



284 Sheffield Street, Mountainside, New Jersey - 07092

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

LAB CHRONICLE

OrderID:	P1747	OrderDate:	3/13/2024 12:28:00 PM
Client:	LiRo Engineers, Inc.	Project:	Walter Gladwin Recreation Center, Bronx, NY
Contact:	Steve Frank	Location:	I21,I31,VOA Ref. #3 Water

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
P1747-03	MW-01	WATER			03/13/24 10:00			03/13/24
			CBOD5	SM5210 B			03/14/24 10:30	
			Chloride	SM4500-CL C			03/14/24 15:22	
			Flash Point	1010B			03/14/24 13:15	
			Hexavalent Chromium	SM3500-Cr B			03/14/24 11:14	
			Non-Polar Material	1664A			03/15/24 15:00	
			Phenolics	420.1		03/15/24	03/15/24 14:29	
			TKN	SM4500-N Org C-11 plus NH3 B plus G-11		03/18/24	03/19/24 11:26	
			Total Nitrogen	Cal			03/18/24 00:00	
			TS	SM2540 B			03/14/24 11:00	
			TSS	SM2540 D			03/18/24 09:30	

SAMPLE DATA

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	03/13/24 10:00
Project:	Walter Gladwin Recreation Center, Bronx, NY	Date Received:	03/13/24
Client Sample ID:	MW-01	SDG No.:	P1747
Lab Sample ID:	P1747-03	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
CBOD5	19.0		1	0.17	2.00	mg/L		03/14/24 10:30	SM 5210 B-16
Chloride	61.2		1	0.54	5.00	mg/L		03/14/24 15:22	SM 4500-Cl C-11
Flash Point	>212		1	0	0	o F		03/14/24 13:15	1010B
Dissolved Hexavalent Chromium	0.010	U	1	0.0020	0.010	mg/L		03/14/24 11:14	SM 3500-Cr B-11
Non-Polar Material	5.00	U	1	0.53	5.00	mg/L		03/15/24 15:00	1664A
Phenolics	0.050	U	1	0.012	0.050	mg/L	03/15/24 11:30	03/15/24 14:29	420.1
TKN	1.00		1	0.13	0.50	mg/L	03/18/24 12:40	03/19/24 11:26	SM4500-N Org C-11 plus NH3 B plus G-11
Nitrogen	1.04		1	0.15	0.60	mg/L		03/18/24 00:00	SM 4500-N Org C-11 plus NH3 B plus G-11
TS	576		1	1.00	5.00	mg/L		03/14/24 11:00	SM 2540 B-15
TSS	57.2		1	1.00	4.00	mg/L		03/18/24 09:30	SM 2540 D-15

Comments: Other method reference for flash point : Pensky-Martens Closed Cup Flash Point ASTM D 93 - IP 34

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

D = Dilution

Q = indicates LCS control criteria did not meet requirements

H = Sample Analysis Out Of Hold Time

J = Estimated Value

B = Analyte Found in Associated Method Blank

* = indicates the duplicate analysis is not within control limits.

E = Indicates the reported value is estimated because of the presence of interference.

OR = Over Range

N =Spiked sample recovery not within control limits

QC RESULT SUMMARY



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Initial and Continuing Calibration Verification

Client: LiRo Engineers, Inc.

SDG No.: P1747

Project: Walter Gladwin Recreation Center, Bronx, NY

RunNo.: LB129879

Analyte	Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID: ICV						
Flash Point	o F	81.7	81	101	78-84	03/14/2024

Initial and Continuing Calibration Verification

Client:	LiRo Engineers, Inc.	SDG No.:	P1747
Project:	Walter Gladwin Recreation Center, Bronx, NY	RunNo.:	LB129881

Analyte	Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID: ICV Hexavalent Chromium	mg/L	0.502	0.5	100	95-105	03/14/2024
Sample ID: CCV1 Hexavalent Chromium	mg/L	0.500	0.5	100	90-110	03/14/2024
Sample ID: CCV2 Hexavalent Chromium	mg/L	0.502	0.5	100	90-110	03/14/2024

Initial and Continuing Calibration Verification

Client:	LiRo Engineers, Inc.	SDG No.:	P1747
Project:	Walter Gladwin Recreation Center, Bronx, NY	RunNo.:	LB129910

Analyte		Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID:	ICV1						
Phenolics		mg/L	0.97	1	97	90-110	03/15/2024
Sample ID:	CCV1						
Phenolics		mg/L	0.98	1	98	90-110	03/15/2024
Sample ID:	CCV2						
Phenolics		mg/L	1	1	100	90-110	03/15/2024

Initial and Continuing Calibration Verification

Client: LiRo Engineers, Inc.

SDG No.: P1747

Project: Walter Gladwin Recreation Center, Bronx, NY

RunNo.: LB129942

Analyte		Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID:	ICV1						
TKN		mg/L	4.8	5	96	90-110	03/19/2024
Sample ID:	CCV1						
TKN		mg/L	4.8	5	96	90-110	03/19/2024
Sample ID:	CCV2						
TKN		mg/L	4.9	5	98	90-110	03/19/2024
Sample ID:	CCV3						
TKN		mg/L	5	5	100	90-110	03/19/2024



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Initial and Continuing Calibration Blank Summary

Client: LiRo Engineers, Inc.

SDG No.: P1747

Project: Walter Gladwin Recreation Center, Bronx, NY

RunNo.: LB129881

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: ICB Hexavalent Chromium	mg/L	< 0.0050	0.0050	U	0.0021	0.01	03/14/2024
Sample ID: CCB1 Hexavalent Chromium	mg/L	< 0.0050	0.0050	U	0.0021	0.01	03/14/2024
Sample ID: CCB2 Hexavalent Chromium	mg/L	< 0.0050	0.0050	U	0.0021	0.01	03/14/2024

Initial and Continuing Calibration Blank Summary

Client:	LiRo Engineers, Inc.	SDG No.:	P1747
Project:	Walter Gladwin Recreation Center, Bronx, NY	RunNo.:	LB129910

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: ICB1 Phenolics	mg/L	< 0.0250	0.0250	U	0.012	0.05	03/15/2024
Sample ID: CCB1 Phenolics	mg/L	< 0.0250	0.0250	U	0.012	0.05	03/15/2024
Sample ID: CCB2 Phenolics	mg/L	< 0.0250	0.0250	U	0.012	0.05	03/15/2024

Initial and Continuing Calibration Blank Summary

Client:	LiRo Engineers, Inc.	SDG No.:	P1747
Project:	Walter Gladwin Recreation Center, Bronx, NY	RunNo.:	LB129942

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: ICB1 TKN	mg/L	< 0.2500	0.2500	U	0.13	0.5	03/19/2024
Sample ID: CCB1 TKN	mg/L	< 0.2500	0.2500	U	0.13	0.5	03/19/2024
Sample ID: CCB2 TKN	mg/L	< 0.2500	0.2500	U	0.13	0.5	03/19/2024
Sample ID: CCB3 TKN	mg/L	< 0.2500	0.2500	U	0.13	0.5	03/19/2024

Preparation Blank Summary

Client: LiRo Engineers, Inc.

SDG No.: P1747

Project: Walter Gladwin Recreation Center, Bronx, NY

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: LB129875BL CBOD5	mg/L	< 0.2000	0.2000	U	0.17	2.0	03/14/2024
Sample ID: LB129881BL Hexavalent Chromium	mg/L	< 0.0050	0.0050	U	0.002	0.01	03/14/2024
Sample ID: LB129888BL TS	mg/L	1	2.5000	J	1	5	03/14/2024
Sample ID: LB129890BL Chloride	mg/L	< 2.5000	2.5000	U	0.54	5.0	03/14/2024
Sample ID: LB129904BL Non-Polar Material	mg/L	< 2.5000	2.5000	U	0.53	5.0	03/15/2024
Sample ID: LB129917BL TSS	mg/L	1	2.0000	J	1	4	03/18/2024
Sample ID: PB159614BL TKN	mg/L	< 0.2500	0.2500	U	0.13	0.5	03/19/2024
Sample ID: PB159616BL Phenolics	mg/L	< 0.0250	0.0250	U	0.012	0.05	03/15/2024



Matrix Spike Summary

Client:

LiRo Engineers, Inc.

SDG No.:

P1747

Project:

Walter Gladwin Recreation Center, Bronx, NY

Sample ID:

P1747-03

Client ID:

MW-01MS

Percent Solids for Spike Sample:

0

Analyte	Units	Acceptance Limit %R	Spiked Result	Conc. Qualifier	Sample Result	Conc. Qualifier	Spike Added	Dilution Factor	% Rec	Qual	Analysis Date
Chloride	mg/L	90-110	108		61.2		50.0	1	94		03/14/2024
Hexavalent Chromium	mg/L	90-111	0.95		0.0020	U	1.0	2	95		03/14/2024
TKN	mg/L	75-125	5.90		1.00		5	1	98		03/19/2024
Phenolics	mg/L	75-125	0.99		0.012	U	1	1	99		03/15/2024



Matrix Spike Summary

Client:

LiRo Engineers, Inc.

SDG No.:

P1747

Project:

Walter Gladwin Recreation Center, Bronx, NY

Sample ID:

P1747-03

Client ID:

MW-01MSD

Percent Solids for Spike Sample:

0

Analyte	Units	Acceptance Limit %R	Spiked Result	Conc. Qualifier	Sample Result	Conc. Qualifier	Spike Added	Dilution Factor	% Rec	Qual	Analysis Date
Chloride	mg/L	90-110	108		61.2		50.0	1	94		03/14/2024
Hexavalent Chromium	mg/L	90-111	0.97		0.0020	U	1.0	2	97		03/14/2024
TKN	mg/L	75-125	5.90		1.00		5	1	98		03/19/2024
Phenolics	mg/L	75-125	0.98		0.012	U	1	1	98		03/15/2024



Duplicate Sample Summary

Client:

LiRo Engineers, Inc.

SDG No.:

P1747

Project:

Walter Gladwin Recreation Center, Bronx, NY

Sample ID:

LB129904BS

Client ID:

LB129904BSD

Percent Solids for Spike Sample:

0

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/AD	Qual	Analysis Date
Non-Polar Material	mg/L	+/-18	16.7		17.0		1	1.78		03/15/2024



Duplicate Sample Summary

Client:

LiRo Engineers, Inc.

SDG No.:

P1747

Project:

Walter Gladwin Recreation Center, Bronx, NY

Sample ID:

P1747-03

Client ID:

MW-01DUP

Percent Solids for Spike Sample:

0

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/AD	Qual	Analysis Date
CBOD5	mg/L	+/-20	19.0		18.8		1	0.85		03/14/2024
Flash Point	o F	+/-2	>212.0		>212.0		1	0		03/14/2024
Hexavalent Chromium	mg/L	+/-20	0.0020	U	0.0020	U	1	0		03/14/2024
TS	mg/L	+/-5	576		551		1	4.44		03/14/2024
Chloride	mg/L	+/-20	61.2		61.0		1	0.33		03/14/2024
Phenolics	mg/L	+/-20	0.012	U	0.012	U	1	0		03/15/2024
TSS	mg/L	+/-5	57.2		56.9		1	0.53		03/18/2024
TKN	mg/L	+/-20	1.00		1.00		1	0		03/19/2024

Duplicate Sample Summary

Client:	LiRo Engineers, Inc.	SDG No.:	P1747
Project:	Walter Gladwin Recreation Center, Bronx, NY	Sample ID:	P1747-03
Client ID:	MW-01MSD	Percent Solids for Spike Sample:	0

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/AD	Qual	Analysis Date
Hexavalent Chromium	mg/L	+/-20	0.95		0.97		2	2.71		03/14/2024
Chloride	mg/L	+/-20	108		108		1	0		03/14/2024
Phenolics	mg/L	+/-20	0.99		0.98		1	1		03/15/2024
TKN	mg/L	+/-20	5.90		5.90		1	0		03/19/2024



Laboratory Control Sample Summary

Client:

LiRo Engineers, Inc.

SDG No.:

P1747

Project:

Walter Gladwin Recreation Center, Bronx, NY

Run No.:

LB129875

Analyte		Units	True Value	Result	Conc. Qualifier	% Recovery	Dilution Factor	Acceptance Limit %R	Analysis Date
Sample ID	LB129875BS								
CBOD5		mg/L	198	175		88	1	84.6-115.4	03/14/2024

Laboratory Control Sample Summary

Client:

LiRo Engineers, Inc.

SDG No.:

P1747

Project:

Walter Gladwin Recreation Center, Bronx, NY

Run No.:

LB129881

Analyte	Units	True Value	Result	Conc. Qualifier	% Recovery	Dilution Factor	Acceptance Limit %R	Analysis Date
Sample ID	LB129881BS							
Hexavalent Chromium	mg/L	0.5	0.51		103	1	90-111	03/14/2024

Laboratory Control Sample Summary

Client:LiRo Engineers, Inc.

SDG No.:P1747

Project:Walter Gladwin Recreation Center, Bronx, NY

Run No.:LB129890

Analyte		Units	True Value	Result	Conc. Qualifier	% Recovery	Dilution Factor	Acceptance Limit %R	Analysis Date
Sample ID	LB129890BS								
Chloride		mg/L	50	47.0		94	1	90-110	03/14/2024



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Laboratory Control Sample Summary

Client:LiRo Engineers, Inc.

SDG No.:P1747

Project:Walter Gladwin Recreation Center, Bronx, NY

Run No.:LB129904

Analyte	Units	True Value	Result	Conc. Qualifier	% Recovery	Dilution Factor	Acceptance Limit %R	Analysis Date
Sample ID	LB129904BS							
Non-Polar Material	mg/L	20.0	16.7		84	1	78-114	03/15/2024



Laboratory Control Sample Summary

Client:

LiRo Engineers, Inc.

SDG No.:

P1747

Project:

Walter Gladwin Recreation Center, Bronx, NY

Run No.:

LB129904

Analyte	Units	True Value	Result	Conc. Qualifier	% Recovery	Dilution Factor	Acceptance Limit %R	Analysis Date
Sample ID	LB129904BSD							
Non-Polar Material	mg/L	20.0	17.0		85	1	78-114	03/15/2024



Laboratory Control Sample Summary

Client: LiRo Engineers, Inc.

SDG No.: P1747

Project: Walter Gladwin Recreation Center, Bronx, NY

Run No.: LB129917

Analyte		Units	True Value	Result	Conc. Qualifier	% Recovery	Dilution Factor	Acceptance Limit %R	Analysis Date
Sample ID	LB129917BS								
TSS		mg/L	550	531		96	1	90-110	03/18/2024



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Laboratory Control Sample Summary

Client:

LiRo Engineers, Inc.

SDG No.:

P1747

Project:

Walter Gladwin Recreation Center, Bronx, NY

Run No.:

LB129942

Analyte		Units	True Value	Result	Conc. Qualifier	% Recovery	Dilution Factor	Acceptance Limit %R	Analysis Date
Sample ID	PB159614BS								
TKN		mg/L	5	4.80		96	1	90-110	03/19/2024



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Laboratory Control Sample Summary

Client:

LiRo Engineers, Inc.

SDG No.:

P1747

Project:

Walter Gladwin Recreation Center, Bronx, NY

Run No.:

LB129910

Analyte		Units	True Value	Result	Conc. Qualifier	% Recovery	Dilution Factor	Acceptance Limit %R	Analysis Date
Sample ID	PB159616BS								
Phenolics		mg/L	1	0.97		97	1	80-120	03/15/2024