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	

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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

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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	EQ	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

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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

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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			

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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

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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			

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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

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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			

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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

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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			

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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

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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			

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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

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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	EQ	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			

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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
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J = Estimated Value
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N = Presumptive Evidence of a Compound
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A = Aldol-Condensation Reaction Products

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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			

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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

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() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

QC SUMMARY

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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
VX1127WBSD0	VX1127WBSD01	1,2-Dichloroethane-d4	50	51.5	103	74	125
		Dibromofluoromethane	50	46.2	92	75	124
		Toluene-d8	50	47.1	94	86	113
		4-Bromofluorobenzene	50	48.5	97	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

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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	

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Laboratory Control Sample/Laboratory Control Sample Duplicate Summary

SW-846

SDG No.: P5021

Client: LiRo Engineers, Inc.

Analytical Method: SW8260-Low **Datafile :** VX044041.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual		Limits Low	Limits High	Limits RPD
VX1127WBSD01	Methyl tert-butyl Ether	20	19.8	ug/L	99	9			78	114	20
	Benzene	20	17.4	ug/L	87	18			82	109	20
	Toluene	20	18.4	ug/L	92	14			82	110	20
	Ethyl Benzene	20	18.5	ug/L	93	13			83	109	20
	m/p-Xylenes	40	36.1	ug/L	90	16			82	110	20
	o-Xylene	20	18.8	ug/L	94	11			83	109	20
	Isopropylbenzene	20	18.8	ug/L	94	14			83	112	20
	N-propylbenzene	20	18.9	ug/L	95	13			83	112	20
	1,3,5-Trimethylbenzene	20	19.1	ug/L	96	14			85	112	20
	tert-Butylbenzene	20	18.5	ug/L	93	15			83	112	20
	1,2,4-Trimethylbenzene	20	19.3	ug/L	97	13			85	111	20
	Sec-butylbenzene	20	18.5	ug/L	93	15			81	114	20
	p-Isopropyltoluene	20	19.0	ug/L	95	16			78	116	20
	n-Butylbenzene	20	18.5	ug/L	93	15			75	115	20
	Naphthalene	20	32.1	ug/L	160	42	*	*	78	119	20

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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	

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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
VX1127WBSD01	VX1127WBSD01	VX044041.D	11/27/2024
MW-12	P5021-06	VX044049.D	11/27/2024

COMMENTS:

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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
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:

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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

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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
VX1127WBSD01	VX1127WBSD01	VX044041.D	11/27/2024	15:25
MW-12	P5021-06	VX044049.D	11/27/2024	18:29

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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
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

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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
VX1127WBSD01	127369	5.54	240268	6.76	205658	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.

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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				
VX1127WBSD01	92085	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.

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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

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.

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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				

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

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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			

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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

Alliance TECHNICAL GROUP
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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			

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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

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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			

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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

Alliance TECHNICAL GROUP
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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			

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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
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A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	
Project:	RFK Bridge	Date Received:	
Client Sample ID:	VX1127WBSD01	SDG No.:	P5021
Lab Sample ID:	VX1127WBSD01	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
VX044041.D	1		11/27/24 15:25	VX112724

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
1634-04-4	Methyl tert-butyl Ether	19.8		0.16	1.00	ug/L
71-43-2	Benzene	17.4		0.16	1.00	ug/L
108-88-3	Toluene	18.4		0.18	1.00	ug/L
100-41-4	Ethyl Benzene	18.5		0.16	1.00	ug/L
179601-23-1	m/p-Xylenes	36.1		0.31	2.00	ug/L
95-47-6	o-Xylene	18.8		0.14	1.00	ug/L
98-82-8	Isopropylbenzene	18.8		0.13	1.00	ug/L
103-65-1	n-propylbenzene	18.9		0.14	1.00	ug/L
108-67-8	1,3,5-Trimethylbenzene	19.1		0.18	1.00	ug/L
98-06-6	tert-Butylbenzene	18.5		0.17	1.00	ug/L
95-63-6	1,2,4-Trimethylbenzene	19.3		0.18	1.00	ug/L
135-98-8	sec-Butylbenzene	18.5		0.17	1.00	ug/L
99-87-6	p-Isopropyltoluene	19.0		0.15	1.00	ug/L
104-51-8	n-Butylbenzene	18.5		0.22	1.00	ug/L
91-20-3	Naphthalene	32.1		0.59	1.00	ug/L
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	51.5		74 - 125	103%	SPK: 50
1868-53-7	Dibromofluoromethane	46.2		75 - 124	92%	SPK: 50
2037-26-5	Toluene-d8	47.1		86 - 113	94%	SPK: 50
460-00-4	4-Bromofluorobenzene	48.5		77 - 121	97%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	127000	5.544			
540-36-3	1,4-Difluorobenzene	240000	6.757			
3114-55-4	Chlorobenzene-d5	206000	10.049			
3855-82-1	1,4-Dichlorobenzene-d4	92100	12.018			

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Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	
Project:	RFK Bridge	Date Received:	
Client Sample ID:	VX1127WBSD01	SDG No.:	P5021
Lab Sample ID:	VX1127WBSD01	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
VX044041.D	1		11/27/24 15:25	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
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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

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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.

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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.

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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.