



**INDEPENDENT TESTING LAB**

830 ROBINWOOD COURT, TRAVERSE CITY, MI 49686

PH: 231-929-0905

FAX: 231-929-0894

[www.gtanalytical.com](http://www.gtanalytical.com)

Company: LAMBDA ENERGY RESOURCES, LLC  
Name:  
ClientProj:

Site Addr: EPA-UIC ANNUAL SAMPLES

GTA ProjNo: 092518-26

Sampled By: CV/RG/TP - LER  
Date Rec: 9/25/2018  
Time Rec: 11:00 AM

Sample No.	Sample ID	Date Sampled	Time Sampled	Sample Matrix
1	DAVENPORT 4-5 SWD	9/18/2018	11:00 AM	BRINE
2	ST. RAPID RIVER 1-24 SWD	9/18/2018	12:13 PM	BRINE
3	ST. KALKSKA 2-12 SWD	9/18/2018	2:25 PM	BRINE
4	ST. KALKSKA 2-24	9/18/2018	3:08 PM	BRINE
5	ST. BLUE LAKE 61-17 SWD	9/20/2018	11:30 AM	BRINE
6	ST. CLEM 1-11 SWD	9/20/2018	8:30 AM	BRINE
7	PARCELL S2-9 SWD	9/20/2018	11:00 AM	BRINE
8	STACK JEWELL 1-29	9/20/2018	9:45 AM	BRINE
9	BOWMAN ST MAYFIELD 6-19A SWD	9/20/2018	2:15 PM	BRINE

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](mailto:kirk@gtanalytical.com)









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COMPANY:	LAMBDA ENERGY RESOURCES, LLC	GTA PROJECT NO:	092518-26
PROJECT NO:		GTA SAMPLE NO:	2
LOCATION:	EPA-UIC ANNUAL SAMPLES	DATE RECEIVED:	9/25/2018
	MI	TIME RECEIVED:	11:00 AM
SAMPLED BY:	CV/RG/TP - LER	DATE SAMPLED:	9/18/2018
		TIME SAMPLED:	12:13 PM
SAMPLE ID:	ST. RAPID RIVER 1-24 SWD	SAMPLE MATRIX:	BRINE

**SAMPLE RESULTS**

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Complete</u>
ALKALINITY SM 4500CO2D (BICARBONATE)	1,000	10	mg/L (PPM)	TR	10/2/2018
ALKALINITY SM 4500CO2D (CARBONATE)	ND	10	mg/L (PPM)	TR	10/2/2018
CHLORIDE EPA 300.0	244,000	2,000	mg/L (PPM)	LV	10/3/2018
pH EPA 150.1 - LAB	6.0	0.10	s.u.	TR	10/2/2018
SPECIFIC GRAVITY SM 2710F	1.187	-	-	LV	10/9/2018
SULFATE EPA 300.0	ND	50	mg/L (PPM)	LV	10/3/2018
TOTAL DISSOLVED SOLIDS EPA 160.1	290,000	5.0	mg/L (PPM)	TR	10/3/2018

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













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COMPANY:	LAMBDA ENERGY RESOURCES, LLC	GTA PROJECT NO:	092518-26
PROJECT NO:		GTA SAMPLE NO:	5
LOCATION:	EPA-UIC ANNUAL SAMPLES	DATE RECEIVED:	9/25/2018
		TIME RECEIVED:	11:00 AM
	MI	DATE SAMPLED:	9/20/2018
SAMPLED BY:	CV/RG/TP - LER	TIME SAMPLED:	11:30 AM
SAMPLE ID:	ST. BLUE LAKE 61-17 SWD	SAMPLE MATRIX:	BRINE

**SAMPLE RESULTS**

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Complete</u>
ALKALINITY SM 4500CO2D (BICARBONATE)	910	10	mg/L (PPM)	TR	10/2/2018
ALKALINITY SM 4500CO2D (CARBONATE)	ND	10	mg/L (PPM)	TR	10/2/2018
CHLORIDE EPA 300.0	260,000	2,000	mg/L (PPM)	LV	10/3/2018
pH EPA 150.1 - LAB	5.9	0.10	s.u.	TR	10/2/2018
SPECIFIC GRAVITY SM 2710F	1.121	-	-	LV	10/9/2018
SULFATE EPA 300.0	ND	50	mg/L (PPM)	LV	10/3/2018
TOTAL DISSOLVED SOLIDS EPA 160.1	250,000	5.0	mg/L (PPM)	TR	10/3/2018

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COMPANY: LAMBDA ENERGY RESOURCES, LLC  
PROJECT NO:  
LOCATION: EPA-UIC ANNUAL SAMPLES  
MI  
SAMPLED BY: CV/RG/TP - LER  
SAMPLE ID: ST. CLEM 1-11 SWD

GTA PROJECT NO: 092518-26  
GTA SAMPLE NO: 6  
DATE RECEIVED: 9/25/2018  
TIME RECEIVED: 11:00 AM  
DATE SAMPLED: 9/20/2018  
TIME SAMPLED: 8:30 AM  
SAMPLE MATRIX: BRINE

**SAMPLE RESULTS**

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Complete</u>
ALKALINITY SM 4500CO2D (BICARBONATE)	1,900	10	mg/L (PPM)	TR	10/2/2018
ALKALINITY SM 4500CO2D (CARBONATE)	44	10	mg/L (PPM)	TR	10/2/2018
CHLORIDE EPA 300.0	107,000	2,000	mg/L (PPM)	LV	10/3/2018
pH EPA 150.1 - LAB	8.4	0.10	s.u.	TR	10/2/2018
RESISTIVITY SM 2510A	7.0	-	ohms x cm	LV	10/3/2018
SPECIFIC GRAVITY SM 2710F	1.074	-	-	LV	10/9/2018
SULFATE EPA 300.0	ND	50	mg/L (PPM)	LV	10/3/2018
SULFIDE SM 4500S D	19	1.0	mg/L (PPM)	KC	9/25/2018
TOTAL DISSOLVED SOLIDS EPA 160.1	160,000	5.0	mg/L (PPM)	TR	10/3/2018

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













**CHAIN OF CUSTODY**

PROJECT NUMBER	SITE NAME/ADDRESS	COMPANY/NAME
	Various	LAMBDA ENERGY Resources
SAMPLED BY	COMPANY	GTA PROJECT #
R. GRUSS C. Vergote / T. Perrin	LAMBDA	092518-26

**SAMPLE INFORMATION**

#	SAMPLE ID	DATE SAMPLED	TIME	MATRIX	ANALYSIS	
1	Davenport 4-5 swd	9/18/18	11 A.	Brine	Parameters # 2	
2	St. Rapid River 1-24 swd	"	12:13 P	}	" 1	
3	St. Kalkaska 2-12 swd	"	2:25 P		" 1	
4	St. Kalkaska 2-29 w/w	"	3:08 P		" 2	
5	St. Blue Lake 61-17 swd	9/20/18	11:30 A		" 1	
6	St. Cleon 1-11 swd	9/20/18	8:30 A		" 2	
7	Parcell 52-9 swd	9/20/18	11 A.		" 2	
8	Stack Jewell 1-29	9/20/18	9:45 A		" 1	
9	Bowman St Mayfield					
	6-19A swd	9/20/18	2:15 P		" 1	

**BILL TO:**

LAMBDA ENERGY Resources LLC

**REPORT TO:**

V.J. Kniss

**RELEASED BY**

**DATE/TIME**

*V.J. Kniss*

**RECEIVED BY**

**DATE/TIME**

*[Signature]*

9-25-18 11 A

**REQUESTED TAT**

STANDARD

1 BUSINESS DAY

2 BUSINESS DAYS

3 BUSINESS DAYS

PARAMETERS # 1	
	pH
	specific gravity
	chloride
	total dissolved solids
	dis. Ca, Mg, Na
	carbonate/bicarb alkalinity
	sulfate

PARAMETERS # 2	
X	pH
X	specific gravity
X	resistivity
X	chloride
X	total dissolved solids
X	dis. Ba, Ca, Mg, Na
X	total - Fe
X	carbonate/bicarb alkalinity
X	sulfate, sulfide