November 29, 2022 *(sent via email to kidderk1@michigan.gov)*
ECT No.: 13-0685-2000

Mr. Keith Kidder, Senior Geologist
Michigan Department of Environment, Great Lakes, and Energy – Oil, Gas, and Minerals Division
Lansing Central Office
525 West Allegan Street
Lansing, Michigan 48909

Re: **Quarterly Project Update Report – 3rd Quarter 2022**
Hartland 36 Gas Plant
Portion of E½ of NW ¼ of Section 36, T03N-R06E
Hartland Township, Livingston County, Michigan

Dear Mr. Kidder:

Attached please find an electronic copy of the Quarterly Project Update Report – 3rd Quarter 2022 completed by Environmental Consulting & Technology, Inc. (ECT) for the Hartland 36 Gas Plant site.

ECT sincerely appreciates the opportunity to provide our consulting services on this important project. Should you have questions or require additional information, please do not hesitate to contact me at (231) 676-3023 or jlewandowski@ectinc.com.

Sincerely,
ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.

Jeremy S. Lewandowski
Senior Engineer

cc: Mr. Nick Summerland – Lambda Energy Resources, LLC

Attachments: Quarterly Project Update Report – 3rd Quarter 2022

Environmental Consulting & Technology, Inc.
3399 Veterans Drive, Traverse City, Michigan 49684

QUARTERLY PROJECT UPDATE REPORT
3rd QUARTER 2022

HARLTAND 36 GAS PLANT
PORTION OF E½ of NW ¼ of SECTION 36, T03N-R06E,
HARTLAND TWP, LIVINGSTON COUNTY, MICHIGAN

LAMBDA ENERGY RESOURCES, LLC
1510 THOMAS ROAD
KALKASKA, MICHIGAN 49646

November 29, 2022

ECT No. 13-0685-2000

DOCUMENT REVIEW

The dual signatory process is an integral part of Environmental Consulting & Technology, Inc.'s (ECT's) Document Review Policy No. 9.03. All ECT documents undergo technical/peer review prior to dispatching these documents to any outside entity.

This document has been authored and reviewed by the following employees:

Jeremy S. Lewandowski	Brian J. Baumann, PE
Author	Peer Review
	
Signature	Signature
November 29, 2022	November 29, 2022
Date	Date

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LIST OF APPENDICES

1.0 INTRODUCTION

This Quarterly Project Update Report was compiled by Environmental Consulting & Technology, Inc. (ECT), on behalf of Lambda Energy Resources, LLC (LER) and details remediation system operations and performance monitoring completed during the 3rd Quarter 2022 at the Hartland 36 Gas Plant location, herein referenced as the "Site".

2.0 PROJECT LOCATION

The Site is a former natural gas processing plant which operated from 1999 to 2015. The property is located in a portion of the East ½ of the Northwest ¼ of Section 36, T03N-R06E, on the south side of Lone Tree Road between North Pleasant Valley Road and South Tipsico Lake Road in Hartland Township, Livingston County, Michigan. A Site Location Map and Site and Surrounding Properties Map are included as Figure 1 and Figure 2, respectively, in Appendix A.

3.0 PROJECT SUBMITTALS

The following presents a chronological summary of previous documents submitted to the Michigan Department of Environment, Great Lakes, and Energy – Oil, Gas, and Minerals Division (EGLE-OGMD) by ECT for the Site:

- Soil Closure Report dated February 15, 2016
- Groundwater Characterization Work Plan dated February 23, 2016
- Groundwater Characterization Work Plan 2 dated July 8, 2016
- Project Update Report dated September 26, 2016
- Groundwater Characterization Work Plan 3 dated October 14, 2016
- Additional Groundwater Characterization Work Plan dated December 29, 2016
- Groundwater Characterization Work Plan 5 dated March 2, 2017
- Biosparging Pilot Study Work Plan dated April 5, 2017
- Groundwater Characterization Report dated July 3, 2017
- Technical Memorandum – Biosparging Pilot Study dated July 28, 2017
- Remediation System Design Plan dated August 11, 2017
- Quarterly Project Update Report – 1st Quarter 2018 dated April 24, 2018
- Quarterly Project Update Report – 2nd Quarter 2018 dated August 8, 2018
- Quarterly Project Update Report – 3rd Quarter 2018 dated October 26, 2018
- Quarterly Project Update Report – 4th Quarter 2018 dated April 8, 2019
- Quarterly Project Update Report – 1st Quarter 2019 dated April 10, 2019
- Quarterly Project Update Report – 2nd Quarter 2019 dated August 19, 2019
- Quarterly Project Update Report – 3rd Quarter 2019 dated November 25, 2019
- Quarterly Project Update Report – 4th Quarter 2020 dated May 5, 2020
- Quarterly Project Update Report – 1st Quarter 2020 dated July 17, 2020
- Quarterly Project Update Report – 2nd Quarter 2020 dated September 10, 2020
- Quarterly Project Update Report – 3rd Quarter 2020 dated December 17, 2020

- Quarterly Project Update Report – 4th Quarter 2020 dated February 2, 2021
- Quarterly Project Update Report – 1st Quarter 2021 dated April 1, 2021
- Quarterly Project Update Report – 2nd Quarter 2021 dated July 14, 2021
- Quarterly Project Update Report – 3rd Quarter 2021 dated October 28, 2021
- Quarterly Project Update Report – 4th Quarter 2021 dated March 3, 2022
- Quarterly Project Update Report – 1st Quarter 2022 dated April 27, 2022
- Quarterly Project Update Report – 2nd Quarter 2022 dated August 15, 2022

4.0 PROJECT OVERVIEW

KCS Michigan Resources developed the Site in 1999 and operated the natural gas processing plant into 2006. Merit Energy Company acquired the Site in 2006 and operated the plant until August 2015, when facility decommissioning commenced. LER acquired the Site from Merit Energy Company in July 2018.

In general, operations at the Site included crude oil and brine separation and storage, natural gas compression, dehydration, sweetening (hydrogen sulfide [H_2S] removal), carbon dioxide (CO_2) removal (amine process), and refrigeration for natural gas liquid (NGL) extraction and storage.

Contaminated soil was discovered in September 2015 during facility decommissioning activities at the former sweetening plant/refrigeration building; sulfolane impacts are from the gas treatment chemical Sulfinol®. Remediation activities (excavation and off-Site disposal) completed from September 2015 through December 2016 resulted in disposal of 13,481.4 tons of soil at the Venice Park Landfill in Lennon, Michigan. Verification of soil remediation (VSR) samples collected from the excavations confirmed remediation of impacted soils. Refer to the Soil Closure Report dated February 15, 2016 for a detailed summary of soil remediation and sampling activities.

Groundwater investigation activities commenced on October 29, 2015 and were completed on March 7, 2017. Seven soil borings, 13 temporary monitor wells, including two vertical aquifer profile (VAP) locations, and 37 permanent monitor wells, including 20 shallow screened monitor wells and 17 deep screened monitor wells, have been installed at the Site. The lateral and vertical extents of groundwater impacted with sulfolane have been delineated to non-detectable concentrations (laboratory reporting limit of 10 micrograms per liter, µg/L). The maximum sulfolane concentration reported from a monitor well at the Site was 11,000 micrograms per liter (µg/L) from MW-20D on the June 19-21, 2017 sampling event. Refer to the Groundwater Characterization Report dated July 3, 2017 for a detailed summary of groundwater characterization and assessment activities.

A biosparging pilot study was conducted at the Site from May 1, 2017 through June 16, 2017. The pilot study included three tests to evaluate the effectiveness of biosparging to enhance bioremediation of sulfolane dissolved in groundwater at the Site. Data obtained from the pilot study indicates biosparging is an effective remedial alternative for the Site. Concentrations of sulfolane were reduced by 100% within five feet of the biosparge point and 97% to 99% at a distance of 20 feet from the biosparge point. Dissolved oxygen (DO) influence of 4.2-10 milligrams per liter (mg/L) was observed at

monitoring locations situated 40 feet from the biosparge point. Refer to the Technical Memorandum – Biosparging Pilot Study dated July 28, 2017 for a summary of pilot study activities and results.

Information obtained from the pilot study was utilized to compile the Remediation System Design Plan dated August 11, 2017. The Remediation System Design Plan presented the biosparge point (BSP) array, remediation system equipment, anticipated remediation system operation and maintenance (O&M), and performance monitoring activities. Biosparge system installation activities commenced at the Site on August 21, 2017 and concluded with startup of the remediation system on November 16, 2017. Remediation system equipment and components were generally consistent with details and specifications provided in the Remediation System Design Plan and included 41 biosparge points (BSPs). Refer to the Quarterly Project Update Report – 1st Quarter 2018 dated April 24, 2018 for a summary of remediation system installation activities, O&M, and results of performance monitoring events completed through the 1st Quarter 2018.

Performance monitoring results from the 2nd Quarter 2022 indicate the remediation system has reduced concentrations of sulfolane in groundwater to non-detectable levels. The remediation system has remained off since December 6, 2021, when the system was shut down to allow subsurface conditions to stabilize prior to the 4th Quarter 2021 performance monitoring event. Laboratory analytical results from the 2nd Quarter 2022 monitoring event completed on July 5-6, 2022 reported sulfolane non-detect from all 14 of the monitor wells that previously reported sulfolane above the cleanup goal (i.e. analytical target detection limit, 10 µg/L). MW-13D and MW-17D reported concentrations of sulfate (510 mg/L and 300 mg/L, respectively) above the cleanup goal (250 mg/L). Refer to the Quarterly Project Update Report – 2nd Quarter 2022 dated August 15, 2022 for a summary of results of performance monitoring events completed through the 2nd Quarter 2022.

5.0 REMEDIATION SYSTEM OPERATION AND MAINTENANCE

The remediation system has not operated since it was shut down on December 6, 2021.

6.0 PERFORMANCE MONITORING SUMMARY

The following sections detail performance monitoring activities completed at the Site in the 3rd Quarter 2022.

6.1 PERFORMANCE MONITORING EVENTS

Personnel from ECT completed the following performance monitoring event at the Site in the 3rd Quarter 2022:

- September 28-29, 2022 – Quarterly groundwater monitoring event of the following 14 monitor wells:
  - MW-7, MW-7D, MW-13, MW-13D, MW-14S, MW-14D, MW-15D, MW-17S, MW-17D, MW-18, MW-19S, MW-19D, MW-20S, and MW-20D.

6.2 LABORATORY ANALYSIS

Groundwater samples from the 3rd Quarter 2022 monitoring event were collected via low-stress sampling methods in general accordance with USEPA Region 1 Low-Stress (low flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells, Revision Date September 19, 2017. Groundwater samples were collected and analyzed in general accordance with currently applicable EGLE-RRD guidance documents.

The samples were collected into laboratory supplied containers, placed on ice, and shipped under chain-of-custody protocols to the ALS Environmental laboratory facility located in Holland, Michigan for analysis of the following:

- Sulfolane by USEPA Method 8270D
- Sulfate by Method A4500-SO4 E-11

The sample container for sulfolane from MW-20D was damaged during transit. Accordingly, laboratory analysis was unable to be completed for sulfolane for MW-20D.

Copies of laboratory analytical reports are included in Appendix C. Copies of low-flow sampling field forms are included in Appendix D.

6.3 CLEANUP GOALS

The EGLE-OGMD established an interim drinking water criterion for sulfolane of 90 µg/L which has been considered the cleanup goal for sulfolane dissolved in groundwater at the Site. However, per the June 28, 2020 EGLE-OGMD response to the Quarterly Project Update Report – 1st Quarter 2020, the Draft EGLE Part 201 Residential Generic Cleanup Criteria and Screening Level (Part 201 Residential GCCSL) for Drinking Water for sulfolane (5.9 µg/L), published in the Comprehensive Cleanup Criteria Update 2017, is now considered the basis for final site closure. Per footnote (M) of the proposed cleanup criteria tables, since the calculated health-based criteria of 5.9 µg/L is below the analytical target detection limit of 10 µg/L, the analytical target detection limit of 10 µg/L is considered the criterion (i.e. cleanup goal).

The cleanup goal for sulfate, which is a biproduct of the biodegradation of sulfolane, was established in previous project submittals and is the EGLE Part 201 Residential GCCSL Drinking Water Criterion of 250 mg/L.

6.4 GROUNDWATER ANALYTICAL SUMMARY & CLEANUP CRITERIA COMPARISON

The following presents a summary and comparison of groundwater analytical results to the cleanup goal from sampling events completed in the 3rd Quarter 2022. Additional discussion is provided for monitor wells that are not included as part of the quarterly performance monitoring program.

Monitor wells located west beyond the extent of the lower clay confining layer

- Monitor well clusters MW-6/6D and MW-12S/12D reported sulfolane non-detect from all associated sampling events.

Monitor wells screened below the lower clay confining layer

- Monitor wells MW-19DD and MW-21D reported sulfolane non-detect from all associated sampling events.
- Concentrations of sulfolane were reported above applicable cleanup criteria from MW-15DD from the pre-remediation system startup sampling event (September 11-13, 2017) and a confirmation sampling event (September 21, 2018). The concentration of sulfolane detected in MW-15DD is suspected to be the result of drilling activities completed on August 28, 2017. Sulfolane was reported non-detect from MW-15DD from all subsequent sampling events.

Monitor wells screened within the limits of the clay confining layer (area of sulfolane impact)

- The following monitor wells reported sulfolane non-detect from all associated sampling events:
  - MW-1, MW-2, MW-2D, MW-3, MW-3D, MW-4, MW-5, MW-8, MW-9, MW-10, MW-11, MW-15, MW-16, MW-16D, MW-22D, and MW-23D
- The following monitor wells previously reported sulfolane above the cleanup goal prior to the pre-remediation system startup event and non-detect at and subsequent to the pre-remediation system startup event:
  - MW-7 and MW-13
- The following presents percent reductions to the concentration of sulfolane (relative to the highest concentration from/after the pre-remediation system startup sampling event) for monitor wells that reported sulfolane above the cleanup goal from the pre-remediation system startup sampling event:
  - MW-7, MW-7D, MW-13, MW-13D, MW-14D, MW-15D, MW-17S, MW-17D, MW-18, MW-19S, MW-19D, and MW-20S: Non-detect – 100%
  - MW-14S: 88.3% (120 µg/L to 14 µg/L)
- The concentration of sulfate was reported above the cleanup goal (250 mg/L) from MW-13D (470 mg/L). As noted in the Technical Memorandum – Biosparging Pilot Study dated July 28, 2017, natural attenuation/biodegradation (i.e sulfate reduction) of sulfate is expected in the absence of biosparging.

Monitor well locations are illustrated on Figure 3 in Appendix A. Please refer to Table 1 and Table 2 in Appendix B for a summary of groundwater monitoring data for the Site.

7.0 CONCLUSIONS AND RECOMMENDATIONS

As supported by the data presented herein, the remediation system has been effective at reducing concentrations of sulfolane after nearly five years (58 months) of operation. The concentration of sulfolane was reported non-detect from 12 of the 13 monitor wells for the 3rd Quarter 2022 monitoring event. The concentration of sulfolane was reported at 14 µg/L for MW-14S. Sulfolane had not been detected at MW-14S since the June 2018 performance monitoring event. The highest concentration

of sulfolane reported at MW-14S subsequent to the pre-remediation system startup sampling event was 120 µg/L.

The concentration of sulfate reported from MW-13D remains above the cleanup goal. The concentration of sulfate decreased from 600 mg/L (1st Quarter 2022) to 510 mg/L (2nd Quarter 2022) and to 470 mg/L (3rd Quarter 2022). Since the 1st Quarter 2020, the concentration of sulfate has fluctuated between 440 to 600 mg/L at MW-13D. In the absence of active biosparging, natural attenuation/biodegradation (i.e sulfate reduction) of sulfate is expected.

8.0 SCHEDULE

The following schedule of activities is proposed/anticipated for the 4th Quarter 2022:

- A groundwater sample will be collected in October 2022 from MW-14S to validate the concentration of sulfolane reported from the September 28-29, 2022 sampling event. A groundwater sample will also be collected from MW-20D (no analysis for 3rd Quarter 2022 event due to broken bottle during transit to the laboratory).
- The remediation system will remain shut down, pending results from the October 2022 sampling event.
- The 4th Quarter 2022 quarterly groundwater monitoring event will be completed in December 2022 and will include sulfolane and sulfate analysis from the 14 monitor wells with previous detections of sulfolane.
- A quarterly project update report will be submitted within three weeks of receipt of analytical data from the December 2022 quarterly monitoring event.

APPENDIX A

FIGURES

FIGURE 1
SITE LOCATION MAP
HARTLAND 36 GAS PLANT
PORTION OF E 1/2 OF NE 1/4 OF SECTION 36, T03N-R06E
HARTLAND TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN
Source: USGS QUad: Kent Lake, 2015; West Highland, 2015; ECT, 2016.

ECT Environmental Consulting & Technology, Inc.

FIGURE 2
SITE AND SURROUNDING PROPERTIES MAP
HARTLAND 36 GAS PLANT
PORTION OF E 1/2 OF NE 1/4 OF SECTION 36, T03N-R06E
HARTLAND TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN
Source: Google Earth, 2016; ECT, 2016.

ECT Environmental Consulting & Technology, Inc.

Legend

Monitor Well

Temporary Monitor Well

Soil Boring

Excavation Boundary

Fenceline (former)

BSP Location

ND

Not Detected at the Reporting Limit
Sulfolane concentrations (in ug/L) from the September 2022 sampling event.

FIGURE ADAPTED FROM SURVEY PERFORMED BY:

Gourdie-Fraser
Municipal | Development | Transportation

NOTES:

1) DRAWING BASED UPON FIELD OBSERVATIONS TAKEN 11/18/15 (FOR MW DESIGNATED WELLS), 06/06/16 (FOR TMW DESIGNATED WELLS/BORINGS) AND 08/02/16 (FOR MONITORING WELLS 8-13 & 15-16, MW-14 NOT INSTALLED).
2) ADDITIONAL FIELD OBSERVATIONS TAKEN 11/01/16 FOR LOCATIONS AND ELEVATIONS OF MW-13D, MW-14S & D, MW-17S & D, MW-18, AND MW-19S & D. NEW ELEVATIONS WERE ESTABLISHED FOR MW-9, MW-10, MW-11, MW-13, MW-15 AND MW-16. SOIL BORINGS SB-1 & SB-2 WERE ALSO LOCATED ON 11/01/16

ECT

HARTLAND 36 GAS PLANT

130685 - 2000
ECT PROJECT NUMBER

-	-
DESIGNED BY	CHECKED BY
BJB	JSL
DRAWN BY	APPROVED BY

SHEET TITLE

SITE PLAN

SCALE: 1" = 50 @ 11x17

0 25' 50'

NORTH

FIGURE

3

APPENDIX B

TABLES

TABLE 1
GROUNDWATER ANALYTICAL SUMMARY & CLEANUP CRITERIA COMPARISON
Hartland 36 Gas Plant
Portion of E1/2 of NW1/4 of Section 36, T03N-R06E, Hartland Township, Livingston County, Michigan
ECT Project #13-0685-2000

	MW-1			MW-2			MW-2D			MW-3			MW-3D			MW-4			MW-5			MW-6			MW-6D			MW-7		
Date	**Sulfolane**	**DO**	**Sulfate**	**Sulfolane**	**DO**	**Sulfate**	**Sulfolane**	**DO**	**Sulfate**	**Sulfolane**	**DO**	**Sulfate**	**Sulfolane**	**DO**	**Sulfate**	**Sulfolane**	**DO**	**Sulfate**	**Sulfolane**	**DO**	**Sulfate**	**Sulfolane**	**DO**	**Sulfate**	**Sulfolane**	**DO**	**Sulfate**	**Sulfolane**	**DO**	**Sulfate**
9/11-13/17	ND	8.08	---	ND	4.14	---	ND	5.36	---	ND	6.96	---	ND	1.03	---	ND	7.75	---	ND	7.31	---	ND	2.77	---	ND	5.90	---	ND	1.55	---
9/21/17	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12/19-20/17	ND	8.83	6.4	ND	8.76	16	ND	5.02	21	ND	9.81	41	ND	1.90	27	ND	7.10	24	ND	6.85	24	ND	2.99	42	ND	9.26	19	ND	10.07	46
1/25/18	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--
2/27/18	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--
3/28-29/18	ND	7.87	5.0	ND	7.79	14	ND	4.05	17	ND	11.53	26	ND	1.31	30	ND	9.77	29	ND	6.31	24	ND	3.22	41	ND	6.92	20	ND	9.75	31
6/19-21/18	ND	15.96	9.3	ND	10.66	15	ND	7.87	18	ND	8.43	11	ND	1.06	28	ND	9.86	21	ND	12.49	28	ND	10.58	56	ND	10.91	10	ND	10.49	17
9/18-20/18	ND	9.98	8.5	ND	12.08	15	ND	10.21	21	ND	9.56	16	ND	1.87	34	ND	11.86	23	ND	11.26	25	ND	5.56	57	ND	8.27	22	ND	13.67	24
12/17-18/18	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	10.03	41
3/25-26/19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	15.99	44
6/24-26/19	ND	11.22	6.8	ND	7.00	17	ND	3.79	20	ND	11.36	15	ND	4.99	32	ND	11.47	27	ND	9.78	36	ND	6.25	61	ND	7.11	23	ND	12.22	20
9/23-24/19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	12.78	25
12/3-4/19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	9.65	29
1/2/20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2/13/20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3/5-6/20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	49.87	22
4/2/20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6/1-2/20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	18.32	23
9/9-10/20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	8.50	21
10/23/20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12/10/20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	3.52	**250**
1/11/21	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3/10/21	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	9.23	**260**
6/17/21	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	7.53	**290**
7/15/21	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
9/20/21	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12/28-29/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	8.74	42
2/10/22	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3/31-4/01/2022	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	11.84	23
7/05-06/2022	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	8.61	31
9/28-29/2022	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	3.22	230
% Decrease	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Sulfolane Criterion (µg/L)	**Non-detect - <10**																													
Sulfate Criterion (mg/L)	**250**																													

	MW-7D			MW-8			MW-9			MW-10			MW-11			MW-12S			MW-12D			MW-13			MW-13D		
Date	**Sulfolane**	**DO**	**Sulfate**	**Sulfolane**	**DO**	**Sulfate**	**Sulfolane**	**DO**	**Sulfate**	**Sulfolane**	**DO**	**Sulfate**	**Sulfolane**	**DO**	**Sulfate**	**Sulfolane**	**DO**	**Sulfate**	**Sulfolane**	**DO**	**Sulfate**	**Sulfolane**	**DO**	**Sulfate**	**Sulfolane**	**DO**	**Sulfate**
9/11-13/17	**1,900**	0.79	---	ND	9.09	---	ND	0.73	---	ND	7.42	---	ND	3.69	---	ND	2.65	---	ND	1.36	---	ND	0.94	---	**660 (730)**	0.52	**330**
9/21/17	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12/19-20/17	**4,100**	0.89	46	ND	6.34	8	ND	0.57	21	ND	7.95	36	ND	5.04	20	ND	3.98	19	ND	4.00	32	ND	13.79	80	**480**	0.51	240
1/25/18	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	**400**	2.13	240
2/27/18	**1,200**	1.47	96	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	ND	9.90	210
3/28-29/18	**820**	0.61	81	ND	9.65	12	ND	1.32	26	ND	10.34	48	ND	5.17	16	ND	7.70	18	ND	3.45	33	ND	10.12	63	ND	8.41	220
6/19-21/18	**180 (170)**	1.09	61 (57)	ND	8.58	30	ND	3.36	21	ND	9.98	39	ND	10.94	18	ND	9.09	22	ND	5.26	36	ND	8.08	93	**180**	2.42	**480**
9/18-20/18	**170**	1.32	58	ND	7.88	9.4	ND	1.66	29	ND	11.83	18	ND	11.00	45	ND	3.52	55	ND	4.27	34	ND	9.36	69	ND	5.06	**650**
12/17-18/18	**270 (300)**	12.68	37	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	10.41	94	ND	0.38	**740**
3/25-26/19	**1,700**	0.19	53	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	11.46	110	**16**	1.95	**740**
6/24-26/19	**510**	0.81	84	ND	12.70	17	ND	1.20	26	ND	8.50	61	ND	11.21	40	ND	5.84	27	ND	2.96	37	ND	8.54	140	**19**	2.61	**740**
9/23-24/19	**140**	2.58	57	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	8.93	140	ND	5.07	**750**
12/3-4/19	**1,200**	4.02	48	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	10.09	120	**37**	0.82	**660**
1/2/20	**2,400**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2/13/20	**1,500**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3/5-6/20	ND	12.14	32	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	28.96	91	ND	7.08	**920**
4/2/20	**330**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**16**	---	---
6/1-2/20	ND	15.88	30	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	4.51	86	ND	6.56	**560**
9/9-10/20	ND	12.56	27	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	**3.70**	92	ND	2.92	**510**
10/23/20	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--
12/10/20	ND	8.80	21	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	ND	4.56	94	**99**	0.12	**460**
1/11/21	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	**110**	---	--
3/10/21	ND	9.84	17	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	ND	13.08	120	ND	9.78	**450**
6/17/21	**74**	5.82	67	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	ND	10.33	110	**93**	0.63	**510**
7/15/21	**97**	5.16	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	**45**	1.68	--
9/20/21	ND	2.97	90	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	ND	7.41	**530**
12/28-29/2021	ND	5.44	86	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	ND	8.24	120	**21**	1.61	**440**
2/10/22	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	---	ND	4.56	**470**
3/31-4/01/2022	ND	10.29	27	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	ND	7.05	190	ND	7.79	**600**
7/05-06/2022	ND	8.93	15	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	ND	5.88	140	ND	3.68	**510**
9/28-29/2022	ND	9.01	15	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	ND	3.31	100	ND	1.11	**470**
% Decrease	100%	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	100%	---	---
Sulfolane Criterion (µg/L)	**Non-detect - <10**																										
Sulfate Criterion (mg/L)	**250**																										

Notes

1) Concentrations of sulfolane reported in micrograms per liter (µg/L), equivalent to parts per billion (ppb).
2) DO - dissolved oxygen.
3) Concentrations of dissolved oxygen and sulfate reported in milligrams per liter (mg/L), equivalent to parts per million (ppm).
4) (---) - Not sampled.
5) ND - Concentration not detected above reporting limit.
6) Concentrations shown in parenthesis are from duplicate sample.
7) % Decrease of sulfolane is the most recent sampling event relative to highest reported concentration since the pre-system startup event (9/11-13/17).
8) Sulfolane criterion established by EGLE-Oil, Gas, and Minerals Division (EGLE-OGMD).
9) Sulfate criterion - Part 201 Residential Generic Cleanup Criteria and Screening Levels (Part 201 Residential GCCSLs), dated January 10, 2018, per R299.44 (Table 1) of the Michigan Administrative Code.
10) Concentrations that are highlighted and bold exceed cleanup criteria.

TABLE 1
GROUNDWATER ANALYTICAL SUMMARY & CLEANUP CRITERIA COMPARISON
Hartland 36 Gas Plant
Portion of E1/2 of NW1/4 of Section 36, T03N-R06E, Hartland Township, Livingston County, Michigan
ECT Project #13-0685-2000

	MW-14S			MW-14D			MW-15			MW-15D			MW-15DD			MW-16			MW-16D			MW-17S			MW-17D		
Date	**Sulfolane**	**DO**	**Sulfate**	**Sulfolane**	**DO**	**Sulfate**	**Sulfolane**	**DO**	**Sulfate**	**Sulfolane**	**DO**	**Sulfate**	**Sulfolane**	**DO**	**Sulfate**	**Sulfolane**	**DO**	**Sulfate**	**Sulfolane**	**DO**	**Sulfate**	**Sulfolane**	**DO**	**Sulfate**	**Sulfolane**	**DO**	**Sulfate**
9/11-13/17	**120**	0.85	---	**7,700**	0.22	---	ND	4.39	---	**230**	0.22	---	**33**	0.23	---	ND	3.31	---	ND	0.28	---	**3,100**	0.25	---	**380**	0.36	---
9/21/17	---	---	---	---	---	---	---	---	---	---	---	---	**48**	0.64	---	---	---	---	---	---	---	---	---	---	---	---	---
12/19-20/17	**100**	2.05	91	**7,100**	0.45	39	ND	11.02	14	ND	4.22	46	ND	0.56	37	ND	8.42	16	ND	5.99	24	**2,400**	0.88	49	**51**	8.10	33
1/25/18	**85**	3.35	56	**5,400**	0.43	44	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	**510**	0.95	53	ND	10.07	38
2/27/18	ND	9.63	110	**4,000**	0.50	48	---	---	--	---	---	--	---	---	--	---	---	--	---	---	--	**460**	0.96	53	ND	11.02	38
3/28-29/18	ND	8.61	120	**3,000 ($5,100)**	0.22	50 (51)	ND	7.96	16	ND	6.86	29	ND	0.54	37	ND	8.73	19	ND	3.88	25	**52 (52)**	3.28	64	ND	9.68	36
6/19-21/18	**52**	0.28	67	**2,600 (2,800)**	0.09	77 (77)	ND	7.98	39	ND	3.80	27	ND	0.53	42	ND	16.43	43	ND	8.12	24	**55**	8.61	68	ND (ND)	10.63	42 (41)
9/18-20/18	ND	4.90	140	**680**	2.89	110	ND	8.25	32	ND	7.45	20	ND	0.60	41	ND	8.12	21	ND	2.08	22	**32**	3.07	65	ND	3.83	49
12/17-18/18	ND	9.20	220	**290**	3.49	120	---	---	---	ND	6.77	22	---	---	---	---	---	---	---	---	---	ND	9.30	61	ND	9.75	47
3/25-26/19	ND	11.08	180	ND	5.71	120	---	---	---	ND	7.53	23	---	---	---	---	---	---	---	---	---	ND	5.77	80	ND	9.68	45
6/24-26/19	ND	9.88	160	**110**	5.82	120	ND	8.58	55	ND	5.65	28	ND	0.53	65	ND	11.24	23	ND	6.78	33	ND	1.43	69	ND	10.93	65
9/23-24/19	ND	5.96	100	**71**	2.83	150	---	---	---	ND	22.96	26	---	---	---	---	---	---	---	---	---	ND	4.78	73	ND	7.19	96
12/3-4/19	ND	8.66	93	**71**	10.21	150	---	---	---	ND	6.29	21	---	---	---	---	---	---	---	---	---	ND	7.98	61	ND	8.87	80
1/2/20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2/13/20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3/5-6/20	ND	8.44	100	ND	11.39	130	---	---	---	ND	5.66	21	---	---	---	---	---	---	---	---	---	ND	3.26	56	ND	8.20	230
4/2/20	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6/1-2/20	ND	5.62	120	ND	7.50	110	---	---	---	ND	6.87	24	---	---	---	---	---	---	---	---	---	ND	0.86	67	ND	5.71	**260**
9/9-10/20	ND	17.85	88	ND	10.57	100	---	---	---	ND	8.34	21	---	---	---	---	---	---	---	---	---	**190**	1.09	67	ND	1.25	**290**
10/23/20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**91**	6.89	---	---	---	---
12/10/20	ND	1.94	50	ND	1.66	110	---	---	---	ND	22.18	26	---	---	---	---	---	---	---	---	---	ND	4.28	64	ND	4.75	220
1/11/21	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	---	---
3/10/21	ND	12.24	67	ND	1.29	150	---	---	---	ND	6.90	32	---	---	---	---	---	---	---	---	---	ND	9.32	73	ND	3.23	160
6/17/21	ND (ND)	1.41	77 (79)	ND	2.56	130	---	---	---	ND	3.72	38	---	---	---	---	---	---	---	---	---	ND	3.13	68	ND	0.90	69
7/15/21	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	2.62	---	---	---	---
9/20/21	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	7.08	44	---	---	---
12/28-29/2021	ND	4.23	36	ND	3.85	83	---	---	---	ND	4.08	35	---	---	---	---	---	---	---	---	---	ND	1.31	53	ND	0.34	100
2/10/22	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3/31-4/01/2022	ND	2.74	35	ND	2.08	53	---	---	---	ND	1.05	34	---	---	---	---	---	---	---	---	---	ND	4.06	40	ND	1.51	200
7/05-06/2022	ND (ND)	0.93	49 (50)	ND	4.88	63	---	---	---	ND	3.04	31	---	---	---	---	---	---	---	---	---	ND	0.87	73	ND	1.07	**300**
9/28-29/2022	**14**	2.30	37	ND	2.78	62	---	---	---	ND	3.71	40	---	---	---	---	---	---	---	---	---	ND	3.10	67	ND	0.99	150
% Decrease	88.3%	---	---	100%	---	---	---	---	---	100%	---	---	100%	---	---	---	---	---	---	---	---	100%	---	---	100%	---	---
Sulfolane Criterion (µg/L)	**Non-detect - <10**																										
Sulfate Criterion (mg/L)	**250**																										

	MW-18			MW-19S			MW-19D			MW-19DD			MW-20S			MW-20D			MW-21D			MW-22D			MW-23D		
Date	**Sulfolane**	**DO**	**Sulfate**	**Sulfolane**	**DO**	**Sulfate**	**Sulfolane**	**DO**	**Sulfate**	**Sulfolane**	**DO**	**Sulfate**	**Sulfolane**	**DO**	**Sulfate**	**Sulfolane**	**DO**	**Sulfate**	**Sulfolane**	**DO**	**Sulfate**	**Sulfolane**	**DO**	**Sulfate**	**Sulfolane**	**DO**	**Sulfate**
9/11-13/17	**2,200**	1.16	---	**29**	1.64	---	**5,900**	0.60	---	ND	3.82	---	**63**	1.50	---	**12,000**	0.45	---	ND	6.08	---	ND	7.76	---	ND	2.87	---
9/21/17	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12/19-20/17	**660**	0.67	37	ND	10.32	44	**3,200**	0.38	73	ND	7.16	22	**49**	4.04	45	**12,000**	0.52	43	ND	7.58	22	ND	5.74	12	ND	2.48	20
1/25/18	**2,300**	0.74	34	---	---	--	ND	0.77	74	---	---	--	ND	3.76	45	**10,000**	1.61	41	---	---	--	---	---	--	---	---	--
2/27/18	**2,000**	0.39	33	---	---	--	ND	0.57	51	---	---	--	ND	---	52	**9,300**	0.61	46	---	---	--	---	---	--	---	---	--
3/28-29/18	**980**	0.71	34	ND	9.45	43	**290**	0.47	54	ND	6.27	26		2.03	57 (58)	**10,000**	2.00	51	ND	4.13	22	ND	5.32	9.4	ND	3.03	19
6/19-21/18	**14**	3.13	39	ND	11.14	36	**750**	1.08	63	ND	5.25	23	ND	4.80	56	**6,600**	3.99	58	ND	4.22	21	ND	12.97	8.0	ND	5.72	20
9/18-20/18	ND (ND)	0.67	49 (49)	ND	12.84	44	**170 (150)**	0.86	77 (77)	ND	6.89	20	ND	9.28	63	**22 (34)**	5.37	80 (81)	ND	5.77	21	ND	7.65	6.8	ND	3.12	21
12/17-18/18	ND	2.28	53	ND	8.95	47	**440**	3.02	83	---	---	---	ND	9.77	48	**19**	5.32	90	---	---	---	---	---	---	---	---	---
3/25-26/19	ND	1.09	47	ND	14.18	47	**350**	0.24	88	---	---	---	ND	12.20	62	ND (ND)	10.35	89 (84)	---	---	---	---	---	---	---	---	---
6/24-26/19	ND (ND)	0.97	45 (44)	ND	10.42	62	**98 (73)**	0.17	100 (94)	ND	7.27	23	ND	20.73	72	ND (ND)	10.86	94 (94)	ND	5.66	24	ND	9.20	8.3	ND	6.39	30
9/23-24/19	ND	1.60	43	ND	9.79	58	ND	8.39	110	---	---	---	ND	6.06	66	ND (ND)	6.26	84 (79)	---	---	---	---	---	---	---	---	---
12/3-4/19	ND	0.93	49	ND	11.40	62	**92**	0.57	92	---	---	---	ND	7.23	64	ND (ND)	6.15	84 (80)	---	---	---	---	---	---	---	---	---
1/2/20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2/13/20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3/5-6/20	ND	7.25	71	ND	13.19	68	ND	9.24	100	---	---	---	ND	9.74	33	ND (ND)	4.20	88 (91)	---	---	---	---	---	---	---	---	---
4/2/20	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6/1-2/20	ND	6.08	61	ND	11.36	72	ND	15.02	92	---	---	---	ND	11.51	36	ND (ND)	7.29	83 (85)	---	---	---	---	---	---	---	---	---
9/9-10/20	ND	0.56	50	ND	10.46	72	ND	13.48	84	---	---	---	ND	7.91	110	ND (ND)	2.79	83 (80)	---	---	---	---	---	---	---	---	---
10/23/20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12/10/20	ND	0.12	58	ND	9.18	74	ND	12.69	120	---	---	---	ND	7.41	57	ND (ND)	1.65	80 (80)	---	---	---	---	---	---	---	---	---
1/11/21	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3/10/21	ND	8.42	55	ND	12.27	79	ND	7.40	130	---	---	---	ND	21.91	80	ND (ND)	11.71	80 (82)	---	---	---	---	---	---	---	---	---
6/17/21	ND	0.75	58	ND	11.95	80	ND	2.39	130	---	---	---	ND	8.61	100	ND	7.21	78	---	---	---	---	---	---	---	---	---
7/15/21	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
9/20/21	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12/28-29/2021	ND	5.49	55	ND	7.27	90	ND	1.35	120	---	---	---	ND	6.84	97	ND	4.87	73	---	---	---	---	---	---	---	---	---
2/10/22	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3/31-4/01/2022	ND	5.10	55	ND	11.18	89	ND	4.57	110	---	---	---	ND	9.39	100	ND	5.56	72	---	---	---	---	---	---	---	---	---
7/05-06/2022	ND	1.42	58	ND	9.11	94	ND	0.36	100	---	---	---	ND	8.22	97	ND	4.74	71	---	---	---	---	---	---	---	---	---
9/28-29/2022	ND	1.46	65	ND	8.22	87	ND	1.86	97	---	---	---	ND	12.70	76	---	9.20	71	---	---	---	---	---	---	---	---	---
% Decrease	100%	---	---	100%	---	---	100%	---	---	---	---	---	100%	---	---	100%	---	---	---	---	---	---	---	---	---	---	---
Sulfolane Criterion (µg/L)	**Non-detect - <10**																										
Sulfate Criterion (mg/L)	**250**																										

Notes

1) Concentrations of sulfolane reported in micrograms per liter (µg/L), equivalent to parts per billion (ppb).
2) DO - dissolved oxygen.
3) Concentrations of dissolved oxygen and sulfate reported in milligrams per liter (mg/L), equivalent to parts per million (ppm).
4) (---) - Not sampled.
5) ND - Concentration not detected above reporting limit.
6) Concentrations shown in parenthesis are from duplicate sample.
7) % Decrease of sulfolane is the most recent sampling event relative to highest reported concentration since the pre-system startup event (9/11-13/17).
8) Sulfolane criterion established by EGLE-Oil, Gas, and Minerals Division (EGLE-OGMD).
9) Sulfate criterion - Part 201 Residential Generic Cleanup Criteria and Screening Levels (Part 201 Residential GCCSLs), dated January 10, 2018, per R299.44 (Table 1) of the Michigan Administrative Code.
10) Concentrations that are highlighted and bold exceed cleanup criteria.

TABLE 2
SULFOLANE GROUNDWATER ANALYTICAL SUMMARY & CLEANUP CRITERIA COMPARISON
Hartland 36 Gas Plant
Portion of E1/2 of NW1/4 of Section 36, T03N-R06E,
Hartland Township, Livingston County, Michigan
ECT Project #13-0685-2000

Sample Location	Screened Interval (ft bgs)	Sample Date																									
		11/4-5/15	1/27/16	6/3/2016	8/3-4/16	9/21-22/16	10/12/16	11/3/16	12/8/16	12/21-23/16	2/14/17	3/14-16/2017	4/27/17; 5/1/17	5/11/2017	5/30-31/17	6/19-21/17	9/11-13/17	9/21/2017	12/19-20/2017	1/25/2018	2/27/2018	3/28-29/2018	6/19-21/2018	9/18-20/2018	12/17-18/2018	3/25-26/19	6/24-26/2019
MW-1	20.1 - 25.1	ND	ND	ND	---	ND	---	---	---	---	---	ND	---	---	---	ND	ND	---	ND	---	---	ND	ND	ND	---	---	ND
MW-2	19.1 - 24.1	ND	ND	ND	---	ND	---	---	---	---	---	ND	---	---	---	ND	ND	---	ND	---	---	ND	ND	ND	---	---	ND
MW-2D	27.7 - 29.7	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	ND	ND	---	ND	---	---	ND	ND	ND	---	---	ND
MW-3	22.0 - 27.0	ND	---	ND	---	ND	---	---	---	ND	---	ND	---	---	---	ND	ND	---	ND	---	---	ND	ND	ND	---	---	ND
MW-3D	30.0 - 32.0	---	---	---	---	---	---	---	---	---	ND	ND	---	---	---	ND	ND	---	ND	---	---	ND	ND	ND	---	---	ND
MW-4	23.1 - 28.1	ND	ND	ND	ND	ND	ND	ND	---	ND	---	ND	---	---	---	ND	ND	---	ND	---	---	ND	ND	ND	---	---	ND
MW-5	18.0 - 23.0	ND	ND	ND	---	ND	ND	---	---	ND	---	ND	---	---	---	ND	ND	---	ND	---	---	ND	ND	ND	---	---	ND
MW-6	25.4 - 30.4	ND	ND	ND	ND	ND	ND	ND	---	ND	---	ND	---	---	ND	ND	ND	---	ND	---	---	ND	ND	ND	---	---	ND
MW-6D	39.4 - 44.4	---	---	---	ND	ND	ND	ND	---	ND	---	ND	---	---	ND	ND	ND	---	ND	---	---	ND	ND	ND	---	---	ND
MW-7	25.2 - 30.2	**880**	**44**	**510**	ND	**210**	---	---	---	ND	---	ND	---	---	---	**12**	ND	---	ND	---	---	ND	ND	ND	ND	ND	ND
MW-7D	39.2 - 44.2	---	---	---	---	---	---	---	**3,100**	---	---	**3,000**	---	---	---	**2,600**	**1,900**	---	**4,100**	---	**1,200**	**820**	**180**	**170**	**300**	**1,700**	**510**
MW-8	24.6 - 29.6	---	---	---	ND	ND	---	---	---	ND	---	ND	---	---	---	ND	ND	---	ND	---	---	ND	ND	ND	---	---	ND
MW-9	23.6 - 28.6	---	---	---	ND	ND	---	---	---	ND	---	ND	---	---	---	ND	ND	---	ND	---	---	ND	ND	ND	---	---	ND
MW-10	21.2 - 26.2	---	---	---	ND	ND	---	---	---	ND	---	ND	---	---	---	ND	ND	---	ND	---	---	ND	ND	ND	---	---	ND
MW-11	21.7 - 26.7	---	---	---	ND	ND	---	---	---	ND	---	ND	---	---	---	ND	ND	---	ND	---	---	ND	ND	ND	---	---	ND
MW-12S	20.5 - 25.5	---	---	---	ND	ND	ND	ND	---	ND	---	ND	---	---	ND	ND	ND	---	ND	---	---	ND	ND	ND	---	---	ND
MW-12D	39.7 - 44.7	---	---	---	ND	ND	ND	ND	---	ND	---	ND	---	---	ND	ND	ND	---	ND	---	---	ND	ND	ND	---	---	ND
MW-13	19.1 - 24.1	---	---	---	**6,600**	**8,800**	---	---	---	**3,500**	---	**5,100**	**7,000**	**3,700**	**97**	ND	ND	---	ND	---	---	ND	ND	ND	ND	ND	ND
MW-13D	27.7 - 29.7	---	---	---	---	---	---	**7,800**	---	**8,300**	---	**5,400**	**6,900**	**1,100**	**420**	**290**	**730**	---	**480**	**400**	ND	ND	**180**	ND	ND	**16**	**19**
MW-14S	18.6 - 23.6	---	---	---	---	---	---	46	---	**460**	---	**540**	**490**	**160**	**520**	**94**	**120**	---	**100**	**85**	ND	ND	**52**	ND	ND	ND	ND
MW-14D	36.7 - 41.7	---	---	---	---	---	---	**7,900**	---	**10,000**	---	**7,600**	**9,800**	**8,600**	**8,200**	**7,800**	**7,700**	---	**7,100**	**5,400**	**4,000**	**5,100**	**2,800**	**680**	**290**	ND	**110**
MW-15	19.3 - 24.3	---	---	---	ND	ND	---	---	---	ND	---	ND	---	---	---	ND	ND	---	ND	---	---	ND	ND	ND	---	---	ND
MW-15D	37.9 - 42.9	---	---	---	---	---	---	---	---	---	**4,600**	**3,200**	---	---	---	**670**	**230**	---	ND	---	---	ND	ND	ND	ND	ND	ND
MW-15DD	50 - 55	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**33**	**48**	ND	---	---	ND	ND	ND	---	---	ND
MW-16	19.5 - 24.5	---	---	---	ND	ND	---	---	---	ND	---	ND	ND	ND	ND	ND	ND	---	ND	---	---	ND	ND	ND	---	---	ND
MW-16D	31.4 - 33.4	---	---	---	---	---	---	---	---	---	ND	ND	---	---	---	ND	ND	---	ND	---	---	ND	ND	ND	---	---	ND
MW-17S	19.9 - 24.9	---	---	---	---	---	---	**3,900**	---	**5,100**	---	**3,000**	**---**	---	---	**5,300**	**3,100**	---	**2,400**	**510**	**460**	**52**	**55**	**32**	ND	ND	ND
MW-17D	35.4 - 37.4	---	---	---	---	---	---	**440**	---	**510**	---	**400**	**---**	---	---	**390**	**400**	---	**51**	ND	ND	ND	ND	ND	ND	ND	ND
MW-18	19.9 - 24.9	---	---	---	---	---	---	**6,800**	---	**6,800**	---	**4,300**	**---**	**2,100**	**4,800**	**3,800**	**2,200**	---	**660**	**2,300**	**2,000**	**980**	**14**	ND	ND	ND	ND
MW-19S	22.6 - 27.6	---	---	---	---	---	---	**2,700**	---	**1,500**	---	**1,300**	**---**	---	---	**24**	**33**	---	ND	---	---	ND	ND	ND	ND	ND	ND
MW-19D	43.0 - 48.0	---	---	---	---	---	---	**7,000**	---	**7,600**	---	**4,300**	**---**	---	---	**7,000**	**5,900**	---	**3,200**	ND	ND	**290**	**750**	**170**	**440**	**350**	**98**
MW-19DD	57 - 62	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	ND	---	---	ND	ND	ND	---	---	ND
MW-20S	17.8 - 22.8	---	---	---	---	---	---	---	**25**	---	---	**97**	**---**	---	---	**160**	**63**	---	**49**	ND	ND	ND	ND	ND	ND	ND	ND
MW-20D	31.0 - 33.0	---	---	---	---	---	---	---	**8,700**	---	---	**8,300**	**---**	---	---	**11,000**	**12,000**	---	**12,000**	**10,000**	**9,300**	**10,000**	**6,600**	**34**	**19**	ND	ND
MW-21D	52.3 - 57.3	---	---	---	---	---	---	---	ND	---	---	ND	---	---	---	ND	ND	---	ND	---	---	ND	ND	ND	---	---	ND
MW-22D	36.4 - 41.4	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	ND	ND	---	ND	---	---	ND	ND	ND	---	---	ND
MW-23D	28.1 - 30.1	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	ND	ND	---	ND	---	---	ND	ND	ND	---	---	ND
EGLE-OGMD Cleanup Criteria		**Non-detect - <10 µg/L**																									
Collection Method		LF		Bailer/PP		LF																					

Notes

1) ft bgs - Feet below ground surface.
2) Collection method - Grab, peristaltic pump (PP), low flow (LF), Bailer.
3) µg/L - Micrograms per liter, equivalent to parts per billion (ppb).
4) (---) - Not sampled.
5) ND - Concentration not detected above reporting limit.
6) Sulfolane concentrations included on the table are for the higher concentration from samples submitted for duplicate analysis.
7) Cleanup criteria for sulfolane established by EGLE-Oil, Gas, and Minerals Division (EGLE-OGMD).
8) Concentrations that are highlighted and bold exceed cleanup criteria.
9) MW-7 sampled on 8/11/2016 for the 8/3-4/2016 sample event.

TABLE 2
SULFOLANE GROUNDWATER ANALYTICAL SUMMARY & CLEANUP CRITERIA COMPARISON
Hartland 36 Gas Plant
SE/NE/NW Section 36, T03N-R06E,
Hartland Township, Livingston County, Michigan
ECT Project #13-0685-2000

Sample Location	Screened Interval (ft bgs)	9/23-24/2019	12/3-4/19	1/2/2020	2/13/2020	3/5-6/2020	4/2/2020	6/1-2/2020	9/9-10/2020	10/23/2020	12/10/2020	1/11/2021	3/10/2021	6/17/2021	7/15/2021	9/20/2021	12/28-29/21	2/10/2022	3/31-4/01/2022	7/05-06/2022	9/28-29/2022
MW-1	20.1 - 25.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	19.1 - 24.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-2D	27.7 - 29.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-3	22.0 - 27.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-3D	30.0 - 32.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-4	23.1 - 28.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-5	18.0 - 23.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-6	25.4 - 30.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-6D	39.4 - 44.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-7	25.2 - 30.2	ND	ND	---	---	ND	---	ND	ND	---	ND	---	ND	ND	---	---	ND	---	ND	ND	ND
MW-7D	39.2 - 44.2	**140**	**1,200**	**2,400**	**1,500**	ND	**330**	ND	ND	---	ND	---	ND	**74**	**97**	ND	ND	---	ND	ND	ND
MW-8	24.6 - 29.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-9	23.6 - 28.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-10	21.2 - 26.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-11	21.7 - 26.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-12S	20.5 - 25.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-12D	39.7 - 44.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-13	19.1 - 24.1	ND	ND	---	---	ND	---	ND	ND	---	ND	---	ND	ND	---	---	ND	---	ND	ND	ND
MW-13D	27.7 - 29.7	ND	**37**	---	---	ND	**16**	ND	ND	---	**99**	**110**	ND	**93**	**45**	ND	**21**	ND	ND	ND	ND
MW-14S	18.6 - 23.6	ND	ND	---	---	ND	---	ND	ND	---	ND	---	ND	ND	---	---	ND	---	ND	ND	**14**
MW-14D	36.7 - 41.7	**71**	**71**	---	---	ND	ND	ND	ND	---	ND	---	ND	ND	---	---	ND	---	ND	ND	ND
MW-15	19.3 - 24.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-15D	37.9 - 42.9	ND	ND	---	---	ND	---	ND	ND	---	ND	---	ND	ND	---	---	ND	---	ND	ND	ND
MW-15DD	50 - 55	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-16	19.5 - 24.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-16D	31.4 - 33.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-17S	19.9 - 24.9	ND	ND	---	---	ND	---	ND	**190**	**91**	ND	ND	ND	ND	ND	ND	ND	---	ND	ND	ND
MW-17D	35.4 - 37.4	ND	ND	---	---	ND	---	ND	ND	---	ND	---	ND	ND	---	---	ND	---	ND	ND	ND
MW-18	19.9 - 24.9	ND	ND	---	---	ND	---	ND	ND	---	ND	---	ND	ND	---	---	ND	---	ND	ND	ND
MW-19S	22.6 - 27.6	ND	ND	---	---	ND	---	ND	ND	---	ND	---	ND	ND	---	---	ND	---	ND	ND	ND
MW-19D	43.0 - 48.0	ND	**92**	---	---	ND	ND	ND	ND	---	ND	---	ND	ND	---	---	ND	---	ND	ND	ND
MW-19DD	57 - 62	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-20S	17.8 - 22.8	ND	ND	---	---	ND	---	ND	ND	---	ND	---	ND	ND	---	---	ND	---	ND	ND	ND
MW-20D	31.0 - 33.0	ND	ND	---	---	ND	---	ND	ND	---	ND	---	ND	ND	---	---	ND	---	ND	ND	---
MW-21D	52.3 - 57.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-22D	36.4 - 41.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-23D	28.1 - 30.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
EGLE-OGMD Cleanup Criteria																					
Collection Method									Bailer		LF	Bailer		LF							

Notes

1) ft bgs - Feet below ground surface.
2) Collection method - Grab, peristaltic pump (PP), low flow (LF), Bailer.
3) µg/L - Micrograms per liter, equivalent to parts per billion (ppb).
4) (---) - Not sampled.
5) ND - Concentration not detected above reporting limit.
6) Sulfolane concentrations included on the table are for the higher concentration from samples submitted for duplicate analysis.
7) Cleanup criteria for sulfolane established by EGLE-Oil, Gas, and Minerals Division (EGLE-OGMD).
8) Concentrations that are highlighted and bold exceed cleanup criteria.
9) MW-7 sampled on 8/11/2016 for the 8/3-4/2016 sample event.

APPENDIX C

LABORATORY ANALYTICAL REPORT

14-Oct-2022

Nick Summerland
Lambda Energy Resources
1510 Thomas Rd
Kalkaska, MI 49646

Re: **Lambda (Hartland 36 Gas Plant)** Work Order: **22100010**

Dear Nick,

ALS Environmental received 14 samples on 30-Sep-2022 09:00 PM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

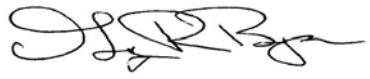
Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 28.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,



Electronically approved by: Tim Gates

Gary Byar
Project Manager

ALS Group, USA

Date: 14-Oct-22

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant)
Work Order: **22100010**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
22100010-01	MW-7s	Groundwater		9/28/2022 10:30	9/30/2022 21:00	☐
22100010-02	MW-7d	Groundwater		9/28/2022 11:20	9/30/2022 21:00	☐
22100010-03	MW-19d	Groundwater		9/28/2022 12:00	9/30/2022 21:00	☐
22100010-04	MW-19s	Groundwater		9/28/2022 12:50	9/30/2022 21:00	☐
22100010-05	MW-18	Groundwater		9/28/2022 13:45	9/30/2022 21:00	☐
22100010-06	MW-20s	Groundwater		9/28/2022 14:40	9/30/2022 21:00	☐
22100010-07	MW-20d	Groundwater		9/28/2022 15:30	9/30/2022 21:00	☐
22100010-08	MW-15d	Groundwater		9/28/2022 16:30	9/30/2022 21:00	☐
22100010-09	MW-17d	Groundwater		9/29/2022 08:35	9/30/2022 21:00	☐
22100010-10	MW-17s	Groundwater		9/29/2022 09:20	9/30/2022 21:00	☐
22100010-11	MW-14d	Groundwater		9/29/2022 10:15	9/30/2022 21:00	☐
22100010-12	MW-14s	Groundwater		9/29/2022 11:10	9/30/2022 21:00	☐
22100010-13	MW-13d	Groundwater		9/29/2022 12:15	9/30/2022 21:00	☐
22100010-14	MW-13s	Groundwater		9/29/2022 13:20	9/30/2022 21:00	☐

ALS Group, USA

Date: *14-Oct-2022*

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant)
Work Order: 22100010
Sample ID: MW-7s
Lab ID: 22100010-01
Collection Date: 9/28/2022 10:30 AM
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3510 10/5/22 15:38	Analyst: **EEW**
Sulfolane	ND		10	µg/L	1	10/10/2022 09:16 PM
Surr: 2-Fluorobiphenyl	*41.8*		*41-96*	*%REC*	1	10/10/2022 09:16 PM
Surr: 4-Terphenyl-d14	*56.6*		*49-107*	*%REC*	1	10/10/2022 09:16 PM
Surr: Nitrobenzene-d5	*41.9*		*41-95*	*%REC*	1	10/10/2022 09:16 PM
SULFATE			**A4500-SO4 E-11**			Analyst: **AML**
Sulfate	**230**		**4.0**	**mg/L**	4	10/4/2022 12:24 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant) **Work Order:** 22100010
Sample ID: MW-7d **Lab ID:** 22100010-02
Collection Date: 9/28/2022 11:20 AM **Matrix:** GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3510 10/5/22 15:38	Analyst: **EEW**
Sulfolane	ND		10	µg/L	1	10/10/2022 09:40 PM
Surr: 2-Fluorobiphenyl	*42.9*		*41-96*	*%REC*	1	10/10/2022 09:40 PM
Surr: 4-Terphenyl-d14	*50.7*		*49-107*	*%REC*	1	10/10/2022 09:40 PM
Surr: Nitrobenzene-d5	*42.2*		*41-95*	*%REC*	1	10/10/2022 09:40 PM
SULFATE			**A4500-SO4 E-11**			Analyst: **AML**
Sulfate	**15**		**1.0**	**mg/L**	1	10/4/2022 12:25 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant) **Work Order:** 22100010
Sample ID: MW-19d **Lab ID:** 22100010-03
Collection Date: 9/28/2022 12:00 PM **Matrix:** GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3510 10/5/22 15:38	Analyst: **EEW**
Sulfolane	ND		9.9	µg/L	1	10/10/2022 10:03 PM
Surr: 2-Fluorobiphenyl	*59.5*		*41-96*	*%REC*	1	10/10/2022 10:03 PM
Surr: 4-Terphenyl-d14	*72.2*		*49-107*	*%REC*	1	10/10/2022 10:03 PM
Surr: Nitrobenzene-d5	*58.9*		*41-95*	*%REC*	1	10/10/2022 10:03 PM
SULFATE			**A4500-SO4 E-11**			Analyst: **AML**
Sulfate	**97**		**4.0**	**mg/L**	4	10/4/2022 12:26 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant) **Work Order:** 22100010
Sample ID: MW-19s **Lab ID:** 22100010-04
Collection Date: 9/28/2022 12:50 PM **Matrix:** GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3510 10/5/22 15:38	Analyst: **EEW**
Sulfolane	ND		10	µg/L	1	10/10/2022 10:27 PM
Surr: 2-Fluorobiphenyl	*43.4*		*41-96*	*%REC*	1	10/10/2022 10:27 PM
Surr: 4-Terphenyl-d14	*52.5*		*49-107*	*%REC*	1	10/10/2022 10:27 PM
Surr: Nitrobenzene-d5	*44.5*		*41-95*	*%REC*	1	10/10/2022 10:27 PM
SULFATE			**A4500-SO4 E-11**			Analyst: **AML**
Sulfate	**87**		**4.0**	**mg/L**	4	10/4/2022 12:27 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant) **Work Order:** 22100010
Sample ID: MW-18 **Lab ID:** 22100010-05
Collection Date: 9/28/2022 01:45 PM **Matrix:** GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3510 10/5/22 15:38	Analyst: **EEW**
Sulfolane	ND		11	µg/L	1	10/10/2022 10:51 PM
Surr: 2-Fluorobiphenyl	*55.5*		*41-96*	*%REC*	1	10/10/2022 10:51 PM
Surr: 4-Terphenyl-d14	*70.2*		*49-107*	*%REC*	1	10/10/2022 10:51 PM
Surr: Nitrobenzene-d5	*53.7*		*41-95*	*%REC*	1	10/10/2022 10:51 PM
SULFATE			**A4500-SO4 E-11**			Analyst: **AML**
Sulfate	**65**		**1.0**	**mg/L**	1	10/4/2022 12:15 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant) **Work Order:** 22100010
Sample ID: MW-20s **Lab ID:** 22100010-06
Collection Date: 9/28/2022 02:40 PM **Matrix:** GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3510 10/5/22 15:38	Analyst: **EEW**
Sulfolane	ND		10	µg/L	1	10/10/2022 11:14 PM
Surr: 2-Fluorobiphenyl	*43.2*		*41-96*	*%REC*	1	10/10/2022 11:14 PM
Surr: 4-Terphenyl-d14	*58.3*		*49-107*	*%REC*	1	10/10/2022 11:14 PM
Surr: Nitrobenzene-d5	*42.4*		*41-95*	*%REC*	1	10/10/2022 11:14 PM
SULFATE			**A4500-SO4 E-11**			Analyst: **AML**
Sulfate	**76**		**1.0**	**mg/L**	1	10/4/2022 12:15 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant) **Work Order:** 22100010
Sample ID: MW-20d **Lab ID:** 22100010-07
Collection Date: 9/28/2022 03:30 PM **Matrix:** GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SULFATE			**A4500-SO4 E-11**			Analyst: **AML**
Sulfate	**71**		**1.0**	**mg/L**	1	10/4/2022 12:16 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant) **Work Order:** 22100010
Sample ID: MW-15d **Lab ID:** 22100010-08
Collection Date: 9/28/2022 04:30 PM **Matrix:** GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3510 10/5/22 15:38	Analyst: **EEW**
Sulfolane	ND		10	µg/L	1	10/10/2022 11:38 PM
Surr: 2-Fluorobiphenyl	*48.8*		*41-96*	*%REC*	1	10/10/2022 11:38 PM
Surr: 4-Terphenyl-d14	*63.3*		*49-107*	*%REC*	1	10/10/2022 11:38 PM
Surr: Nitrobenzene-d5	*47.8*		*41-95*	*%REC*	1	10/10/2022 11:38 PM
SULFATE			**A4500-SO4 E-11**			Analyst: **AML**
Sulfate	**40**		**1.0**	**mg/L**	1	10/4/2022 12:16 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant) **Work Order:** 22100010
Sample ID: MW-17d **Lab ID:** 22100010-09
Collection Date: 9/29/2022 08:35 AM **Matrix:** GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3510 10/5/22 15:38	Analyst: **EEW**
Sulfolane	ND		10	µg/L	1	10/11/2022 12:01 AM
Surr: 2-Fluorobiphenyl	*47.1*		*41-96*	*%REC*	1	10/11/2022 12:01 AM
Surr: 4-Terphenyl-d14	*68.9*		*49-107*	*%REC*	1	10/11/2022 12:01 AM
Surr: Nitrobenzene-d5	*46.7*		*41-95*	*%REC*	1	10/11/2022 12:01 AM
SULFATE			**A4500-SO4 E-11**			Analyst: **AML**
Sulfate	**150**		**4.0**	**mg/L**	4	10/4/2022 12:27 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant) **Work Order:** 22100010
Sample ID: MW-17s **Lab ID:** 22100010-10
Collection Date: 9/29/2022 09:20 AM **Matrix:** GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3510 10/5/22 15:38	Analyst: **EEW**
Sulfolane	ND		10	µg/L	1	10/11/2022 12:25 AM
Surr: 2-Fluorobiphenyl	*45.8*		*41-96*	*%REC*	1	10/11/2022 12:25 AM
Surr: 4-Terphenyl-d14	*59.1*		*49-107*	*%REC*	1	10/11/2022 12:25 AM
Surr: Nitrobenzene-d5	*44.3*		*41-95*	*%REC*	1	10/11/2022 12:25 AM
SULFATE			**A4500-SO4 E-11**			Analyst: **AML**
Sulfate	**67**		**1.0**	**mg/L**	1	10/13/2022 04:43 PM
Sulfate	**67**		**1.0**	**mg/L**	1	10/4/2022 12:17 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant) **Work Order:** 22100010
Sample ID: MW-14d **Lab ID:** 22100010-11
Collection Date: 9/29/2022 10:15 AM **Matrix:** GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3510 10/5/22 15:38	Analyst: **EEW**
Sulfolane	ND		10	µg/L	1	10/11/2022 12:49 AM
Surr: 2-Fluorobiphenyl	*46.5*		*41-96*	*%REC*	1	10/11/2022 12:49 AM
Surr: 4-Terphenyl-d14	*49.3*		*49-107*	*%REC*	1	10/11/2022 12:49 AM
Surr: Nitrobenzene-d5	*45.2*		*41-95*	*%REC*	1	10/11/2022 12:49 AM
SULFATE			**A4500-SO4 E-11**			Analyst: **AML**
Sulfate	**62**		**1.0**	**mg/L**	1	10/4/2022 12:18 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant) **Work Order:** 22100010
Sample ID: MW-14s **Lab ID:** 22100010-12
Collection Date: 9/29/2022 11:10 AM **Matrix:** GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3510 10/5/22 15:38	Analyst: **EEW**
Sulfolane	**14**		**9.9**	**µg/L**	1	10/11/2022 01:12 AM
Surr: 2-Fluorobiphenyl	*42.4*		*41-96*	*%REC*	1	10/11/2022 01:12 AM
Surr: 4-Terphenyl-d14	*50.7*		*49-107*	*%REC*	1	10/11/2022 01:12 AM
Surr: Nitrobenzene-d5	*41.1*		*41-95*	*%REC*	1	10/11/2022 01:12 AM
SULFATE			**A4500-SO4 E-11**			Analyst: **AML**
Sulfate	**37**		**1.0**	**mg/L**	1	10/4/2022 12:18 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant) **Work Order:** 22100010
Sample ID: MW-13d **Lab ID:** 22100010-13
Collection Date: 9/29/2022 12:15 PM **Matrix:** GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3510 10/5/22 15:38	Analyst: **EEW**
Sulfolane	ND		10	µg/L	1	10/11/2022 01:35 AM
Surr: 2-Fluorobiphenyl	*60.9*		*41-96*	*%REC*	1	10/11/2022 01:35 AM
Surr: 4-Terphenyl-d14	*72.0*		*49-107*	*%REC*	1	10/11/2022 01:35 AM
Surr: Nitrobenzene-d5	*61.0*		*41-95*	*%REC*	1	10/11/2022 01:35 AM
SULFATE			**A4500-SO4 E-11**			Analyst: **AML**
Sulfate	**470**		**10**	**mg/L**	10	10/4/2022 12:34 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant) **Work Order:** 22100010
Sample ID: MW-13s **Lab ID:** 22100010-14
Collection Date: 9/29/2022 01:20 PM **Matrix:** GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3510 10/5/22 15:38	Analyst: **EEW**
Sulfolane	ND		10	µg/L	1	10/11/2022 01:59 AM
Surr: 2-Fluorobiphenyl	*44.4*		*41-96*	*%REC*	1	10/11/2022 01:59 AM
Surr: 4-Terphenyl-d14	*57.2*		*49-107*	*%REC*	1	10/11/2022 01:59 AM
Surr: Nitrobenzene-d5	*45.4*		*41-95*	*%REC*	1	10/11/2022 01:59 AM
SULFATE			**A4500-SO4 E-11**			Analyst: **AML**
Sulfate	**100**		**4.0**	**mg/L**	4	10/4/2022 12:28 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client:	Lambda Energy Resources
Project:	Lambda (Hartland 36 Gas Plant)
Work Order:	22100010

Case Narrative

Batch R354924, Method A4500-SO4 E-11, Sample 22100010-14B MS: The MS recovery was below the lower control limit. The corresponding result in the parent sample may be biased low for this analyte:

Batch R354924, Method A4500-SO4 E-11, Sample 22100010-01B MS: The MS recovery was outside of the control limit; however, the result in the parent sample is greater than 4x the spike amount. No qualification is required for this analyte:

Batch R355677, Method A4500-SO4 E-11, Sample 22100531-07D MS: MS and MSD are for an unrelated sample

Batch R355677, Method A4500-SO4 E-11, Sample 22100531-01D MS: MS and MSD are for an unrelated sample

Batch R354924, Method A4500-SO4 E-11, Sample 22100010-14B MSD: The MSD recovery was below the lower control limit. The corresponding result in the parent sample may be biased low for this analyte:

Batch R354924, Method A4500-SO4 E-11, Sample 22100010-01B MSD: The MSD recovery was outside of the control limit; however, the result in the parent sample is greater than 4x the spike amount. No qualification is required for this analyte:

Batch 204303, Method SW846 8270D: The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

QC BATCH REPORT

Batch ID: **204303** Instrument ID **SVMS9** Method: **SW846 8270D**

MBLK Sample ID: **SBLKW1-204303-204303** Units: **µg/L** Analysis Date: **10/10/2022 08:04 PM**

Client ID: Run ID: **SVMS9_221010A** SeqNo: **8885693** Prep Date: **10/5/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfolane	ND	10								
Surr: 2-Fluorobiphenyl	*32.27*	0	*50*	0	*64.5*	*41-96*	0			
Surr: 4-Terphenyl-d14	*33.97*	0	*50*	0	*67.9*	*49-107*	0			
Surr: Nitrobenzene-d5	*32.88*	0	*50*	0	*65.8*	*41-95*	0			

LCS Sample ID: **SLCSW1-204303-204303** Units: **µg/L** Analysis Date: **10/10/2022 08:28 PM**

Client ID: Run ID: **SVMS9_221010A** SeqNo: **8885694** Prep Date: **10/5/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfolane	*52.07*	10	100	0	52.1	17-91	0			
Surr: 2-Fluorobiphenyl	*32.62*	0	*50*	0	*65.2*	*41-96*	0			
Surr: 4-Terphenyl-d14	*35.68*	0	*50*	0	*71.4*	*49-107*	0			
Surr: Nitrobenzene-d5	*33.76*	0	*50*	0	*67.5*	*41-95*	0			

LCSD Sample ID: **SLCSDW1-204303-204303** Units: **µg/L** Analysis Date: **10/10/2022 08:52 PM**

Client ID: Run ID: **SVMS9_221010A** SeqNo: **8885695** Prep Date: **10/5/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfolane	57.68	10	100	0	57.7	17-91	52.07	10.2	30	
Surr: 2-Fluorobiphenyl	*34.37*	0	*50*	0	*68.7*	*41-96*	32.62	*5.22*	*40*	
Surr: 4-Terphenyl-d14	*37.2*	0	*50*	0	*74.4*	*49-107*	35.68	*4.17*	*40*	
Surr: Nitrobenzene-d5	*34.52*	0	*50*	0	*69*	*41-95*	33.76	*2.23*	*40*	

The following samples were analyzed in this batch:

22100010-01A	22100010-02A	22100010-03A
22100010-04A	22100010-05A	22100010-06A
22100010-08A	22100010-09A	22100010-10A
22100010-11A	22100010-12A	22100010-13A
22100010-14A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Lambda Energy Resources
Work Order: 22100010
Project: Lambda (Hartland 36 Gas Plant)

QC BATCH REPORT

Batch ID: **R354924** Instrument ID **GALLERY** Method: **A4500-SO4 E-11**

MBLK Sample ID: **MBLK-R354924** Units: **mg/L** Analysis Date: **10/4/2022 12:21 PM**
Client ID: Run ID: **GALLERY_221004A** SeqNo: **8863445** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	ND	1.0								

MS Sample ID: **22100010-01B MS** Units: **mg/L** Analysis Date: **10/4/2022 12:24 PM**
Client ID: **MW-7s** Run ID: **GALLERY_221004A** SeqNo: **8863453** Prep Date: DF: **4**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	264.5	4.0	50	232.8	63.3	88-124	0			SO

MS Sample ID: **22100010-14B MS** Units: **mg/L** Analysis Date: **10/4/2022 12:29 PM**
Client ID: **MW-13s** Run ID: **GALLERY_221004A** SeqNo: **8863467** Prep Date: DF: **4**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	141.4	4.0	50	101.6	79.6	88-124	0			S

MSD Sample ID: **22100010-01B MSD** Units: **mg/L** Analysis Date: **10/4/2022 12:25 PM**
Client ID: **MW-7s** Run ID: **GALLERY_221004A** SeqNo: **8863454** Prep Date: DF: **4**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	265.4	4.0	50	232.8	65.2	88-124	264.5	0.366	10	SO

MSD Sample ID: **22100010-14B MSD** Units: **mg/L** Analysis Date: **10/4/2022 12:36 PM**
Client ID: **MW-13s** Run ID: **GALLERY_221004A** SeqNo: **8863483** Prep Date: DF: **4**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	141.3	4.0	50	101.6	79.5	88-124	141.4	0.0269	10	S

LCS1 Sample ID: **LCS1-R354924** Units: **mg/L** Analysis Date: **10/4/2022 12:21 PM**
Client ID: Run ID: **GALLERY_221004A** SeqNo: **8863443** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	10.33	1.0	10	0	103	90-117	0			

LCS2 Sample ID: **LCS2-R354924** Units: **mg/L** Analysis Date: **10/4/2022 12:10 PM**
Client ID: Run ID: **GALLERY_221004A** SeqNo: **8863406** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	50.25	1.0	50	0	100	88-124	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Lambda Energy Resources
Work Order: 22100010
Project: Lambda (Hartland 36 Gas Plant)

QC BATCH REPORT

Batch ID: **R354924** Instrument ID **GALLERY** Method: **A4500-SO4 E-11**

The following samples were analyzed in this batch:

22100010-01B	22100010-02B	22100010-03B
22100010-04B	22100010-05B	22100010-06B
22100010-07B	22100010-08B	22100010-09B
22100010-10B	22100010-11B	22100010-12B
22100010-13B	22100010-14B	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Lambda Energy Resources
Work Order: 22100010
Project: Lambda (Hartland 36 Gas Plant)

QC BATCH REPORT

Batch ID: **R355677** Instrument ID **GALLERY** Method: **A4500-SO4 E-11**

MBLK Sample ID: **MBLK-R355677** Units: **mg/L** Analysis Date: **10/13/2022 03:59 PM**
Client ID: Run ID: **GALLERY_221013A** SeqNo: **8897916** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	ND	1.0								

MBLK Sample ID: **MBLK-2-R355677** Units: **mg/L** Analysis Date: **10/13/2022 04:20 PM**
Client ID: Run ID: **GALLERY_221013A** SeqNo: **8897985** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	ND	1.0								

MS Sample ID: **22100412-01B MS** Units: **mg/L** Analysis Date: **10/13/2022 04:15 PM**
Client ID: Run ID: **GALLERY_221013A** SeqNo: **8897969** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	78.54	1.0	50	28.77	99.6	88-124	0			

MS Sample ID: **22100263-04A MS** Units: **mg/L** Analysis Date: **10/13/2022 04:16 PM**
Client ID: Run ID: **GALLERY_221013A** SeqNo: **8897972** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	55.58	1.0	50	1.222	109	88-124	0			

MS Sample ID: **22100531-07D MS** Units: **mg/L** Analysis Date: **10/13/2022 06:04 PM**
Client ID: Run ID: **GALLERY_221013A** SeqNo: **8898158** Prep Date: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	786.7	10	50	794	-14.6	88-124	0			SO

MS Sample ID: **22100531-01D MS** Units: **mg/L** Analysis Date: **10/13/2022 06:33 PM**
Client ID: Run ID: **GALLERY_221013A** SeqNo: **8898188** Prep Date: DF: **30**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	1940	30	50	2231	-583	88-124	0			SO

MSD Sample ID: **22100412-01B MSD** Units: **mg/L** Analysis Date: **10/13/2022 04:09 PM**
Client ID: Run ID: **GALLERY_221013A** SeqNo: **8897948** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	80.85	1.0	50	28.77	104	88-124	78.54	2.89	10	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Lambda Energy Resources
Work Order: 22100010
Project: Lambda (Hartland 36 Gas Plant)

QC BATCH REPORT

Batch ID: **R355677** Instrument ID **GALLERY** Method: **A4500-SO4 E-11**

MSD Sample ID: **22100263-04A MSD** Units: **mg/L** Analysis Date: **10/13/2022 04:16 PM**
Client ID: Run ID: **GALLERY_221013A** SeqNo: **8897971** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	51.95	1.0	50	1.222	101	88-124	55.58	6.75	10	

MSD Sample ID: **22100531-07D MSD** Units: **mg/L** Analysis Date: **10/13/2022 06:05 PM**
Client ID: Run ID: **GALLERY_221013A** SeqNo: **8898160** Prep Date: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	759.9	10	50	794	-68.2	88-124	786.7	3.47	10	SO

MSD Sample ID: **22100531-01D MSD** Units: **mg/L** Analysis Date: **10/13/2022 06:35 PM**
Client ID: Run ID: **GALLERY_221013A** SeqNo: **8898195** Prep Date: DF: **30**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	2050	30	50	2231	-361	88-124	1940	5.55	10	SO

LCS1 Sample ID: **LCS1-R355677** Units: **mg/L** Analysis Date: **10/13/2022 03:58 PM**
Client ID: Run ID: **GALLERY_221013A** SeqNo: **8897915** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	10.84	1.0	10	0	108	90-117	0			

LCS1 Sample ID: **LCS1-2-R355677** Units: **mg/L** Analysis Date: **10/13/2022 04:19 PM**
Client ID: Run ID: **GALLERY_221013A** SeqNo: **8897984** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	10	1.0	10	0	100	90-117	0			

LCS2 Sample ID: **LCS2-2-R355677** Units: **mg/L** Analysis Date: **10/13/2022 04:09 PM**
Client ID: Run ID: **GALLERY_221013A** SeqNo: **8897950** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	50.36	1.0	50	0	101	88-124	0			

LCS2 Sample ID: **LCS2-R355677** Units: **mg/L** Analysis Date: **10/13/2022 04:42 PM**
Client ID: Run ID: **GALLERY_221013A** SeqNo: **8898033** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	52.75	1.0	50	0	106	88-124	0			

The following samples were analyzed in this batch: 22100010-10B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client:	Lambda Energy Resources
Project:	Lambda (Hartland 36 Gas Plant)
WorkOrder:	**22100010**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Analyte accreditation is not offered
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
µg/L	Micrograms per Liter
mg/L	Milligrams per Liter

ALS Group, USA
Holland, Michigan

Sample Receipt Checklist

Client Name: **LAMBDA-KAL** Date/Time Received: **30-Sep-22 21:00**

Work Order: **22100010** Received by: **DS**

Checklist completed by Diane Shaw (eSignature) 01-Oct-22 (Date) Reviewed by: Tim Gates (eSignature) 03-Oct-22 (Date)

Matrices: Groundwater
Carrier name: Courier

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☐	No ☑	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	4.0/5.0 c	IR3	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	10/1/2022 9:18:05 AM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes: Amber SVOC jar for sample "MW-20d" broken in transit.

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

22100010

LAMBDA-KAL: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant)

Chain of Custody Form

ALS Group USA, Corp

Work Order

				Parameter/Method Request for Analysis	
Co		rder		A	Sulfate
		ame	ECT, Inc.	B	Sulfolane
Send Report To	Jeremy Lewandowski	Invoice Attn	Accounts Payable	C	
Project Name	Hartland 36 Gas Plant	Project #	130685	D	
Address	3125 Sovereign Drive, Suite 9C	Address	3125 Sovereign Drive, Suite 9C	E	
				F	
City State Zip	Lansing, MI 48911	City State Zip	Lansing, MI 48911	G	
Phone	5172729200	Phone	5172729200	H	
e-Mail Address	Jlewandowski@ectinc.com	e-Mail Address	Michigan-invoices@lambdaenergyllc.com	I	

#	Sample Description	Date	Time	Matrix	Preservative	# Bottles	A	B	C	D	E	F	G	H	I	J	Sample Notes
1	MW-7s	9/28/22	10:30	GW	-	2	X	X									
2	MW-7d	9/28/22	11:20	GW	-	2											
3	MW-19d	9/28/22	12:00	GW	-	2											
4	MW-19s	9/28/22	12:50	GW	-	2											
5	MW-18	9/28/22	13:45	GW	-	2											
6	MW-20s	9/28/22	14:40	GW	-	2											
7	MW-20d	9/28/22	15:30	GW	-	2											
8	MW-15d	9/28/22	16:30	GW	-	2											
9	MW-17d	9/29/22	8:35	GW	-	2											
10	MW-17s	9/29/22	9:20	GW	-	2											

Notes: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035

Required Turnaround Time: ✓ Std 10 Wk days ___ 5 Wk days ___ 2 Wk days ___ 24 hr

Results Due:

Relinquished by	Date	Time	Received by	Date	Time
Ty Martin	9/30/22	8:30		9/30/22	9:53
QS	9/30/22	2100		9/30/22	2100

NOTES:

QC Reporting Level: (check box below)

- Level II: Standard QC
- Level III: Std QC + Raw data
- Level IV: SW846 CLP-Like

Other: IR3 4.0c

ALS Group USA, Corp | 3352 128th Ave | | Holland Michigan 49424 | TEL. (616) 399-6070

TG

22100010

LAMBDA-KAL: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant)

Chain of Custody Form

ALS Group USA, Corp

Work Order: _____

				Parameter/Method Request for Analysis	
Compa		Company Name	ECT, Inc.	A	Sulfate
Send Report To	Jeremy Lewandowski	Invoice Attn	Accounts Payable	B	Sulfolane
Project Name	Hartland 36 Gas Plant	Project #	130685	C	
Address	3125 Sovereign Drive, Suite 9C	Address	3125 Sovereign Drive, Suite 9C	D	
				E	
				F	
City State Zip	Lansing, MI 48911	City State Zip	Lansing, MI 48911	G	
Phone	5172729200	Phone	5172729200	H	
e-Mail Address	Jlewandowski@ectinc.com	e-Mail Address	Michigan-invoices@lambdaenergy.com	I	
				J	

#	Sample Description	Date	Time	Matrix	Preservative	# Bottles	A	B	C	D	E	F	G	H	I	J	Sample Notes
1	MW-14d	9/29/22	10:15	GW	-	2	X	X									
2	MW-14s	9/29/22	11:10	GW	-	2	↓	↓									
3	MW-13d	9/29/22	12:15	GW	-	2											
4	MW-13s	9/29/22	13:20	GW	-	2											
5																	
6																	
7																	
8																	
9																	
10																	

Notes: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035

Required Turnaround Time: _____
✓ Std 10 Wk days ___ 5 Wk days ___ 2 Wk days ___ 24 hr

Results Due:

Relinquised by	Date	Time	Received by	Date	Time
Ty Martin	9/30/22	8:30		9/30/22	9:53
QS	9/30/22	2100	QSQC	9/30/22	2100

NOTES:

QC Reporting Level: (check box below):

- Level II: Standard QC
- Level III: Std QC + Raw data
- Level IV: SW846 CLP-Like

Other: IR3
4.0°C

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APPENDIX D

LOW-FLOW SAMPLING FIELD FORMS

CLIENT:	**Merit Energy Co.**	**Monitoring Location:**	
LOCATION:	**13390 Lone Tree Road**	**Sample ID:**	MW-7s
	Hartland Township, Michigan	**Well Type:**	2" PVC
PROJECT:	**130685.2000**		

INSPECTION

Label on well?	(YES) NO REMEDIED	Is cement pad in good repair?	(YES) NO REMEDIED
Is reference mark visible?	(YES) NO REMEDIED	Is protective casing locked and in good repair?	(YES) NO REMEDIED
Standing water present?	YES (NO) REMEDIED	Is inner cap in place and properly sealing well?	(YES) NO REMEDIED
Indication of surface runoff in well?	YES (NO) REMEDIED	Is well casing in visibly good repair?	(YES) NO REMEDIED

Repair Notes:

STATIC WATER LEVEL

Date: 9/28/22 Time: 9:58

Top of Casing Elevation:
Depth to Water: 24.99
Elevation of Water:

Measured with: ELECTRONIC TAPE CHALKED TAPE OTHER
Well depth verified? YES NO

WELL PURGING

Purge Method: (PERISTALTIC) BLADDER OTHER______ Date: 9/28/22 Start Time: 9:59

Measured Well Depth: 33.00 Screen Length: ______ Depth to Screen Midpoint: ______

Time	Water Level (feet)	Drawdown (feet)	Pumping Rate (ml/min)	Temp (°C)	Spec Cond. (umho/cm)	Diss Oxy (mg/l)	pH (S.U.)	ORP (mV)	Turbidity (NTU)
10:15	25.09	.10	300	11.4	1.028	3.15	6.91	92.7	2.13
10:20	25.09	.10	300	11.3	1.041	3.20	6.96	86.9	2.06
10:25	25.09	.10	300	11.3	1.049	3.22	7.00	83.9	1.91
Stabilization Criteria:				+/- 3%	+/- 3%	+/- 10% (if > 0.5 mg/l)	+/- 0.1 Units	+/- 10 mV	+/- 10 % (if > 5 NTU)

Total Volume Purged (gal): 2

Stabilization Criteria Reference Doc. USEPA EQASOP-GW 001 Rev #3, January 19, 2010

FIELD ANALYSIS

Time:	10:25	
Temperature:	11.3	deg. C
Specific Conductance:	1.049	umhos/cm
Dissolved Oxygen:	3.22	mg/L
pH:	7.00	S.U.
ORP:	83.9	mV
Turbidity:	1.91	NTU

CALIBRATION CHECK

	Standard (conc.)	Reading	Mark if Recalibrated
Specific Cond.:		umhos/cm	
Dissolved Oxygen:		mg/L	
pH:		S.U.	
Eh:		mV	
Turbidity:		NTU	

SAMPLE COLLECTION

Time: 10:30 Sample Duplicate ?: NO
Appearance of Sample: Clear, no odor Sample Method: LF

NO./BOTTLES:	SIZE:	TYPE:	FILTERED:	PRESERVATIVE:	PARAMETER:
1	1000 ml	[glass] plastic	yes [no]	[None], HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	Sulfolane
1	125 ml	glass [plastic]	yes [no]	[None], HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	Sulfate
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	

SAMPLING PERSONNEL

Name (SIGNATURE): [signature] Chain of Custody No.______
Name (SIGNATURE):

CLIENT: Merit Energy Co.
LOCATION: 13390 Lone Tree Road
Hartland Township, Michigan
PROJECT: 130685.2000

Monitoring Location: ____
Sample ID: MW-7d
Well Type: 2" PVC

INSPECTION

Label on well?	(YES) NO REMEDIED
Is reference mark visible?	(YES) NO REMEDIED
Standing water present?	YES (NO) REMEDIED
Indication of surface runoff in well?	YES (NO) REMEDIED
Is cement pad in good repair?	(YES) NO REMEDIED
Is protective casing locked and in good repair?	(YES) NO REMEDIED
Is inner cap in place and properly sealing well?	(YES) NO REMEDIED
Is well casing in visibly good repair?	(YES) NO REMEDIED

Repair Notes:

STATIC WATER LEVEL

Date: 9/28/22 Time: 10:44

Top of Casing Elevation:
Depth to Water: 25.38'
Elevation of Water: ____

Measured with: (ELECTRONIC TAPE) CHALKED TAPE OTHER
Well depth verified? YES (NO)

WELL PURGING

Purge Method: (PERISTALTIC) BLADDER OTHER____
Date: 9/28/22 Start Time: 10:45

Measured Well Depth: 48.50' Screen Length: ____ Depth to Screen Midpoint: ____

Time	Water Level (feet)	Drawdown (feet)	Pumping Rate (ml/min)	Temp (°C)	Spec Cond. (umho/cm)	Diss Oxy (mg/l)	pH (S.U.)	ORP (mV)	Turbidity (NTU)
11:00	25.41	-.03	306	11.1	.4028	8.93	7.52	84.8	3.41
11:05	25.41	-.03	300	11.0	.4070	8.97	7.53	84.2	3.11
11:10	25.41	-.03	300	11.1	.4093	9.00	7.53	83.9	2.69
11:15	24.41	-.03	300	11.1	.4110	9.01	7.53	83.7	2.19
Stabilization Criteria:				+/- 3%	+/- 3%	+/- 10% (if > 0.5 mg/l)	+/- 0.1 Units	+/- 10 mV	+/- 10 % (if > 5 NTU)

Total Volume Purged (gal): 2

Stabilization Criteria Reference Doc. USEPA EQASOP-GW 001 Rev #3, January 19, 2010

FIELD ANALYSIS

Time:	11:15	
Temperature:	11.1	deg. C
Specific Conductance:	.4110	umhos/cm
Dissolved Oxygen:	9.01	mg/L
pH:	7.53	S.U.
ORP:	83.7	mV
Turbidity:	2.19	NTU

CALIBRATION CHECK

	Standard (conc.)	Reading		Mark if Recalibrated
Specific Cond.:			umhos/cm	
Dissolved Oxygen:			mg/L	
pH:			S.U.	
Eh:			mV	
Turbidity:			NTU	

SAMPLE COLLECTION

Time: 11:20
Appearance of Sample: Clear, no odor
Sample Duplicate ?: NO
Sample Method: LF

NO./BOTTLES:	SIZE:	TYPE:	FILTERED:	PRESERVATIVE:	PARAMETER:
1	1000 ml	**glass** plastic	yes **no**	**None**, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	Sulfolane
1	125 ml	glass **plastic**	yes **no**	**None**, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	Sulfate
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	

SAMPLING PERSONNEL

Name (SIGNATURE): [signature]
Chain of Custody No. ____
Name (SIGNATURE): ____

CLIENT: Merit Energy Co.
LOCATION: 13390 Lone Tree Road, Hartland Township, Michigan
PROJECT: 130685.2000

Monitoring Location:
Sample ID: MW- 13S
Well Type: 2" PVC

INSPECTION

Label on well?	(YES) NO REMEDIED	
Is reference mark visible?	(YES) NO REMEDIED	
Standing water present?	YES (NO) REMEDIED	
Indication of surface runoff in well?	YES (NO) REMEDIED	
Is cement pad in good repair?	(YES) NO REMEDIED	
Is protective casing locked and in good repair?	(YES) NO REMEDIED	
Is inner cap in place and properly sealing well?	(YES) NO REMEDIED	
Is well casing in visibly good repair?	(YES) NO REMEDIED	

Repair Notes:

STATIC WATER LEVEL

Date: 9/29/22 Time: 12:49

Top of Casing Elevation:
Depth to Water: 21.59
Elevation of Water:

Measured with: (ELECTRONIC TAPE) CHALKED TAPE OTHER
Well depth verified? YES (NO)

WELL PURGING

Purge Method: (PERISTALTIC) BLADDER OTHER
Date: 9/29/22 Start Time: 12:50

Measured Well Depth: 30.30 Screen Length: Depth to Screen Midpoint:

Time	Water Level (feet)	Drawdown (feet)	Pumping Rate (ml/min)	Temp (°C)	Spec Cond. (umho/cm)	Diss Oxy (mg/l)	pH (S.U.)	ORP (mV)	Turbidity (NTU)
13:05	21.74	-.15	300	11.3	1.039	3.26	6.91	90.6	2.71
13:10	21.74	-.15	300	11.3	1.046	3.28	6.93	94.7	2.63
13:15	21.74	-.15	300	11.3	1.051	3.31	6.95	96.4	2.68
Stabilization Criteria:				+/- 3%	+/- 3%	+/- 10% (if > 0.5 mg/l)	+/- 0.1 Units	+/- 10 mV	+/- 10 % (if > 5 NTU)

Total Volume Purged (gal): 2

Stabilization Criteria Reference Doc. USEPA EQASOP-GW 001 Rev #3, January 19, 2010

FIELD ANALYSIS

Time: 13:15
Temperature: 11.3 deg. C
Specific Conductance: 1.051 umhos/cm
Dissolved Oxygen: 3.31 mg/L
pH: 6.95 S.U.
ORP: 96.4 mV
Turbidity: 2.68 NTU

CALIBRATION CHECK

	Standard (conc.)	Reading	Mark if Recalibrated
Specific Cond.:		umhos/cm	
Dissolved Oxygen:		mg/L	
pH:		S.U.	
Eh:		mV	
Turbidity:		NTU	

SAMPLE COLLECTION

Time: 13:20
Appearance of Sample: Clear, no odor
Sample Duplicate ?: No
Sample Method: LF

NO./BOTTLES:	SIZE:	TYPE:	FILTERED:	PRESERVATIVE:	PARAMETER:
1	1000 ml	**glass** plastic	yes **no**	**None**, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	Sulfolane
1	125 ml	glass **plastic**	yes **no**	**None**, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	Sulfate
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	

SAMPLING PERSONNEL

Name (SIGNATURE): [signature]
Chain of Custody No.
Name (SIGNATURE):

CLIENT: Merit Energy Co.
LOCATION: 13390 Lone Tree Road, Hartland Township, Michigan
PROJECT: 130685.2000

Monitoring Location:
Sample ID: MW-13d
Well Type: 2" PVC

INSPECTION

Question	Answer
Label on well?	YES
Is reference mark visible?	YES
Standing water present?	NO
Indication of surface runoff in well?	NO
Is cement pad in good repair?	YES
Is protective casing locked and in good repair?	YES
Is inner cap in place and properly sealing well?	YES
Is well casing in visibly good repair?	YES

Repair Notes:

STATIC WATER LEVEL

Date: 9/29/22 Time: 11:50

Top of Casing Elevation:
Depth to Water: 20.91
Elevation of Water:

Measured with: ELECTRONIC TAPE (circled) / CHALKED TAPE / OTHER
Well depth verified? NO

WELL PURGING

Purge Method: PERISTALTIC (circled) / BLADDER / OTHER
Date: 9/29/22 Start Time: 11:35

Measured Well Depth: ? Screen Length: Depth to Screen Midpoint:

Time	Water Level (feet)	Drawdown (feet)	Pumping Rate (ml/min)	Temp (°C)	Spec Cond. (umho/cm)	Diss Oxy (mg/l)	pH (S.U.)	ORP (mV)	Turbidity (NTU)
11:50	21.21	-.30	300	11.6	1.017	1.30	7.12	27.9	1.13
11:55	21.21	-.30	300	11.5	1.022	1.22	7.10	22.1	1.10
12:00	21.21	-.30	300	11.6	1.026	1.16	7.09	18.4	.76
12:05	21.21	-.30	300	11.6	1.030	1.13	7.09	16.3	.91
12:10	21.21	-.30	300	11.7	1.032	1.11	7.08	15.1	.87
Stabilization Criteria:				+/- 3%	+/- 3%	+/- 10% (if > 0.5 mg/l)	+/- 0.1 Units	+/- 10 mV	+/- 10 % (if > 5 NTU)

Total Volume Purged (gal): 3

Stabilization Criteria Reference Doc. USEPA EQASOP-GW 001 Rev #3, January 19, 2010

FIELD ANALYSIS

Parameter	Value	Units
Time	12:10	
Temperature	11.7	deg. C
Specific Conductance	1.032	umhos/cm
Dissolved Oxygen	1.11	mg/L
pH	7.08	S.U.
ORP	15.1	mV
Turbidity	.87	NTU

CALIBRATION CHECK

	Standard (conc.)	Reading	Mark if Recalibrated
Specific Cond.:		umhos/cm	
Dissolved Oxygen:		mg/L	
pH:		S.U.	
Eh:		mV	
Turbidity:		NTU	

SAMPLE COLLECTION

Time: 12:15
Appearance of Sample: Clear, no odor
Sample Duplicate ?: NO
Sample Method: TM

NO./BOTTLES	SIZE	TYPE	FILTERED	PRESERVATIVE	PARAMETER
1	1000 ml	glass	no	None	Sulfolane
1	125 ml	plastic	no	None	Sulfate
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	

SAMPLING PERSONNEL

Name (SIGNATURE): [signature]
Chain of Custody No.
Name (SIGNATURE):

CLIENT: Merit Energy Co.
LOCATION: 13390 Lone Tree Road
Hartland Township, Michigan
PROJECT: 130685.2000

Monitoring Location: ____
Sample ID: MW-14S
Well Type: 2" PVC

INSPECTION

Label on well?	**YES** NO REMEDIED	Is cement pad in good repair?	**YES** NO REMEDIED
Is reference mark visible?	**YES** NO REMEDIED	Is protective casing locked and in good repair?	**YES** NO REMEDIED
Standing water present?	YES **NO** REMEDIED	Is inner cap in place and properly sealing well?	**YES** NO REMEDIED
Indication of surface runoff in well?	YES **NO** REMEDIED	Is well casing in visibly good repair?	**YES** NO REMEDIED

Repair Notes:

STATIC WATER LEVEL

Date: 9/29/22 Time: 10:39

Top of Casing Elevation:
Depth to Water: 20.75
Elevation of Water: ____

Measured with: **ELECTRONIC TAPE** CHALKED TAPE OTHER
Well depth verified? YES **NO**

WELL PURGING

Purge Method: **PERISTALTIC** BLADDER OTHER____
Date: 9/29/22 Start Time: 10:40

Measured Well Depth: 26.52
Screen Length: ____
Depth to Screen Midpoint: ____

Time	Water Level (feet)	Drawdown (feet)	Pumping Rate (ml/min)	Temp (°C)	Spec Cond. (umho/cm)	Diss Oxy (mg/l)	pH (S.U.)	ORP (mV)	Turbidity (NTU)
10:55	26.60	-.08	200	11.2	1.031	2.36	7.01	54.4	2.87
11:00	26.60	-.08	200	11.1	1.026	2.32	7.03	50.1	2.61
11:05	26.60	-.08	200	11.2	1.024	2.30	7.03	48.3	2.02
Stabilization Criteria:				+/- 3%	+/- 3%	+/- 10% (if > 0.5 mg/l)	+/- 0.1 Units	+/- 10 mV	+/- 10 % (if > 5 NTU)

Total Volume Purged (gal): 1.5

Stabilization Criteria Reference Doc. USEPA EQASOP-GW 001 Rev #3, January 19, 2010

FIELD ANALYSIS

Time:	11:05	
Temperature:	11.2	deg. C
Specific Conductance:	1.024	umhos/cm
Dissolved Oxygen:	2.30	mg/L
pH:	7.03	S.U.
ORP:	48.3	mV
Turbidity:	2.02	NTU

CALIBRATION CHECK

	Standard (conc.)	Reading		Mark if Recalibrated
Specific Cond.:			umhos/cm	
Dissolved Oxygen:			mg/L	
pH:			S.U.	
Eh:			mV	
Turbidity:			NTU	

SAMPLE COLLECTION

Time: 11:10
Appearance of Sample: Clear, no odor
Sample Duplicate ?: NO
Sample Method: Low Flow

NO./BOTTLES:	SIZE:	TYPE:	FILTERED:	PRESERVATIVE:	PARAMETER:
1	1000 ml	**glass** plastic	yes **no**	**None**, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	Sulfolane
1	125 ml	glass **plastic**	yes **no**	**None**, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	Sulfate
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	

SAMPLING PERSONNEL

Name (SIGNATURE): [signature]
Chain of Custody No.____
Name (SIGNATURE):

CLIENT: Merit Energy Co.
LOCATION: 13390 Lone Tree Road
Hartland Township, Michigan
PROJECT: 130685.2000

Monitoring Location: ____
Sample ID: MW-14d
Well Type: 2" PVC

INSPECTION

Label on well?	(YES) NO REMEDIED	Is cement pad in good repair?	(YES) NO REMEDIED
Is reference mark visible?	(YES) NO REMEDIED	Is protective casing locked and in good repair?	(YES) NO REMEDIED
Standing water present?	YES (NO) REMEDIED	Is inner cap in place and properly sealing well?	(YES) NO REMEDIED
Indication of surface runoff in well?	YES (NO) REMEDIED	Is well casing in visibly good repair?	(YES) NO REMEDIED

Repair Notes:

STATIC WATER LEVEL

Date: 9/29/22 Time: 9:44

Top of Casing Elevation:
Depth to Water: 20.58
Elevation of Water:

Measured with: (ELECTRONIC TAPE) CHALKED TAPE OTHER
Well depth verified? YES (NO)

WELL PURGING

Purge Method: (PERISTALTIC) BLADDER OTHER____
Date: 9/29/22 Start Time: 9:45

Measured Well Depth: 45.11 Screen Length: ____ Depth to Screen Midpoint: ____

Time	Water Level (feet)	Drawdown (feet)	Pumping Rate (ml/min)	Temp (°C)	Spec Cond. (umho/cm)	Diss Oxy (mg/l)	pH (S.U.)	ORP (mV)	Turbidity (NTU)
10:00	20.61	-.03	200	11.4	.91	2.86	7.16	47.1	2.08
10:05	20.61	-.03	200	11.5	.93	2.81	7.17	42.3	2.07
10:10	20.61	-.03	200	11.5	.90	2.78	7.17	37.4	2.11
Stabilization Criteria:				+/- 3%	+/- 3%	+/- 10% (if > 0.5 mg/l)	+/- 0.1 Units	+/- 10 mV	+/- 10 % (if > 5 NTU)

Total Volume Purged (gal): 1.25

Stabilization Criteria Reference Doc. USEPA EQASOP-GW 001 Rev #3, January 19, 2010

FIELD ANALYSIS

Time: 10:10
Temperature: 11.5 deg. C
Specific Conductance: .90 umhos/cm
Dissolved Oxygen: 2.78 mg/L
pH: 7.17 S.U.
ORP: 37.4 mV
Turbidity: 2.11 NTU

CALIBRATION CHECK

	Standard (conc.)	Reading	Mark if Recalibrated
Specific Cond.:		umhos/cm	
Dissolved Oxygen:		mg/L	
pH:		S.U.	
Eh:		mV	
Turbidity:		NTU	

SAMPLE COLLECTION

Time: 10:15
Appearance of Sample: Clear, no odor
Sample Duplicate ?: NO
Sample Method: LF

NO./BOTTLES:	SIZE:	TYPE:	FILTERED:	PRESERVATIVE:	PARAMETER:
1	1000 ml	**glass** plastic	yes **no**	**None**, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	Sulfolane
1	125 ml	glass **plastic**	yes **no**	**None**, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	Sulfate
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	

SAMPLING PERSONNEL

Name (SIGNATURE): Ty [signature]
Chain of Custody No.____
Name (SIGNATURE):

CLIENT:	**Merit Energy Co.**	**Monitoring Location:**	
LOCATION:	**13390 Lone Tree Road**	**Sample ID:**	**MW-** 15 d
	Hartland Township, Michigan	**Well Type:**	2" PVC
PROJECT:	**130685.2000**		

INSPECTION

Label on well?	(YES) NO REMEDIED	Is cement pad in good repair?	(YES) NO REMEDIED
Is reference mark visible?	(YES) NO REMEDIED	Is protective casing locked and in good repair?	(YES) NO REMEDIED
Standing water present?	YES (NO) REMEDIED	Is inner cap in place and properly sealing well?	(YES) NO REMEDIED
Indication of surface runoff in well?	YES (NO) REMEDIED	Is well casing in visibly good repair?	(YES) NO REMEDIED

Repair Notes:

STATIC WATER LEVEL

Date: 9/28/22 Time: 15:58

Top of Casing Elevation:

Depth to Water: 20.46'

Elevation of Water:

Measured with: (ELECTRONIC TAPE) CHALKED TAPE OTHER

Well depth verified? YES (NO)

WELL PURGING

Purge Method: (PERISTALTIC) BLADDER OTHER______ Date: 9/28/22 Start Time: 16:00

Measured Well Depth: 46.00 Screen Length: ______ Depth to Screen Midpoint: ______

Time	Water Level (feet)	Drawdown (feet)	Pumping Rate (ml/min)	Temp (°C)	Spec Cond. (umho/cm)	Diss Oxy (mg/l)	pH (S.U.)	ORP (mV)	Turbidity (NTU)
16:15	20.49	-.03	200	11.4	.78	3.61	7.10	81.4	3.79
16:20	20.49	-.03	200	11.3	.73	3.67	7.13	76.2	3.61
16:25	20.49	-.03	200	11.4	.70	3.71	7.15	73.6	3.50
Stabilization Criteria:				+/- 3%	+/- 3%	+/- 10% (if > 0.5 mg/l)	+/- 0.1 Units	+/- 10 mV	+/- 10 % (if > 5 NTU)

Total Volume Purged (gal): 1.5

Stabilization Criteria Reference Doc. USEPA EQASOP-GW 001 Rev #3, January 19, 2010

FIELD ANALYSIS

Time:	16:25	
Temperature:	11.4	deg. C
Specific Conductance:	.70	umhos/cm
Dissolved Oxygen:	3.71	mg/L
pH:	7.15	S.U.
ORP:	73.6	mV
Turbidity:	3.50	NTU

CALIBRATION CHECK

	Standard (conc.)	Reading		Mark if Recalibrated
Specific Cond.:			umhos/cm	
Dissolved Oxygen:			mg/L	
pH:			S.U.	
Eh:			mV	
Turbidity:			NTU	

SAMPLE COLLECTION

Time: 16:30

Appearance of Sample: Clear, no odor

Sample Duplicate ?: No

Sample Method: LF

NO./BOTTLES:	SIZE:	TYPE:	FILTERED:	PRESERVATIVE:	PARAMETER:
1	1000 ml	**glass** plastic	yes **no**	**None**, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	Sulfolane
1	125 ml	glass **plastic**	yes **no**	**None**, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	Sulfate
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	

SAMPLING PERSONNEL

Name (SIGNATURE): [signature]

Chain of Custody No.______

Name (SIGNATURE):

CLIENT: Merit Energy Co.
LOCATION: 13390 Lone Tree Road
Hartland Township, Michigan
PROJECT: 130685.2000

Monitoring Location: ____
Sample ID: MW-17S
Well Type: 2" PVC

INSPECTION

Label on well? (YES) NO REMEDIED
Is reference mark visible? (YES) NO REMEDIED
Standing water present? YES (NO) REMEDIED
Indication of surface runoff in well? YES (NO) REMEDIED
Repair Notes:

Is cement pad in good repair? (YES) NO REMEDIED
Is protective casing locked and in good repair? (YES) NO REMEDIED
Is inner cap in place and properly sealing well? (YES) NO REMEDIED
Is well casing in visibly good repair? (YES) NO REMEDIED

STATIC WATER LEVEL

Date: 9/29/22 Time: 8:49

Top of Casing Elevation: ____
Depth to Water: 19.43
Elevation of Water: ____

Measured with: (ELECTRONIC TAPE) CHALKED TAPE OTHER
Well depth verified? YES (NO)

WELL PURGING

Date: 9/29/22 Start Time: 8:50

Purge Method: (PERISTALTIC) BLADDER OTHER____

Measured Well Depth: ? Screen Length: ____ Depth to Screen Midpoint: ____

Time	Water Level (feet)	Drawdown (feet)	Pumping Rate (ml/min)	Temp (°C)	Spec Cond. (umho/cm)	Diss Oxy (mg/l)	pH (S.U.)	ORP (mV)	Turbidity (NTU)
9:05	19.48	-.05	200	11.3	.67	3.17	7.22	36.4	1.96
9:10	19.48	-.05	200	11.3	.65	3.13	7.20	30.2	1.74
9:15	19.48	-.05	200	11.3	.64	3.10	7.19	26.5	1.82
Stabilization Criteria:				+/- 3%	+/- 3%	+/- 10% (if > 0.5 mg/l)	+/- 0.1 Units	+/- 10 mV	+/- 10 % (if > 5 NTU)

Total Volume Purged (gal): 1.5

Stabilization Criteria Reference Doc. USEPA EQASOP-GW 001 Rev #3, January 19, 2010

FIELD ANALYSIS

Time: 9:15
Temperature: 11.3 deg. C
Specific Conductance: .64 umhos/cm
Dissolved Oxygen: 3.10 mg/L
pH: 7.19 S.U.
ORP: 26.5 mV
Turbidity: 1.82 NTU

CALIBRATION CHECK

	Standard (conc.)	Reading	Mark if Recalibrated
Specific Cond.:		umhos/cm	
Dissolved Oxygen:		mg/L	
pH:		S.U.	
Eh:		mV	
Turbidity:		NTU	

SAMPLE COLLECTION

Time: 9:20
Appearance of Sample: Clear, no odor
Sample Duplicate ?: NO
Sample Method: LF

NO./BOTTLES:	SIZE:	TYPE:	FILTERED:	PRESERVATIVE:	PARAMETER:
1	1000 ml	**glass** plastic	yes **no**	**None**, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	Sulfolane
1	125 ml	glass **plastic**	yes **no**	**None**, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	Sulfate
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	

SAMPLING PERSONNEL

Chain of Custody No. ____
Name (SIGNATURE): [signature] Name (SIGNATURE): ____

CLIENT: Merit Energy Co.
LOCATION: 13390 Lone Tree Road
Hartland Township, Michigan
PROJECT: 130685.2000

Monitoring Location: ____
Sample ID: MW-17d
Well Type: 2" PVC

INSPECTION

Label on well?	YES (circled) NO REMEDIED	Is cement pad in good repair?	YES (circled) NO REMEDIED
Is reference mark visible?	YES (circled) NO REMEDIED	Is protective casing locked and in good repair?	YES (circled) NO REMEDIED
Standing water present?	YES NO (circled) REMEDIED	Is inner cap in place and properly sealing well?	YES (circled) NO REMEDIED
Indication of surface runoff in well?	YES NO (circled) REMEDIED	Is well casing in visibly good repair?	YES (circled) NO REMEDIED

Repair Notes:

STATIC WATER LEVEL

Date: 9/29/22 Time: 8:04

Top of Casing Elevation:
Depth to Water: 20.25'
Elevation of Water: ____

Measured with: ELECTRONIC TAPE (circled) CHALKED TAPE OTHER
Well depth verified? YES NO (circled)

WELL PURGING

Purge Method: PERISTALTIC (circled) BLADDER OTHER____
Date: 9/29/22 Start Time: 8:05

Measured Well Depth: 40.78' Screen Length: ____ Depth to Screen Midpoint: ____

Time	Water Level (feet)	Drawdown (feet)	Pumping Rate (ml/min)	Temp (°C)	Spec Cond. (umho/cm)	Diss Oxy (mg/l)	pH (S.U.)	ORP (mV)	Turbidity (NTU)
8:20	20.29	-.04	200	11.6	.79	.91	7.28	38.4	3.41
8:25	20.29	-.04	200	11.7	.77	.96	7.30	36.1	3.32
8:30	20.29	-.04	200	11.5	.73	.99	7.31	33.7	3.06
Total Volume Purged (gal): 1.25		Stabilization Criteria:		+/- 3%	+/- 3%	+/- 10% (if > 0.5 mg/l)	+/- 0.1 Units	+/- 10 mV	+/- 10 % (if > 5 NTU)

Stabilization Criteria Reference Doc. USEPA EQASOP-GW 001 Rev #3, January 19, 2010

FIELD ANALYSIS

Time:	8:30	
Temperature:	11.5	deg. C
Specific Conductance:	.73	umhos/cm
Dissolved Oxygen:	.99	mg/L
pH:	7.31	S.U.
ORP:	33.7	mV
Turbidity:	3.06	NTU

CALIBRATION CHECK

	Standard (conc.)	Reading		Mark if Recalibrated
Specific Cond.:			umhos/cm	
Dissolved Oxygen:			mg/L	
pH:			S.U.	
Eh:			mV	
Turbidity:			NTU	

SAMPLE COLLECTION

Time: 8:35
Appearance of Sample: Clear, no odor
Sample Duplicate ?: NO
Sample Method: LF

NO./BOTTLES:	SIZE:	TYPE:	FILTERED:	PRESERVATIVE:	PARAMETER:
1	1000 ml	**glass** plastic	yes **no**	**None**, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	Sulfolane
1	125 ml	glass **plastic**	yes **no**	**None**, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	Sulfate
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	

SAMPLING PERSONNEL

Name (SIGNATURE): [signature]
Chain of Custody No.____
Name (SIGNATURE):

CLIENT: Merit Energy Co.
LOCATION: 13390 Lone Tree Road
Hartland Township, Michigan
PROJECT: 130685.2000

Monitoring Location:
Sample ID: MW-18
Well Type: 2" PVC

INSPECTION

Label on well?	(YES) NO REMEDIED
Is reference mark visible?	(YES) NO REMEDIED
Standing water present?	YES (NO) REMEDIED
Indication of surface runoff in well?	YES (NO) REMEDIED
Is cement pad in good repair?	(YES) NO REMEDIED
Is protective casing locked and in good repair?	(YES) NO REMEDIED
Is inner cap in place and properly sealing well?	(YES) NO REMEDIED
Is well casing in visibly good repair?	(YES) NO REMEDIED

Repair Notes:

STATIC WATER LEVEL

Date: 9/28/22 Time: 13:14

Top of Casing Elevation:
Depth to Water: 21.70
Elevation of Water:

Measured with: (ELECTRONIC TAPE) CHALKED TAPE OTHER
Well depth verified? YES (NO)

WELL PURGING

Purge Method: (PERISTALTIC) BLADDER OTHER
Date: 9/28/22 Start Time: 13:15

Measured Well Depth: 27.50 Screen Length: Depth to Screen Midpoint:

Time	Water Level (feet)	Drawdown (feet)	Pumping Rate (ml/min)	Temp (°C)	Spec Cond. (umho/cm)	Diss Oxy (mg/l)	pH (S.U.)	ORP (mV)	Turbidity (NTU)
13:30	21.76	-.06	300	11.9	.588	1.60	7.33	127.4	4.17
13:35	21.76	-.06	300	11.9	.595	1.51	7.30	125.7	3.81
13:40	21.76	-.06	300	11.9	.599	1.46	7.27	124.1	3.76
Stabilization Criteria:				+/- 3%	+/- 3%	+/- 10% (if > 0.5 mg/l)	+/- 0.1 Units	+/- 10 mV	+/- 10 % (if > 5 NTU)

Total Volume Purged (gal): 2

Stabilization Criteria Reference Doc. USEPA EQASOP-GW 001 Rev #3, January 19, 2010

FIELD ANALYSIS

Time:	13:40	
Temperature:	11.9	deg. C
Specific Conductance:	.599	umhos/cm
Dissolved Oxygen:	1.46	mg/L
pH:	7.27	S.U.
ORP:	124.1	mV
Turbidity:	3.76	NTU

CALIBRATION CHECK

	Standard (conc.)	Reading		Mark if Recalibrated
Specific Cond.:			umhos/cm	
Dissolved Oxygen:			mg/L	
pH:			S.U.	
Eh:			mV	
Turbidity:			NTU	

SAMPLE COLLECTION

Time: 13:45
Appearance of Sample: Clear, no odor
Sample Duplicate ?: NO
Sample Method: LF

NO./BOTTLES:	SIZE:	TYPE:	FILTERED:	PRESERVATIVE:	PARAMETER:
1	1000 ml	glass	no	None	Sulfolane
1	125 ml	plastic	no	None	Sulfate
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	

SAMPLING PERSONNEL

Name (SIGNATURE): [signature]
Chain of Custody No.
Name (SIGNATURE):

CLIENT:	**Merit Energy Co.**	**Monitoring Location:**	
LOCATION:	**13390 Lone Tree Road**	**Sample ID:**	**MW-** 19s
	Hartland Township, Michigan	**Well Type:**	2" PVC
PROJECT:	**130685.2000**		

INSPECTION

Label on well?	(YES) NO REMEDIED	Is cement pad in good repair?	(YES) NO REMEDIED
Is reference mark visible?	(YES) NO REMEDIED	Is protective casing locked and in good repair?	(YES) NO REMEDIED
Standing water present?	YES (NO) REMEDIED	Is inner cap in place and properly sealing well?	(YES) NO REMEDIED
Indication of surface runoff in well?	YES (NO) REMEDIED	Is well casing in visibly good repair?	(YES) NO REMEDIED

Repair Notes:

STATIC WATER LEVEL

Date: 9/28/22 Time: 12:14

Top of Casing Elevation:
Depth to Water: 22.78
Elevation of Water:

Measured with: (ELECTRONIC TAPE) CHALKED TAPE OTHER
Well depth verified? YES (NO)

WELL PURGING

Purge Method: (PERISTALTIC) BLADDER OTHER______ Date: 9/28/22 Start Time: 12:15

Measured Well Depth: 30.27 Screen Length: ______ Depth to Screen Midpoint: ______

Time	Water Level (feet)	Drawdown (feet)	Pumping Rate (ml/min)	Temp (°C)	Spec Cond. (umho/cm)	Diss Oxy (mg/l)	pH (S.U.)	ORP (mV)	Turbidity (NTU)
12:30	23.00	-.22	250	11.5	.545	11.22	7.75	81.0	8.61
12:35	23.00	-.22	250	11.5	.542	9.27	7.76	83.9	8.17
12:40	23.00	-.22	250	11.4	.540	8.61	7.76	85.1	7.91
12:45	23.00	-.22	250	11.4	.538	8.22	7.76	87.0	6.40
Stabilization Criteria:				+/- 3%	+/- 3%	+/- 10% (if > 0.5 mg/l)	+/- 0.1 Units	+/- 10 mV	+/- 10 % (if > 5 NTU)

Total Volume Purged (gal): 2

Stabilization Criteria Reference Doc. USEPA EQASOP-GW 001 Rev #3, January 19, 2010

FIELD ANALYSIS

Time:	12:45	
Temperature:	11.4	deg. C
Specific Conductance:	.538	umhos/cm
Dissolved Oxygen:	8.22	mg/L
pH:	7.76	S.U.
ORP:	87.0	mV
Turbidity:	6.40	NTU

CALIBRATION CHECK

	Standard (conc.)	Reading		Mark if Recalibrated
Specific Cond.:			umhos/cm	
Dissolved Oxygen:			mg/L	
pH:			S.U.	
Eh:			mV	
Turbidity:			NTU	

SAMPLE COLLECTION

Time: 12:50 Sample Duplicate ?: NO
Appearance of Sample: Clear, no odor Sample Method: LF

NO./BOTTLES:	SIZE:	TYPE:	FILTERED:	PRESERVATIVE:	PARAMETER:
1	1000 ml	**glass** plastic	yes **no**	**None**, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	Sulfolane
1	125 ml	glass **plastic**	yes **no**	**None**, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	Sulfate
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	

SAMPLING PERSONNEL

Name (SIGNATURE): Ty [signature] Chain of Custody No.______
Name (SIGNATURE):

CLIENT: Merit Energy Co.
LOCATION: 13390 Lone Tree Road
Hartland Township, Michigan
PROJECT: 130685.2000

Monitoring Location: ____
Sample ID: MW-19d
Well Type: 2" PVC

INSPECTION

Label on well?	(YES) NO REMEDIED		Is cement pad in good repair?	(YES) NO REMEDIED
Is reference mark visible?	(YES) NO REMEDIED		Is protective casing locked and in good repair?	(YES) NO REMEDIED
Standing water present?	YES (NO) REMEDIED		Is inner cap in place and properly sealing well?	(YES) NO REMEDIED
Indication of surface runoff in well?	YES (NO) REMEDIED		Is well casing in visibly good repair?	(YES) NO REMEDIED

Repair Notes:

STATIC WATER LEVEL

Date: 9/28/22 Time: 11:29

Top of Casing Elevation:
Depth to Water: 22.80
Elevation of Water: ____

Measured with: (ELECTRONIC TAPE) CHALKED TAPE OTHER
Well depth verified? YES (NO)

WELL PURGING

Purge Method: (PERISTALTIC) BLADDER OTHER____ Date: 9:28 Start Time: 11:30

Measured Well Depth: 50.00 Screen Length: ____ Depth to Screen Midpoint: ____

Time	Water Level (feet)	Drawdown (feet)	Pumping Rate (ml/min)	Temp (°C)	Spec Cond. (umho/cm)	Diss Oxy (mg/l)	pH (S.U.)	ORP (mV)	Turbidity (NTU)
11:45	22.87	-.07	250	11.6	.847	1.97	7.24	65.4	3.41
11:50	22.87	-.07	250	11.3	.852	1.91	7.24	63.4	3.10
11:55	22.87	-.07	250	11.3	.854	1.86	7.24	61.7	2.60
Stabilization Criteria:				+/- 3%	+/- 3%	+/- 10% (if > 0.5 mg/l)	+/- 0.1 Units	+/- 10 mV	+/- 10 % (if > 5 NTU)

Total Volume Purged (gal): 2

Stabilization Criteria Reference Doc. USEPA EQASOP-GW 001 Rev #3, January 19, 2010

FIELD ANALYSIS

Time: 11:55
Temperature: 11.3 deg. C
Specific Conductance: .854 umhos/cm
Dissolved Oxygen: 1.86 mg/L
pH: 7.24 S.U.
ORP: 61.7 mV
Turbidity: 2.60 NTU

CALIBRATION CHECK

	Standard (conc.)	Reading	Mark if Recalibrated
Specific Cond.:		umhos/cm	
Dissolved Oxygen:		mg/L	
pH:		S.U.	
Eh:		mV	
Turbidity:		NTU	

SAMPLE COLLECTION

Time: 12:00
Appearance of Sample: Clear, no odor
Sample Duplicate ?: NO
Sample Method: LF

NO./BOTTLES:	SIZE:	TYPE:	FILTERED:	PRESERVATIVE:	PARAMETER:
1	1000 ml	[glass] plastic	yes [no]	[None], HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	Sulfolane
1	125 ml	glass [plastic]	yes [no]	[None], HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	Sulfate
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	

SAMPLING PERSONNEL

Chain of Custody No.____
Name (SIGNATURE): [signature] Name (SIGNATURE):

CLIENT:	**Merit Energy Co.**	**Monitoring Location:**	
LOCATION:	**13390 Lone Tree Road**	**Sample ID:**	**MW-** 20S
	Hartland Township, Michigan	**Well Type:**	2" PVC
PROJECT:	**130685.2000**		

INSPECTION

Label on well?	(YES) NO REMEDIED	Is cement pad in good repair?	(YES) NO REMEDIED
Is reference mark visible?	(YES) NO REMEDIED	Is protective casing locked and in good repair?	(YES) NO REMEDIED
Standing water present?	YES (NO) REMEDIED	Is inner cap in place and properly sealing well?	(YES) NO REMEDIED
Indication of surface runoff in well?	YES (NO) REMEDIED	Is well casing in visibly good repair?	(YES) NO REMEDIED

Repair Notes:

STATIC WATER LEVEL

Date: 9/28/22 Time: 14:09

Top of Casing Elevation:

Depth to Water: 22.16'

Elevation of Water:

Measured with: (ELECTRONIC TAPE) CHALKED TAPE OTHER

Well depth verified? YES (NO)

WELL PURGING

Purge Method: (PERISTALTIC) BLADDER OTHER______ Date: 9/28/22 Start Time: 14:10

Measured Well Depth: 25.10' Screen Length: ______ Depth to Screen Midpoint: ______

Time	Water Level (feet)	Drawdown (feet)	Pumping Rate (ml/min)	Temp (°C)	Spec Cond. (umho/cm)	Diss Oxy (mg/l)	pH (S.U.)	ORP (mV)	Turbidity (NTU)
14:25	25	-.08	200	11.4	.69	13.6	7.46	51.9	4.11
14:30	25	-.08	200	11.4	.64	11.4	7.48	48.4	3.71
14:35	25	-.08	200	11.3	.61	12.7	7.53	46.3	3.25
Total Volume Purged (gal): 1.5		Stabilization Criteria:		+/- 3%	+/- 3%	+/- 10% (if > 0.5 mg/l)	+/- 0.1 Units	+/- 10 mV	+/- 10 % (if > 5 NTU)

Stabilization Criteria Reference Doc. USEPA EQASOP-GW 001 Rev #3, January 19, 2010

FIELD ANALYSIS

Time:	14:35	
Temperature:	11.3	deg. C
Specific Conductance:	.61	umhos/cm
Dissolved Oxygen:	12.7	mg/L
pH:	7.53	S.U.
ORP:	46.3	mV
Turbidity:	3.25	NTU

CALIBRATION CHECK

	Standard (conc.)	Reading		Mark if Recalibrated
Specific Cond.:			umhos/cm	
Dissolved Oxygen:			mg/L	
pH:			S.U.	
Eh:			mV	
Turbidity:			NTU	

SAMPLE COLLECTION

Time: 14:40 Sample Duplicate ?: NO

Appearance of Sample: Clear, no odor Sample Method: LF

NO./BOTTLES:	SIZE:	TYPE:	FILTERED:	PRESERVATIVE:	PARAMETER:
1	1000 ml	glass	no	None	Sulfolane
1	125 ml	plastic	no	None	Sulfate
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	

SAMPLING PERSONNEL

Name (SIGNATURE): [signature] Chain of Custody No.______

Name (SIGNATURE):

CLIENT: Merit Energy Co.
LOCATION: 13390 Lone Tree Road, Hartland Township, Michigan
PROJECT: 130685.2000

Monitoring Location: ______
Sample ID: MW-20d
Well Type: 2" PVC

INSPECTION

Label on well?	(YES) NO REMEDIED	Is cement pad in good repair?	(YES) NO REMEDIED
Is reference mark visible?	(YES) NO REMEDIED	Is protective casing locked and in good repair?	(YES) NO REMEDIED
Standing water present?	YES (NO) REMEDIED	Is inner cap in place and properly sealing well?	(YES) NO REMEDIED
Indication of surface runoff in well?	YES (NO) REMEDIED	Is well casing in visibly good repair?	(YES) NO REMEDIED

Repair Notes:

STATIC WATER LEVEL

Date: 9/28/22 Time: 14:58

Top of Casing Elevation:
Depth to Water: 21.98
Elevation of Water:

Measured with: (ELECTRONIC TAPE) CHALKED TAPE OTHER
Well depth verified? YES (NO)

WELL PURGING

Purge Method: (PERISTALTIC) BLADDER OTHER______
Date: 9/28/22 Start Time: 15:00
Measured Well Depth: 35.70' Screen Length: ______ Depth to Screen Midpoint: ______

Time	Water Level (feet)	Drawdown (feet)	Pumping Rate (ml/min)	Temp (°C)	Spec Cond. (umho/cm)	Diss Oxy (mg/l)	pH (S.U.)	ORP (mV)	Turbidity (NTU)
15:15	22.01	-.03	200	11.5	.84	12.2	7.41	63.7	3.62
15:20	22.01	-.03	200	11.4	.79	10.1	7.43	60.1	3.21
15:25	22.01	-.03	200	11.3	.77	9.2	7.45	58.1	3.26
Stabilization Criteria:				+/- 3%	+/- 3%	+/- 10% (if > 0.5 mg/l)	+/- 0.1 Units	+/- 10 mV	+/- 10 % (if > 5 NTU)

Total Volume Purged (gal): 1.5

Stabilization Criteria Reference Doc. USEPA EQASOP-GW 001 Rev #3, January 19, 2010

FIELD ANALYSIS

Time:	15:25	
Temperature:	11.3	deg. C
Specific Conductance:	.77	umhos/cm
Dissolved Oxygen:	9.2	mg/L
pH:	7.45	S.U.
ORP:	58.1	mV
Turbidity:	3.26	NTU

CALIBRATION CHECK

	Standard (conc.)	Reading		Mark if Recalibrated
Specific Cond.:			umhos/cm	
Dissolved Oxygen:			mg/L	
pH:			S.U.	
Eh:			mV	
Turbidity:			NTU	

SAMPLE COLLECTION

Time: 15:30
Appearance of Sample: Clear, no odor
Sample Duplicate ?: NO
Sample Method: LF

NO./BOTTLES:	SIZE:	TYPE:	FILTERED:	PRESERVATIVE:	PARAMETER:
1	1000 ml	glass	no	None	Sulfolane
1	125 ml	plastic	no	None	Sulfate
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	
	ml	glass plastic	yes no	None, HCl, HNO_3, NaOH, H_2SO_4, ZnAc, TSP, BAK	

SAMPLING PERSONNEL

Name (SIGNATURE): [signature]
Chain of Custody No.______
Name (SIGNATURE):