenyl	1.342	1.303		-2.9	
Acenaphthylene	1.710	1.674		-2.1	
Acenaphthene	1.086	1.073		-1.2	20.0
Fluorene	1.330	1.312		-1.4	
2,4,6-Tribromophenol	0.214	0.211		-1.4	
Phenanthrene	0.961	0.947		-1.5	
Anthracene	0.940	0.935		-0.5	
Fluoranthene	1.044	1.053		0.9	20.0
Pyrene	1.849	1.875		1.4	
Terphenyl-d14	1.284	1.262		-1.7	
Benzo(a)anthracene	1.324	1.320		-0.3	
Chrysene	1.211	1.200		-0.9	
Benzo(b)fluoranthene	1.256	1.244		-1.0	
Benzo(k)fluoranthene	1.099	1.048		-4.6	
Benzo(a)pyrene	1.021	1.000		-2.1	20.0
Indeno(1,2,3-cd)pyrene	1.303	1.265		-2.9	
Dibenzo(a,h)anthracene	1.067	1.025		-3.9	
Benzo(g,h,i)perylene	1.089	1.064		-2.3	

All other compounds must meet a minimum RRF of 0.010.

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

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: LIRO01

Lab Code: CHEM Case No.: P5021 SAS No.: P5021 SDG No.: P5021

Instrument ID: BNA_F Calibration Date/Time: 12/03/2024 11:24

Lab File ID: BF140702.D Init. Calib. Date(s): 11/21/2024 11/21/2024

EPA Sample No.: SSTDCCC040 Init. Calib. Time(s): 11:13 14:18

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

COMPOUND	RRF	RRF040	MIN RRF	%D	MAX%D
2-Fluorophenol	1.172	1.135		-3.2	
Phenol-d6	1.550	1.481		-4.5	
Nitrobenzene-d5	0.391	0.372		-4.9	
2-Fluorobiphenyl	1.342	1.315		-2.0	
Acenaphthylene	1.710	1.655		-3.2	
Acenaphthene	1.086	1.031		-5.1	20.0
Fluorene	1.330	1.306		-1.8	
2,4,6-Tribromophenol	0.214	0.209		-2.3	
Phenanthrene	0.961	0.921		-4.2	
Anthracene	0.940	0.906		-3.6	
Fluoranthene	1.044	1.025		-1.8	20.0
Pyrene	1.849	1.786		-3.4	
Terphenyl-d14	1.284	1.295		0.9	
Benzo(a)anthracene	1.324	1.330		0.5	
Chrysene	1.211	1.133		-6.4	
Benzo(b)fluoranthene	1.256	1.178		-6.2	
Benzo(k)fluoranthene	1.099	1.085		-1.3	
Benzo(a)pyrene	1.021	0.989		-3.1	20.0
Indeno(1,2,3-cd)pyrene	1.303	1.389		6.6	
Dibenzo(a,h)anthracene	1.067	1.149		7.7	
Benzo(g,h,i)perylene	1.089	1.195		9.7	

All other compounds must meet a minimum RRF of 0.010.