

**INDEPENDENT TESTING LAB**

830 ROBINWOOD COURT, TRAVERSE CITY, MI 49686

PH: 231-929-0905

FAX: 231-929-0894

www.gtanalytical.com

Company: LAMBDA ENERGY RESOURCES, LLC
Name:
ClientProj: 2018100136
GTA ProjNo: 012723-5

Site Addr: HAYES 22

Sampled By: BRENDAN RUPPEN/GCES
Date Rec: 1/27/2023
Time Rec: 2:30 PM

Sample No.	Sample ID	Date Sampled	Time Sampled	Sample Matrix
1	RW-101	1/27/2023	1:00 PM	WATER
2	RW-103	1/27/2023	1:05 PM	WATER
3	RW-104	1/27/2023	1:10 PM	WATER
4	RW-105	1/27/2023	1:15 PM	WATER
5	TOWER EFF.	1/27/2023	1:20 PM	WATER

ELECTRONIC SIGNATURE REPORT. This is a final report for the following pages of data for the samples specified above. All analysis was performed by the methods stated and all quality control measures required were completed. All quality control information is available upon request.

Kirk Chase

Kirk L. Chase/Chemist
Grand Traverse Analytical
830 Robinwood Court
Traverse City, MI 49686
Ph: 231-929-0905
Fx: 231-929-0894
SP: 231-590-0291
kirk@gtanalytical.com

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COMPANY: LAMBDA ENERGY RESOURCES, LLC
PROJECT NO: 2018100136
LOCATION: HAYES 22
MI
SAMPLE MATRIX: WATER
SAMPLE ID: RW-101

GTA PROJECT NO: 012723-5
GTA SAMPLE NO: 1
DATE SAMPLED: 1/27/2023
TIME SAMPLED: 1:00 PM
DATE RECEIVED: 1/27/2023
TIME RECEIVED: 2:30 PM
SAMPLED BY: BRENDAN RUPPEN/GCES

EPA 8260B VOLATILE ORGANICS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Extracted</u>	<u>Date Complete</u>	<u>Prep Method</u>
Benzene	ND	1.0	ug/L (PPB)	MR		1/30/2023	EPA 5030B
Toluene	ND	1.0					
Ethylbenzene	ND	1.0					
Xylene(Total)	ND	3.0					

SOIL/SOLIDS CONCENTRATIONS ARE DETERMINED ON A DRY WEIGHT BASIS.
ND = NOT DETECTED, RESULT < LOD
LOD = LIMIT OF DETECTION

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COMPANY: LAMBDA ENERGY RESOURCES, LLC
PROJECT NO: 2018100136
LOCATION: HAYES 22
MI
SAMPLE MATRIX: WATER
SAMPLE ID: RW-103

GTA PROJECT NO: 012723-5
GTA SAMPLE NO: 2
DATE SAMPLED: 1/27/2023
TIME SAMPLED: 1:05 PM
DATE RECEIVED: 1/27/2023
TIME RECEIVED: 2:30 PM
SAMPLED BY: BRENDAN RUPPEN/GCES

EPA 8260B VOLATILE ORGANICS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Extracted</u>	<u>Date Complete</u>	<u>Prep Method</u>
Benzene	98	1.0	ug/L (PPB)	MR		1/30/2023	EPA 5030B
Toluene	ND	1.0					
Ethylbenzene	29	1.0					
Xylene(Total)	33	3.0					

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PROJECT NO: 2018100136
LOCATION: HAYES 22
MI
SAMPLE MATRIX: WATER
SAMPLE ID: RW-104

GTA PROJECT NO: 012723-5
GTA SAMPLE NO: 3
DATE SAMPLED: 1/27/2023
TIME SAMPLED: 1:10 PM
DATE RECEIVED: 1/27/2023
TIME RECEIVED: 2:30 PM
SAMPLED BY: BRENDAN RUPPEN/GCES

EPA 8260B VOLATILE ORGANICS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Extracted</u>	<u>Date Complete</u>	<u>Prep Method</u>
Benzene	18	1.0	ug/L (PPB)	MR		1/30/2023	EPA 5030B
Toluene	ND	1.0					
Ethylbenzene	47	1.0					
Xylene(Total)	69	3.0					

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PROJECT NO: 2018100136
LOCATION: HAYES 22
MI
SAMPLE MATRIX: WATER
SAMPLE ID: RW-105

GTA PROJECT NO: 012723-5
GTA SAMPLE NO: 4
DATE SAMPLED: 1/27/2023
TIME SAMPLED: 1:15 PM
DATE RECEIVED: 1/27/2023
TIME RECEIVED: 2:30 PM
SAMPLED BY: BRENDAN RUPPEN/GCES

EPA 8260B VOLATILE ORGANICS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Extracted</u>	<u>Date Complete</u>	<u>Prep Method</u>
Benzene	71	1.0	ug/L (PPB)	MR		1/30/2023	EPA 5030B
Toluene	3.8	1.0					
Ethylbenzene	65	1.0					
Xylene(Total)	100	3.0					

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PROJECT NO: 2018100136
LOCATION: HAYES 22
MI
SAMPLE MATRIX: WATER
SAMPLE ID: TOWER EFF.
GTA PROJECT NO: 012723-5
GTA SAMPLE NO: 5
DATE SAMPLED: 1/27/2023
TIME SAMPLED: 1:20 PM
DATE RECEIVED: 1/27/2023
TIME RECEIVED: 2:30 PM
SAMPLED BY: BRENDAN RUPPEN/GCES

EPA 8260B VOLATILE ORGANICS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Extracted</u>	<u>Date Complete</u>	<u>Prep Method</u>
Benzene	ND	1.0	ug/L (PPB)	MR		1/30/2023	EPA 5030B
Toluene	ND	1.0					
Ethylbenzene	ND	1.0					
Xylene(Total)	ND	3.0					

SOIL/SOLIDS CONCENTRATIONS ARE DETERMINED ON A DRY WEIGHT BASIS.
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COMPANY: LAMBDA ENERGY RESOURCES, LLC
PROJECT NO: 2018100136
LOCATION: HAYES 22
MI
SAMPLED BY: BRENDAN RUPPEN/GCES
SAMPLE ID: RW-101

GTA PROJECT NO: 012723-5
GTA SAMPLE NO: 1
DATE SAMPLED: 1/27/2023
TIME SAMPLED: 1:00 PM
DATE RECEIVED: 1/27/2023
TIME RECEIVED: 2:30 PM
SAMPLE MATRIX: WATER

METALS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>	<u>Digestion Method</u>
ARSENIC TOTAL EPA 200.8	ND	0.0010	mg/L (PPM)	MR	2/9/2023	EPA 3020A
IRON TOTAL EPA 200.8	ND	0.010	mg/L (PPM)	MR	2/9/2023	EPA 3020A
MANGANESE TOTAL EPA 200.8	0.10	0.0010	mg/L (PPM)	MR	2/9/2023	EPA 3020A

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PROJECT NO: 2018100136
LOCATION: HAYES 22
MI
SAMPLED BY: BRENDAN RUPPEN/GCES
SAMPLE ID: RW-103

GTA PROJECT NO: 012723-5
GTA SAMPLE NO: 2
DATE SAMPLED: 1/27/2023
TIME SAMPLED: 1:05 PM
DATE RECEIVED: 1/27/2023
TIME RECEIVED: 2:30 PM
SAMPLE MATRIX: WATER

METALS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>	<u>Digestion Method</u>
ARSENIC TOTAL EPA 200.8	0.0033	0.0010	mg/L (PPM)	MR	2/9/2023	EPA 3020A
IRON TOTAL EPA 200.8	2.1	0.010	mg/L (PPM)	MR	2/9/2023	EPA 3020A
MANGANESE TOTAL EPA 200.8	0.082	0.0010	mg/L (PPM)	MR	2/9/2023	EPA 3020A

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COMPANY: LAMBDA ENERGY RESOURCES, LLC
PROJECT NO: 2018100136
LOCATION: HAYES 22
MI
SAMPLED BY: BRENDAN RUPPEN/GCES
SAMPLE ID: RW-104

GTA PROJECT NO: 012723-5
GTA SAMPLE NO: 3
DATE SAMPLED: 1/27/2023
TIME SAMPLED: 1:10 PM
DATE RECEIVED: 1/27/2023
TIME RECEIVED: 2:30 PM
SAMPLE MATRIX: WATER

METALS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>	<u>Digestion Method</u>
ARSENIC TOTAL EPA 200.8	0.0017	0.0010	mg/L (PPM)	MR	2/9/2023	EPA 3020A
IRON TOTAL EPA 200.8	1.7	0.010	mg/L (PPM)	MR	2/9/2023	EPA 3020A
MANGANESE TOTAL EPA 200.8	0.069	0.0010	mg/L (PPM)	MR	2/9/2023	EPA 3020A

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PROJECT NO: 2018100136

LOCATION: HAYES 22

MI

SAMPLED BY: BRENDAN RUPPEN/GCES

SAMPLE ID: RW-105

GTA PROJECT NO: 012723-5

GTA SAMPLE NO: 4

DATE SAMPLED: 1/27/2023

TIME SAMPLED: 1:15 PM

DATE RECEIVED: 1/27/2023

TIME RECEIVED: 2:30 PM

SAMPLE MATRIX: WATER

METALS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>	<u>Digestion Method</u>
ARSENIC TOTAL EPA 200.8	0.0014	0.0010	mg/L (PPM)	MR	2/9/2023	EPA 3020A
IRON TOTAL EPA 200.8	1.3	0.010	mg/L (PPM)	MR	2/9/2023	EPA 3020A
MANGANESE TOTAL EPA 200.8	0.10	0.0010	mg/L (PPM)	MR	2/9/2023	EPA 3020A

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PROJECT NO: 2018100136
LOCATION: HAYES 22
MI
SAMPLED BY: BRENDAN RUPPEN/GCES
SAMPLE ID: TOWER EFF.

GTA PROJECT NO: 012723-5
GTA SAMPLE NO: 5
DATE SAMPLED: 1/27/2023
TIME SAMPLED: 1:20 PM
DATE RECEIVED: 1/27/2023
TIME RECEIVED: 2:30 PM
SAMPLE MATRIX: WATER

METALS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>	<u>Digestion Method</u>
ARSENIC TOTAL EPA 200.8	ND	0.0010	mg/L (PPM)	MR	2/9/2023	EPA 3020A
IRON TOTAL EPA 200.8	ND	0.010	mg/L (PPM)	MR	2/9/2023	EPA 3020A
MANGANESE TOTAL EPA 200.8	0.0016	0.0010	mg/L (PPM)	MR	2/9/2023	EPA 3020A

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LOD = LIMIT OF DETECTION

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COMPANY: LAMBDA ENERGY RESOURCES, LLC

GTA PROJECT NO: 012723-5

PROJECT NO: 2018100136

GTA SAMPLE NO: 1

LOCATION: HAYES 22

DATE SAMPLED: 1/27/2023

TIME SAMPLED: 1:00 PM

DATE RECEIVED: 1/27/2023

TIME RECEIVED: 2:30 PM

MI

SAMPLED BY: BRENDAN RUPPEN/GCES

SAMPLE ANALYSIS**No: Analysis**

SAMPLE ID: RW-101

CHLORIDE EPA 300.0

Concentration

ND

LOD

10

Units

mg/L (PPM)

Analyst

KC/TR

Date Completed

1/31/2023

Sample Matrix

WATER

ND = NOT DETECTED, RESULT < LOD

LOD = LIMIT OF DETECTION

s.u. = STANDARD pH UNITS REPORTED AT 25 C

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COMPANY: LAMBDA ENERGY RESOURCES, LLC

PROJECT NO: 2018100136

LOCATION: HAYES 22

GTA PROJECT NO: 012723-5

GTA SAMPLE NO: 2

DATE SAMPLED: 1/27/2023

TIME SAMPLED: 1:05 PM

DATE RECEIVED: 1/27/2023

TIME RECEIVED: 2:30 PM

SAMPLED BY: MI
BRENDAN RUPPEN/GCES**SAMPLE ANALYSIS****No: Analysis**

SAMPLE ID: RW-103

CHLORIDE EPA 300.0

Concentration

17

LOD

10

Units

mg/L (PPM)

Analyst

KC/TR

Date Completed

1/31/2023

Sample Matrix

WATER

ND = NOT DETECTED, RESULT < LOD

LOD = LIMIT OF DETECTION

s.u. = STANDARD pH UNITS REPORTED AT 25 C

COMPANY: LAMBDA ENERGY RESOURCES, LLC
PROJECT NO: 2018100136
LOCATION: HAYES 22
MI
SAMPLED BY: BRENDAN RUPPEN/GCES

GTA PROJECT NO: 012723-5
GTA SAMPLE NO: 3
DATE SAMPLED: 1/27/2023
TIME SAMPLED: 1:10 PM
DATE RECEIVED: 1/27/2023
TIME RECEIVED: 2:30 PM

SAMPLE ANALYSIS

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>	<u>Sample Matrix</u>
	SAMPLE ID: RW-104 CHLORIDE EPA 300.0	27	10	mg/L (PPM)	KC/TR	1/31/2023	WATER

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LOD = LIMIT OF DETECTION
s.u. = STANDARD pH UNITS REPORTED AT 25 C

COMPANY: LAMBDA ENERGY RESOURCES, LLC

GTA PROJECT NO: 012723-5

PROJECT NO: 2018100136

GTA SAMPLE NO: 4

LOCATION: HAYES 22

DATE SAMPLED: 1/27/2023

TIME SAMPLED: 1:15 PM

DATE RECEIVED: 1/27/2023

TIME RECEIVED: 2:30 PM

MI

SAMPLED BY: BRENDAN RUPPEN/GCES

SAMPLE ANALYSIS

No: Analysis

SAMPLE ID: **RW-105**

CHLORIDE EPA 300.0

Concentration

20

LOD

10

Units

mg/L (PPM)

Analyst

KC/TR

Date Completed

1/31/2023

Sample Matrix

WATER

ND = NOT DETECTED, RESULT < LOD

LOD = LIMIT OF DETECTION

s.u. = STANDARD pH UNITS REPORTED AT 25 C

COMPANY: LAMBDA ENERGY RESOURCES, LLC
PROJECT NO: 2018100136
LOCATION: HAYES 22
MI
SAMPLED BY: BRENDAN RUPPEN/GCES

GTA PROJECT NO: 012723-5
GTA SAMPLE NO: 5
DATE SAMPLED: 1/27/2023
TIME SAMPLED: 1:20 PM
DATE RECEIVED: 1/27/2023
TIME RECEIVED: 2:30 PM

SAMPLE ANALYSIS

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>	<u>Sample Matrix</u>
	SAMPLE ID: TOWER EFF. CHLORIDE EPA 300.0	33	10	mg/L (PPM)	KC/TR	1/31/2023	WATER

ND = NOT DETECTED, RESULT < LOD
LOD = LIMIT OF DETECTION
s.u. = STANDARD pH UNITS REPORTED AT 25 C

CHAIN OF CUSTODY

PROJECT NUMBER 20181001360	SITE NAME/ADDRESS Hayes 22	COMPANY/NAME LER
SAMPLED BY Brendan Ruggen	COMPANY GCES	GTA PROJECT # 012723-5

SAMPLE INFORMATION

#	SAMPLE ID	DATE SAMPLED	TIME	MATRIX	ANALYSIS
	RW-101	1/27/23	1:00	GW	BTEX, Chloride, Total Iron, Manganese, Arsenic
	RW-103	↓	1:05	↓	
	RW-104		1:10	↓	
	RW-105		1:15	↓	
	Tower Eff.	↓	1:20	↓	

BILL TO: LER	TempRec: ☐ 1.5°C	On Ice? ☒ Y ☐ N	REPORT TO: M. Harley
RELEASED BY B. Ruggen	DATE/TIME 1/27/23 2:27	RECEIVED BY [Signature]	DATE/TIME 1/27/23 2:30
REQUESTED TAT ☒ STANDARD ☐ 1 BUSINESS DAY ☐ 2 BUSINESS DAYS ☐ 3 BUSINESS DAYS			