April 27, 2022

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 - 1st 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 – 1st 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 ilewandowski@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 – 1st Quarter 2022





3399 Veterans Drive, Traverse City, Michigan 49684

QUARTERLY PROJECT UPDATE REPORT 1st QUARTER 2022

HARLTAND 36 GAS PLANT PORTION OF E¹/₂ of NW ¹/₄ of SECTION 36, T03N-R06E, HARTLAND TWP, LIVINGSTON COUNTY, MICHIGAN

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

> April 27, 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
DSH.	Ban Bamann
Signature	Signature
April 27, 2022	April 27, 2022
Date	Date



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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 1st 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 2022 dated March 3, 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 [H₂S] removal), carbon dioxide (CO₂) 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, $\mu g/L$). The maximum sulfolane concentration reported from a monitor well at the Site was 11,000 micrograms per liter ($\mu g/L$) 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 4th Quarter 2021 indicate the remediation system has significantly reduced concentrations of sulfolane in groundwater. Remediation system operations ceased on 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 monitoring event completed on December 28-29, 2021 reported sulfolane non-detect from 13 of the 14 monitor wells that previously reported sulfolane above the cleanup goal (i.e. analytical targe detection limit, 10 μg/L). MW-13D reported the concentration of sulfolane at 21 μg/L. MW-13D was the only monitor well to report a concentration of sulfate (600 mg/L) above the cleanup goal (250 mg/L). Refer to the Quarterly Project Update Report – 4th Quarter 2021 dated March 3, 2022 for a summary of results of performance monitoring events completed through the 4th Quarter 2021.

5.0 REMEDIATION SYSTEM OPERATION AND MAINTENANCE

The remediation system was shut down on December 6, 2021 for the 4th Quarter 2021 performance monitoring event and did not operate during the 1st Quarter 2022. The remediation system remained shut down during the 1st Quarter 2022 to evaluate groundwater characteristics in the absence of active remediation for approximately three months.

6.0 PERFORMANCE MONITORING SUMMARY

The following sections detail performance monitoring activities completed at the Site in the 1st Quarter 2022.

6.1 PERFORMANCE MONITORING EVENTS

Personnel from ECT completed the following performance monitoring events at the Site in the 1st Quarter 2022:

- February 10, 2022 Supplemental groundwater monitoring event of MW-13D
- March 31-April 1, 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

As discussed in previous project submittals, upon the commencement of closure monitoring, three quarterly monitoring events will include the 14 monitor wells with previous detections of sulfolane and one quarterly monitoring event will include all (37) monitor wells (combined for one consecutive year of quarterly monitoring).

6.2 LABORATORY ANALYSIS

Groundwater samples from the 1st Quarter 2022 monitoring events 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

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 μ g/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 μ g/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 μ g/L is below the analytical target detection limit of 10 μ g/L, the analytical target detection limit of 10 μ g/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 COM-PARISON

The following presents a summary and comparison of groundwater analytical results to the cleanup goal from sampling events completed in the 1st 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 preremediation 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-14S, MW-14D, MW-15D, MW-17S, MW-17D, MW-18, MW-19S, MW-19D, MW-20S, and MW-20D: Non-detect 100%
- The concentration of sulfate was reported above the cleanup goal (250 mg/L) from MW-13D from the supplemental sampling event completed on February 10, 2022 (470 mg/L) and the quarterly monitoring event completed March 31-April 1, 2022 (600 mg/L). As noted in the Technical Memorandum Biosparging Pilot Study dated July 28, 2017, and despite a slight increase to the concentration of sulfate from the 4th Quarter 2022 performance monitoring event, natural attenuation/biodegradation (i.e sulfate reduction) of sulfate is expected once biosparging has ceased.

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 just over four years (52 months) of operation. The concentration of sulfolane was reported non-detect from MW-13D for the supplemental monitoring event completed on February 10, 2022 and from all 14 monitor wells that were sampled for the 1st Quarter 2022 performance monitoring event.

The concentration of sulfate reported from MW-13D remains above the cleanup goal. The concentration of sulfate increased from 470 mg/L reported from the February 10, 2022 supplemental sampling event to 600 mg/L reported from the 1st Quarter 2022 monitoring event. Since the 1st Quarter 2020, the concentration of sulfate has fluctuated between 440 to 600 mg/L. 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 2nd Quarter 2022:

- The remediation system will remain shut down.
- Quarterly performance monitoring event in June 2022 to include sulfolane and sulfate analysis from the 14 monitor wells with previous detections of sulfolane.
- Remediation system operations will be evaluated following receipt of analytical results from the June 2022 monitoring event.
- A quarterly project update report will be submitted within three weeks of receipt of analytical data from the June 2022 performance monitoring event.



APPENDIX A FIGURES



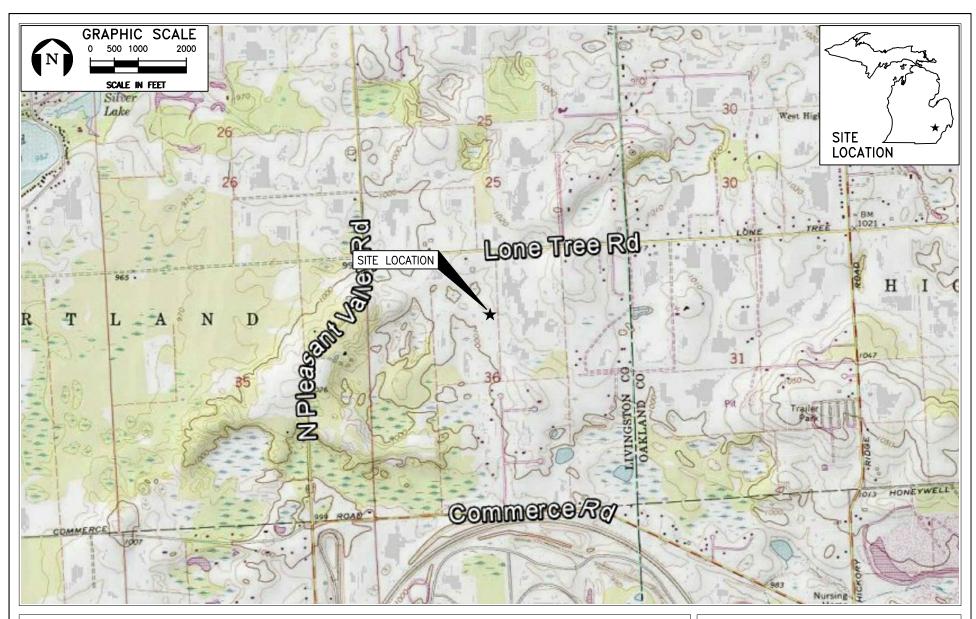


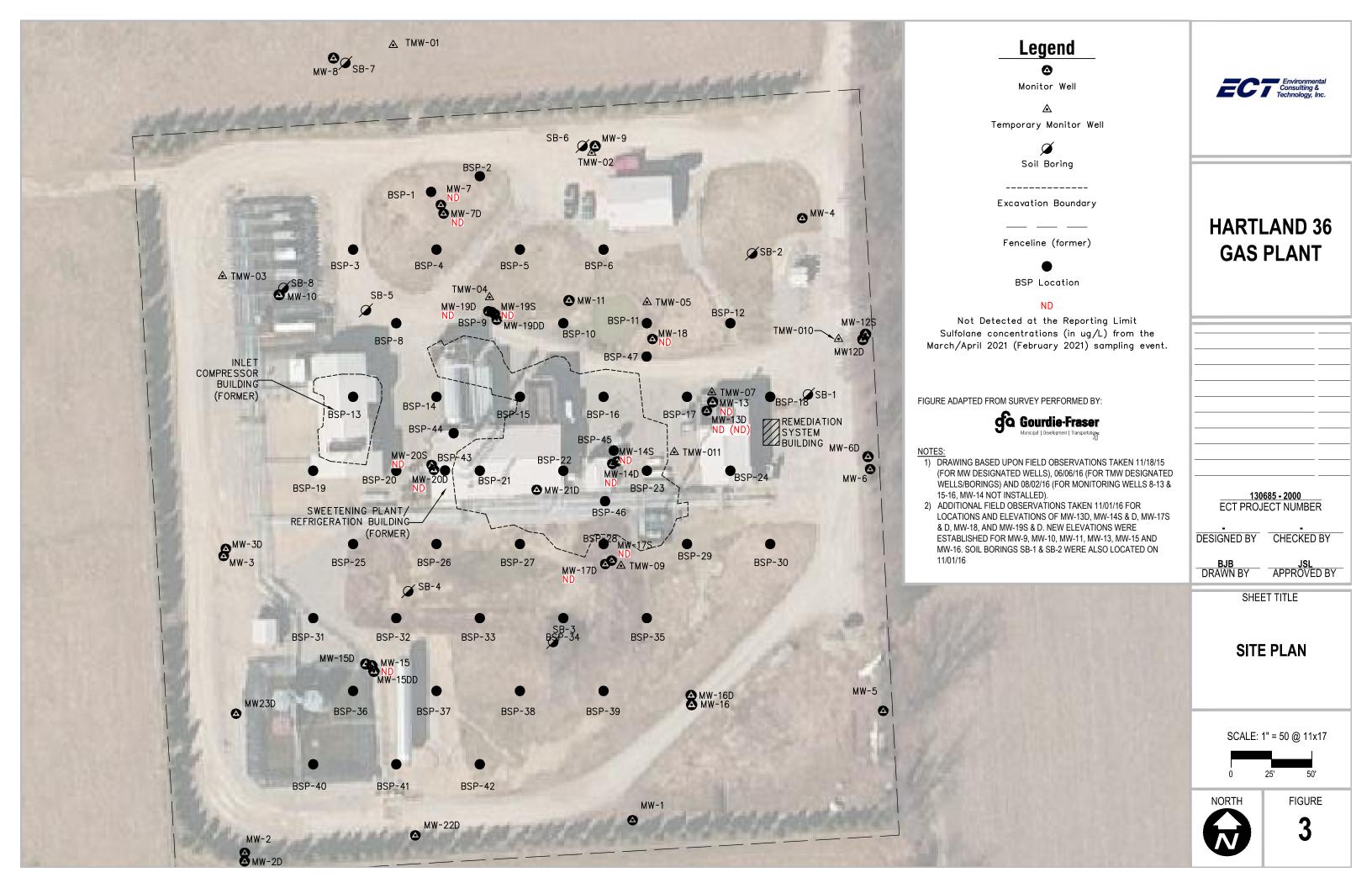
FIGURE 1
SITE LOCATION MAP
HARTLAND 36 GAS PLANT
PORTION OF E 1/2 OF NE 1/4 OF SECTION 36, T03N-R06E
HARTLAND TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN
Source: USGS QUad: Kent Lake, 2015; West Highland, 2015; ECT, 2016.





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.





APPENDIX B

TABLES



	TABLE 1		
GROUNDWATER ANALYTICAL	SUMMARY & CLEANU	P 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 #13.4685-2000

													ECT	Project #13	3-0685-200	00														
		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									
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		-								ı					-						-							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
% Decrease										-																				
Sulfolane Criterion (µg/L)															Non-det	tect - <10														
Sulfate Criterion (mg/L)															2	50														

		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
% Decrease	100%																								100%		
ulfolane Criterion (μg/L)													No	n-detect - <	:10												
ulfate 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 sulfidane 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 Proje	ect #13-068	55-2000													
		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
% Decrease	100%			100%		-	-			100%		-	100%				-					100%			100%		-
Sulfolane Criterion (ug/L)				•			•			•			N/	on-detect -	<10												

Sulfolane Criterion (µg/L)
Sulfate Criterion (mg/L)

		MW-18			MW-19S		1	MW-19D			MW-19DD			MW-20S			MW-20D		1	MW-21D			MW-22D		1	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												-															
9/20/21	ND	5.49	55	ND	7.27	90	ND.	1.35	120				ND	6.84	97	ND	4.87	73									
12/28-29/2021		5.49				90	ND	1.35																			
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									
% Decrease	100%	5.10	55	100%	11.10		100%	4.57					100%	9.39	100	100%	3.30										
Sulfolane Criterion (µg/L)	100%			100%			100%							n-detect - <		100%											
Sulfate Criterion (mg/L)													NC	250	. 10												

- 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) Subcrease 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, Cas, 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 boil 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 Pro	oject #13-068												
	Screened		,				,	,	,				Sample Dat				,		,					
Sample Location	Interval (ft bgs)	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		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			9/18-20/2018
MW-1	20.1 - 25.1	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
MW-2D	27.7 - 29.7											ND				ND	ND		ND			ND	ND	ND
MW-3	22.0 - 27.0	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
MW-4	23.1 - 28.1	ND ND	ND ND	ND ND	ND	ND ND	ND ND	ND		ND ND		ND ND				ND ND	ND ND		ND ND			ND ND	ND ND	ND ND
MW-5 MW-6	18.0 - 23.0 25.4 - 30.4	ND ND	ND ND	ND ND	ND	ND ND	ND ND	ND		ND ND		ND ND			ND	ND ND	ND ND		ND ND			ND ND	ND ND	ND ND
MW-6D	39.4 - 44.4	IND		ND	ND ND	ND ND	ND ND	ND ND		ND ND		ND ND			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		ND				12	ND		ND			ND	ND	ND
MW-7D	39.2 - 44.2																						180	
MW-8	24.6 - 29.6				ND	ND			3,100	ND		3,000 ND				2,600 ND	1,900 ND		4,100 ND		1,200	820 ND	ND	170 ND
MW-9	23.6 - 28.6				ND ND	ND ND				ND ND		ND ND				ND 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	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
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
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
MW-14S	18.6 - 23.6							46		460		540	490	160	520	94	120		100	85	ND	ND	52	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
MW-15	19.3 - 24.3				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
MW-15DD	50 - 55																33	48	ND			ND	ND	ND
MW-16	19.5 - 24.5				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
MW-17S	19.9 - 24.9							3,900		5,100		3,000				5,300	3,100		2,400	510	460	52	55	32
MW-17D	35.4 - 37.4							440		510		400				390	400	-	51	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
MW-19S	22.6 - 27.6							2,700		1,500		1,300				24	33		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
MW-19DD	57 - 62																ND		ND			ND	ND	ND
MW-20S	17.8 - 22.8								25			97				160	63		49	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
MW-21D	52.3 - 57.3								ND			ND				ND	ND		ND			ND	ND	ND
MW-22D	36.4 - 41.4											ND				ND	ND		ND			ND	ND	ND
MW-23D	28.1 - 30.1											ND				ND	ND		ND			ND	ND	ND
EGLE-OGMD Clea													Non-detect - <1											
Collection Method		L	.F	Bailer/PP										l	.F									

- 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 Proje	t #13-0685-20	000										
	Screened											Sample Date										
Sample Location	Interval (ft bgs)	12/17-18/2018	3/25-26/19	6/24-26/2019	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
MW-1	20.1 - 25.1			ND																		
MW-2	19.1 - 24.1			ND																		
MW-2D	27.7 - 29.7			ND																		
MW-3	22.0 - 27.0			ND																		
MW-3D	30.0 - 32.0			ND																		
MW-4	23.1 - 28.1			ND																		
MW-5	18.0 - 23.0			ND																		
MW-6	25.4 - 30.4			ND																		
MW-6D	39.4 - 44.4			ND																-		
MW-7	25.2 - 30.2	ND	ND	ND	ND	ND			ND		ND	ND		ND		ND	ND			ND		ND
MW-7D	39.2 - 44.2	300	1,700	510	140	1,200	2,400	1,500	ND	330	ND	ND		ND		ND	74	97	ND	ND		ND
MW-8	24.6 - 29.6			ND																		
MW-9	23.6 - 28.6			ND																		
MW-10	21.2 - 26.2			ND																		
MW-11	21.7 - 26.7			ND																		
MW-12S	20.5 - 25.5			ND																		
MW-12D	39.7 - 44.7			ND																		
MW-13	19.1 - 24.1	ND	ND	ND	ND	ND			ND		ND	ND		ND		ND	ND			ND		ND
MW-13D	27.7 - 29.7	ND	16	19	ND	37			ND	16	ND	ND		99	110	ND	93	45	ND	21	ND	ND
MW-14S	18.6 - 23.6	ND	ND	ND	ND	ND			ND		ND	ND		ND		ND	ND			ND		ND
MW-14D	36.7 - 41.7	290	ND	110	71	71			ND	ND	ND	ND		ND		ND	ND			ND		ND
MW-15	19.3 - 24.3			ND																		
MW-15D	37.9 - 42.9	ND	ND	ND	ND	ND			ND		ND	ND		ND		ND	ND			ND		ND
MW-15DD	50 - 55			ND																		
MW-16	19.5 - 24.5			ND																		
MW-16D	31.4 - 33.4			ND																		
MW-17S	19.9 - 24.9	ND	ND	ND	ND	ND			ND		ND	190	91	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		ND
MW-18	19.9 - 24.9	ND	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		ND
MW-19D	43.0 - 48.0	440	350	98	ND	92			ND	ND	ND	ND		ND		ND	ND			ND		ND
MW-19DD	57 - 62			ND																		
MW-20S	17.8 - 22.8	ND	ND	ND	ND	ND			ND		ND	ND		ND		ND	ND			ND		ND
MW-20D	31.0 - 33.0	19	ND	ND	ND	ND			ND		ND	ND		ND		ND	ND			ND		ND
MW-21D	52.3 - 57.3			ND																		
MW-22D	36.4 - 41.4			ND																		
MW-23D	28.1 - 30.1			ND																		
EGLE-OGMD Clear	nup Criteria										No	n-detect - <10 µ	•									
Collection Method						L	.F					Ba	iler	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 REPORTS





17-Feb-2022

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

Re: Lambda (Hartland 36 Gas Plant) Work Order: 22020766

Dear Nick,

ALS Environmental received 1 sample on 10-Feb-2022 11:00 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 10.

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,

Gary Byar

Electronically approved by: Gary Byar

Gary Byar Project Manager

Report of Laboratory Analysis

Certificate No: MI: 0022

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental 🚴

ALS Group, USA

Date: 17-Feb-22

Client: Lambda Energy Resources

Project: Lambda (Hartland 36 Gas Plant)

Work Order Sample Summary

Work Order: 22020766

<u>Lab Samp ID Client Sample ID Matrix Tag Number Collection Date Date Received Hold</u>

22020766-01 MW-13d Groundwater 2/10/2022 15:05 2/10/2022 23:00

Client: Lambda Energy Resources

Project: Lambda (Hartland 36 Gas Plant) Work Order: 22020766

Sample ID: MW-13d **Lab ID:** 22020766-01

Collection Date: 2/10/2022 03:05 PM Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW846 8	270D	Prep: SW3510 2/16/22 15:09	Analyst: EEW
Sulfolane	ND		10	μg/L	1	2/16/2022 06:54 PM
Surr: 2-Fluorobiphenyl	70.4		26-79	%REC	1	2/16/2022 06:54 PM
Surr: 4-Terphenyl-d14	79.5		43-106	%REC	1	2/16/2022 06:54 PM
Surr: Nitrobenzene-d5	66.6		29-80	%REC	1	2/16/2022 06:54 PM
SULFATE			A4500-S0	O4 E-11		Analyst: AML
Sulfate	470		10	mg/L	10	2/15/2022 11:58 AM

Date: 17-Feb-2022

Date: 17-Feb-22

Client: Lambda Energy Resources

Project: Lambda (Hartland 36 Gas Plant)

Work Order: 22020766

Case Narrative

Batch R338227, Method A4500-SO4 E-11, Sample 22020701-01A MS: MS and MSD are for an unrelated sample

Batch R338227, Method A4500-SO4 E-11, Sample 22020861-05C MS: MS and MSD are for an unrelated sample

Batch 191814, Method SW846 8270D: The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

Client: Lambda Energy Resources

Work Order: 22020766

Project: Lambda (Hartland 36 Gas Plant)

QC BATCH REPORT

Date: 17-Feb-22

MBLK S	ample ID: SBLKW1-1	91814-19 [.]	1814			ι	Jnits: µg/L		Analysi	s Date: 2/1	6/2022 05	:44 PM
Client ID:		Run II	D: SVMS9	_220216A		Se	qNo: 818 0	467	Prep Date: 2/1	6/2022	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-Fluorobipheny	1	35.93	0	50		0	71.9	26-79	C)		
Surr: 4-Terphenyl-d14	1	42.94	0	50		0	85.9	43-106	C)		
Surr: Nitrobenzene-d	5	36.43	0	50		0	72.9	29-80	C)		
LCS S	ample ID: SLCSW1-1	91814-19 ⁻	1814			L	Jnits: µg/L		Analysi	s Date: 2/1	6/2022 06	:08 PM
Client ID.				0000404		_	~No: 0400	400	D D 1 211		DE 4	
Client ID:		Run II	D: SVMS9	_220216A		Se	qNo: 8180	1468	Prep Date: 2/1	6/2022	DF: 1	
		Run II	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	6/2022 %RPD	RPD Limit	Qual
Analyte								Control	RPD Ref	%RPD	RPD	Qual
Analyte	1	Result	PQL	SPK Val			%REC	Control Limit	RPD Ref Value	%RPD	RPD	Qual
Analyte Sulfolane		Result 75.98	PQL 10	SPK Val		0	%REC 76	Control Limit	RPD Ref Value	%RPD))	RPD	Qual
Analyte Sulfolane <i>Surr: 2-Fluorobipheny</i>	1	Result 75.98 37.29	PQL 10 0	SPK Val 100 50		0 0	%REC 76 74.6	Control Limit 30-100 26-79	RPD Ref Value	%RPD))	RPD	Qual
Analyte Sulfolane Surr: 2-Fluorobipheny Surr: 4-Terphenyl-d1- Surr: Nitrobenzene-d	1	75.98 37.29 38.96 36.65	PQL 10 0 0	SPK Val 100 50 50		0 0 0	%REC 76 74.6 77.9	Control Limit 30-100 26-79 43-106 29-80	RPD Ref Value	%RPD))	RPD Limit	

Client ID:	Run ID:	SVMS9	_220216A		Se	qNo: 818 (0469	Prep Date: 2/16	/2022	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfolane	59.64	10	100		0	59.6	30-100	75.98	24.1	30	
Surr: 2-Fluorobiphenyl	32.93	0	50		0	65.9	26-79	37.29	12.4	40	
Surr: 4-Terphenyl-d14	40.5	0	50		0	81	43-106	38.96	3.88	40	
Surr: Nitrobenzene-d5	31.25	0	50		0	62.5	29-80	36.65	15.9	40	

The following samples were analyzed in this batch:

22020766-01A

QC BATCH REPORT

Client: Lambda Energy Resources

Work Order: 22020766

Project: Lambda (Hartland 36 Gas Plant)

Batch ID: R338227	Instrument ID GA	LLERY		Method	d: A4500 -	-SO4	E-11					
MBLK	Sample ID: MBLK-R33	8227				L	Jnits: mg/L	•	Analysi	s Date: 2/15	/2022 11:	40 AM
Client ID:		Run ID	: GALLE	RY_220215	A	Se	qNo: 8175	345	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: 22020701- 0	1A MS				L	Jnits: mg/l	-	Analys	s Date: 2/15	/2022 11:	31 AM
Client ID:		Run ID	: GALLE	RY_220215	A	Se	qNo: 8175	314	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate		45.99	1.0	50	446	6.4	-801	95-118	()		so
MS	Sample ID: 22020861- 0)5C MS				L	Jnits: mg/L	_	Analys	s Date: 2/15	/2022 11:	49 AM
Client ID:		Run ID	: GALLE	RY_220215	A	Se	qNo: 8175	369	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Sulfate		49.26	1.0	50	413	3.2	-728	95-118	()		so
MSD	Sample ID: 22020701- 0	1A MSD				L	Jnits: mg/l	-	Analys	s Date: 2/15	/2022 11:	31 AM
Client ID:		Run ID	: GALLE	RY_220215	A	Se	qNo: 8175	315	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Sulfate		50.53	1.0	50	446	6.4	-792	95-118	45.99	9.41	10	so
MSD	Sample ID: 22020861-0	5C MSD				U	Jnits: mg/L	_	Analysi	s Date: 2/15	/2022 11:	50 AM
Client ID:		Run ID	: GALLE	RY_220215	Α	Se	qNo: 8175	373	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Sulfate		47.99	1.0	50	413	3.2	-730	95-118	49.20	3 2.61	10	so
LCS1	Sample ID: LCS1-R338	3227				L	Jnits: mg/L	_	Analys	s Date: 2/15	/2022 11:	40 AM
Client ID:		Run ID	: GALLE	RY_220215	A	Se	qNo: 8175	343	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Sulfate		10.33	1.0	10		0	103	90-119	()		
LCS1	Sample ID: LCS1-R338	3227				L	Jnits: mg/L	_	Analysi	s Date: 2/15	/2022 01:	37 PM
Client ID:		Run ID	: GALLE	RY_220215	A		qNo: 8175		Prep Date:		DF: 1	
		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Analyte		I (Coult	I QL				/UI LLO					

Note:

Client: Lambda Energy Resources

Work Order: 22020766

Project: Lambda (Hartland 36 Gas Plant)

QC BATCH REPORT

Batch ID: R338227	Instrument ID GAL	LERY		Method	d: A4500	-SO ₄	4 E-11						
LCS2	Sample ID: LCS2-R3382	27				ι	Jnits: mg/l	L	Analy	/sis	Date: 2/1	5/2022 11:	29 AM
Client ID:		Run ID	: GALLE	RY_220215	Α	Se	qNo: 8175	306	Prep Date:			DF: 1	
Analyte	I	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value		%RPD	RPD Limit	Qual
Sulfate		48.57	1.0	50		0	97.1	95-118		0			
LCS2	Sample ID: LCS2-R3382	27				ι	Jnits: mg/l	<u>L</u>	Analy	/sis	Date: 2/1	5/2022 02:	15 PM
Client ID:		Run ID	: GALLE	RY_220215	A	Se	qNo: 8175	704	Prep Date:			DF: 1	
Analyte	I	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value		%RPD	RPD Limit	Qual
Sulfate		50.74	1.0	50		0	101	95-118		0			
The following samp	oles were analyzed in this	batch:	22	020766-01E	3							=	

ALS Group, USA

Date: 17-Feb-22

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

West Orders

ACRONYMS, UNITS

WorkOrder: 22020766

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 Е Value above quantitation range Н 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 ND Not Detected at the Reporting Limit O Sample amount is > 4 times amount spiked 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 POL Practical Quantitation Limit RPD Relative Percent Difference TDL Target Detection Limit

D ASTM E EPA

TNTC

A

SW SW-846 Update III

Too Numerous To Count APHA Standard Methods

Units Reported Description

 $\begin{array}{ll} \mu g/L & \quad \mbox{Micrograms per Liter} \\ mg/L & \quad \mbox{Milligrams per Liter} \end{array}$

Client Name: LAMBDA-KAL

Sample Receipt Checklist

Date/Time Received:

10-Feb-22 23:00

Work Order:	22020766			Received by	y: DS			
Checklist comp	leted by Diane Shaw eSignature		11-Feb-22	Reviewed by:	Gary Byar			14-Feb-22
Matrices: Carrier name:	Groundwater Courier		Date		eolynature			Date
Shipping contai	ner/cooler in good condition?		Yes 🗸	No 🗌	Not Present			
Custody seals in	ntact on shipping container/coole	r?	Yes	No 🗌	Not Present	✓		
Custody seals in	ntact on sample bottles?		Yes	No 🗌	Not Present	~		
Chain of custod	ly present?		Yes 🗸	No 🗆				
Chain of custod	ly signed when relinquished and ı	received?	Yes 🗸	No 🗆				
Chain of custod	ly agrees with sample labels?		Yes 🗸	No 🗆				
Samples in prop	per container/bottle?		Yes 🗸	No 🗆				
Sample contain	ers intact?		Yes 🗸	No 🗆				
Sufficient samp	le volume for indicated test?		Yes 🗸	No 🗆				
All samples rec	eived within holding time?		Yes 🗸	No 🗆				
Container/Temp	o Blank temperature in complianc	e?	Yes 🗸	No □				
Sample(s) received Temperature(s)	ived on ice? /Thermometer(s):		Yes ⊻	No 🗆	IR3			
Cooler(s)/Kit(s):					<u> </u>			
	ple(s) sent to storage:			9:37:22 AM				
	als have zero headspace?		Yes L	No L	No VOA vials sub	mitted	✓	
	eptable upon receipt?		Yes 🗸		N/A \square			
pH adjusted? pH adjusted by:			Yes L	No ✓	N/A			
Login Notes:			<u>-</u>					
209.1110.00.								
					- — — — — — .			
	- — — — — — — — — -		_ — — — –		- — — — — .			
Client Contacte	d:	Date Contacted:		Person	Contacted:			
Contacted By:		Regarding:		5.23.1				
,.		5 5						
Comments:								
CorrectiveAction	n:						656	



Cincinnati, OH +1 513 733 5336

Everett, WA +1 425 356 2600 Fort Collins, CO +1 970 490 1511 Holland, MI +1 616 399 6070

Chain of Custody Form

Houston, TX +1 281 530 5656 Spring City, PA +1 610 948 4903 South Charleston, WV +1 304 356 3168

Middletown, PA +1 717 944 5541

Salt Lake City, UT York, PA +1 801 266 7700 +1 717 505 5280

				AL	S Project	Manager:					ALS \	Nork (Order	#: 2	220	20	766
	Customer Information			t Informati						amete	er/Met	hod R	leques	st for A	Analys	sis	
Purchase Order		Project Name	Har	Hland.	36 G	Stant	A	501	1 fo	lan	e		(1)	Ar	rbei	Li	ter
Work Order		Project Number					В	501	fate	>) [25,	d	Pol.	Ŋ
Company Name	ECT. Inc.	Bill To Company	LAI	MBBA	EN	ERG4											/
Send Report To	Jeremy - Lewandowski 3399 Veterans Dr.	Invoice Attn	Nich	< Summ	rerland		D										
Address	3399 Veterans Dr.	Address	15	Somm 10 The	smu S	₹4.	F										
City/State/Zip	Traverse City, MI 49654	City/State/Zip	Kall	laska,	MI LIC	7646	G										
Phone	231-946-8200	Phone		-258-			Н										
Fax	Traverse City, MI 49654 231-946-8200 231-946-8208	Fax					1										
e-Mail Address	ilewardowski@ectinc.com	e-Mail Address	Michie	an invoic	es@lam	bdaene	KV	1100	com								
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A'	В	С	D	Е	F	G	Н	ı	J	Hold
1 MW-	-132	110/22 15	1:05	GW	~	2	X	X									
2																	
3																	
4		1															
5																	
6																	
7																	
8																	
9																	
10																	
Sampler(s) Please	To MA	Shipment Me			around Tin	e in Busine	ss Day ⊃ □3		☐ 2 BI	0	□1 BD		Re	esults D	Due Da	te:	
Relinquished by:	Date: 2/10/22 Tin Date: Tir 2/10/22 I	1530 Rec	eived by:/	6			Notes:										
Relinquished by:	Date: 1 Tir 2 10122	ne: Re	eived by (La	bordtory	2/1	300	Cod	oler ID	Coole	er Temp.	_			k One Bo			
Logged by (Laborator	y): DES 2/11/22 Tir		ocked by (La	63		200	1	P3		7 c	□ Le	vel II Std vel III Std vel IV SW	QC/Raw			Checklist Level IV	
Preservative Key:	1-HCI 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOh	5-Na ₂ S ₂ O ₃	6-NaHSO	4 7-Other	8-4°C	9-5035			1	01	□ Ot	her			_		

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.

3. The Chain of Custody is a legal document. All information must be completed accurately.



18-Apr-2022

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

Re: Lambda (Hartland 36 Gas Plant) Work Order: 22040216

Dear Nick,

ALS Environmental received 14 samples on 04-Apr-2022 10:30 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 26.

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: Gary Byar

Gary Byar

Project Manager

Report of Laboratory Analysis

Certificate No: MI: 0022

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

ALS Group, USA

Date: 18-Apr-22

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

Work Order: 22040216

Work Order Sample Summary

Lab Samp ID Client	Sample ID Ma	atri <u>x</u>	Tag Number	Collection Date	Date Received	Hold
22040216-01 MW-1	3s Gre	oundwater		3/31/2022 08:40	4/4/2022 22:30	
22040216-02 MW-1	3d Gro	oundwater		3/31/2022 09:50	4/4/2022 22:30	
22040216-03 MW-1	7s Gre	oundwater		3/31/2022 10:50	4/4/2022 22:30	
22040216-04 MW-1	7d Gre	oundwater		3/31/2022 11:45	4/4/2022 22:30	
22040216-05 MW-1	4d Gre	oundwater		3/31/2022 12:40	4/4/2022 22:30	
22040216-06 MW-1	4s Gre	oundwater		3/31/2022 13:30	4/4/2022 22:30	
22040216-07 MW-2	e0s Gre	oundwater		3/31/2022 14:20	4/4/2022 22:30	
22040216-08 MW-2	od Gre	oundwater		3/31/2022 15:15	4/4/2022 22:30	
22040216-09 MW-1	5d Gre	oundwater		4/1/2022 10:15	4/4/2022 22:30	
22040216-10 MW-1	8 Gre	oundwater		4/1/2022 09:05	4/4/2022 22:30	
22040216-11 MW-1	9s Gro	oundwater		4/1/2022 11:20	4/4/2022 22:30	
22040216-12 MW-1	9d Gre	oundwater		4/1/2022 12:15	4/4/2022 22:30	
22040216-13 MW-7	's Gre	oundwater		4/1/2022 13:20	4/4/2022 22:30	
22040216-14 MW-7	'd Gro	oundwater		4/1/2022 14:15	4/4/2022 22:30	

Client: Lambda Energy Resources

Project: Lambda (Hartland 36 Gas Plant) Work Order: 22040216

Sample ID: MW-13s **Lab ID:** 22040216-01

Collection Date: 3/31/2022 08:40 AM Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW846 8	270D	Prep: SW3510 4/8/22 16:31	Analyst: EEW
Sulfolane	ND		10	μg/L	1	4/15/2022 06:23 PM
Surr: 2-Fluorobiphenyl	79.3	S	26-79	%REC	1	4/15/2022 06:23 PM
Surr: 4-Terphenyl-d14	88.2		43-106	%REC	1	4/15/2022 06:23 PM
Surr: Nitrobenzene-d5	78.7		29-80	%REC	1	4/15/2022 06:23 PM
SULFATE			A4500-S0	04 E-11		Analyst: AML
Sulfate	190		4.0	mg/L	4	4/6/2022 12:26 PM

Date: 18-Apr-2022

Client: Lambda Energy Resources

Project: Lambda (Hartland 36 Gas Plant) Work Order: 22040216

Sample ID: MW-13d **Lab ID:** 22040216-02

Collection Date: 3/31/2022 09:50 AM Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW846 8	270D	Prep: SW3510 4/8/22 16:31	Analyst: EEW
Sulfolane	ND		10	μg/L	1	4/15/2022 06:46 PM
Surr: 2-Fluorobiphenyl	82.4	S	26-79	%REC	1	4/15/2022 06:46 PM
Surr: 4-Terphenyl-d14	98.8		43-106	%REC	1	4/15/2022 06:46 PM
Surr: Nitrobenzene-d5	75.3		29-80	%REC	1	4/15/2022 06:46 PM
SULFATE			A4500-S0	O4 E-11		Analyst: AML
Sulfate	600		10	mg/L	10	4/6/2022 12:34 PM

Date: 18-Apr-2022

Client: Lambda Energy Resources

Project: Lambda (Hartland 36 Gas Plant) Work Order: 22040216

Sample ID: MW-17s **Lab ID:** 22040216-03

Collection Date: 3/31/2022 10:50 AM Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW846 8	270D	Prep: SW3510 4/8/22 16:31	Analyst: EEW
Sulfolane	ND		10	μg/L	1	4/15/2022 07:09 PM
Surr: 2-Fluorobiphenyl	83.3	S	26-79	%REC	1	4/15/2022 07:09 PM
Surr: 4-Terphenyl-d14	101		43-106	%REC	1	4/15/2022 07:09 PM
Surr: Nitrobenzene-d5	79.0		29-80	%REC	1	4/15/2022 07:09 PM
SULFATE			A4500-S0	04 E-11		Analyst: AML
Sulfate	40		1.0	mg/L	1	4/6/2022 12:17 PM

Date: 18-Apr-2022

Client: Lambda Energy Resources

Project: Lambda (Hartland 36 Gas Plant) Work Order: 22040216

Sample ID: MW-17d **Lab ID:** 22040216-04

Collection Date: 3/31/2022 11:45 AM Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW846 8	270D	Prep: SW3510 4/8/22 16:31	Analyst: EEW
Sulfolane	ND		9.9	μg/L	1	4/15/2022 07:31 PM
Surr: 2-Fluorobiphenyl	86.4	S	26-79	%REC	1	4/15/2022 07:31 PM
Surr: 4-Terphenyl-d14	98.3		43-106	%REC	1	4/15/2022 07:31 PM
Surr: Nitrobenzene-d5	81.4	S	29-80	%REC	1	4/15/2022 07:31 PM
SULFATE			A4500-S0	04 E-11		Analyst: AML
Sulfate	200		4.0	mg/L	4	4/6/2022 12:28 PM

Date: 18-Apr-2022

Client: Lambda Energy Resources

Project: Lambda (Hartland 36 Gas Plant) Work Order: 22040216

Sample ID: MW-14d **Lab ID:** 22040216-05

Collection Date: 3/31/2022 12:40 PM Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW846 8	270D	Prep: SW3510 4/8/22 16:31	Analyst: EEW
Sulfolane	ND		10	μg/L	1	4/15/2022 07:54 PM
Surr: 2-Fluorobiphenyl	81.3	S	26-79	%REC	1	4/15/2022 07:54 PM
Surr: 4-Terphenyl-d14	95.8		43-106	%REC	1	4/15/2022 07:54 PM
Surr: Nitrobenzene-d5	74.6		29-80	%REC	1	4/15/2022 07:54 PM
SULFATE			A4500-S0	04 E-11		Analyst: AML
Sulfate	53		1.0	mg/L	1	4/6/2022 12:17 PM

Date: 18-Apr-2022

Client: Lambda Energy Resources

Project: Lambda (Hartland 36 Gas Plant) Work Order: 22040216

Sample ID: MW-14s **Lab ID:** 22040216-06

Collection Date: 3/31/2022 01:30 PM Matrix: GROUNDWATER

Analyses	Result	Report esult Qual Limit		Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW846 8	270D	Prep: SW3510 4/8/22 16:31	Analyst: EEW
Sulfolane	ND		9.8	μg/L	1	4/15/2022 08:17 PM
Surr: 2-Fluorobiphenyl	88.9	S	26-79	%REC	1	4/15/2022 08:17 PM
Surr: 4-Terphenyl-d14	98.9		43-106	%REC	1	4/15/2022 08:17 PM
Surr: Nitrobenzene-d5	82.4	S	29-80	%REC	1	4/15/2022 08:17 PM
SULFATE			A4500-S	04 E-11		Analyst: AML
Sulfate	35		1.0	mg/L	1	4/6/2022 12:18 PM

Date: 18-Apr-2022

Client: Lambda Energy Resources

Project: Lambda (Hartland 36 Gas Plant) Work Order: 22040216

Sample ID: MW-20s **Lab ID:** 22040216-07

Collection Date: 3/31/2022 02:20 PM Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW846 8	270D	Prep: SW3510 4/8/22 16:31	Analyst: EEW
Sulfolane	ND		10	μg/L	1	4/15/2022 08:40 PM
Surr: 2-Fluorobiphenyl	74.1		26-79	%REC	1	4/15/2022 08:40 PM
Surr: 4-Terphenyl-d14	84.0)	43-106	%REC	1	4/15/2022 08:40 PM
Surr: Nitrobenzene-d5	69.7	•	29-80	%REC	1	4/15/2022 08:40 PM
SULFATE			A4500-S0	04 E-11		Analyst: AML
Sulfate	100		4.0	mg/L	4	4/6/2022 12:30 PM

Date: 18-Apr-2022

Client: Lambda Energy Resources

Project: Lambda (Hartland 36 Gas Plant) Work Order: 22040216

Sample ID: MW-20d **Lab ID:** 22040216-08

Collection Date: 3/31/2022 03:15 PM Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW846 8	270D	Prep: SW3510 4/8/22 16:31	Analyst: EEW
Sulfolane	ND		9.9	μg/L	1	4/15/2022 09:03 PM
Surr: 2-Fluorobiphenyl	87.3	S	26-79	%REC	1	4/15/2022 09:03 PM
Surr: 4-Terphenyl-d14	101		43-106	%REC	1	4/15/2022 09:03 PM
Surr: Nitrobenzene-d5	80.8	S	29-80	%REC	1	4/15/2022 09:03 PM
SULFATE			A4500-S	04 E-11		Analyst: AML
Sulfate	72		1.0	mg/L	1	4/6/2022 12:19 PM

Date: 18-Apr-2022

Client: Lambda Energy Resources

Project: Lambda (Hartland 36 Gas Plant) Work Order: 22040216

Sample ID: MW-15d **Lab ID:** 22040216-09

Collection Date: 4/1/2022 10:15 AM Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW846 8	270D	Prep: SW3510 4/8/22 16:31	Analyst: EEW
Sulfolane	ND		9.9	μg/L	1	4/15/2022 09:25 PM
Surr: 2-Fluorobiphenyl	84.2	S	26-79	%REC	1	4/15/2022 09:25 PM
Surr: 4-Terphenyl-d14	96.1		43-106	%REC	1	4/15/2022 09:25 PM
Surr: Nitrobenzene-d5	80.9	S	29-80	%REC	1	4/15/2022 09:25 PM
SULFATE			A4500-S0	04 E-11		Analyst: AML
Sulfate	34		1.0	mg/L	1	4/6/2022 12:20 PM

Date: 18-Apr-2022

Client: Lambda Energy Resources

Project: Lambda (Hartland 36 Gas Plant) Work Order: 22040216

Sample ID: MW-18 **Lab ID:** 22040216-10

Collection Date: 4/1/2022 09:05 AM Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW846 8	270D	Prep: SW3510 4/8/22 16:31	Analyst: EEW
Sulfolane	ND		9.7	μg/L	1	4/15/2022 09:49 PM
Surr: 2-Fluorobiphenyl	88.6	S	26-79	%REC	1	4/15/2022 09:49 PM
Surr: 4-Terphenyl-d14	95.2		43-106	%REC	1	4/15/2022 09:49 PM
Surr: Nitrobenzene-d5	81.7	S	29-80	%REC	1	4/15/2022 09:49 PM
SULFATE			A4500-S0	04 E-11		Analyst: AML
Sulfate	55		1.0	mg/L	1	4/6/2022 12:20 PM

Date: 18-Apr-2022

Client: Lambda Energy Resources

Project: Lambda (Hartland 36 Gas Plant) Work Order: 22040216

Sample ID: MW-19s **Lab ID:** 22040216-11

Collection Date: 4/1/2022 11:20 AM Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW846 8	270D	Prep: SW3510 4/8/22 16:31	Analyst: EEW
Sulfolane	ND		10	μg/L	1	4/15/2022 10:11 PM
Surr: 2-Fluorobiphenyl	86.2	S	26-79	%REC	1	4/15/2022 10:11 PM
Surr: 4-Terphenyl-d14	97.3		43-106	%REC	1	4/15/2022 10:11 PM
Surr: Nitrobenzene-d5	80.0	S	29-80	%REC	1	4/15/2022 10:11 PM
SULFATE			A4500-S0	04 E-11		Analyst: AML
Sulfate	89		1.0	mg/L	1	4/6/2022 12:20 PM

Date: 18-Apr-2022

Client: Lambda Energy Resources

Project: Lambda (Hartland 36 Gas Plant) Work Order: 22040216

Sample ID: MW-19d **Lab ID:** 22040216-12

Collection Date: 4/1/2022 12:15 PM Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW846 8	270D	Prep: SW3510 4/8/22 16:31	Analyst: EEW
Sulfolane	ND		10	μg/L	1	4/15/2022 10:34 PM
Surr: 2-Fluorobiphenyl	84.1	S	26-79	%REC	1	4/15/2022 10:34 PM
Surr: 4-Terphenyl-d14	102		43-106	%REC	1	4/15/2022 10:34 PM
Surr: Nitrobenzene-d5	81.0	S	29-80	%REC	1	4/15/2022 10:34 PM
SULFATE			A4500-S0	04 E-11		Analyst: AML
Sulfate	110		4.0	mg/L	4	4/6/2022 12:32 PM

Date: 18-Apr-2022

Client: Lambda Energy Resources

Project: Lambda (Hartland 36 Gas Plant) Work Order: 22040216

Sample ID: MW-7s **Lab ID:** 22040216-13

Collection Date: 4/1/2022 01:20 PM Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW846 8	270D	Prep: SW3510 4/8/22 16:31	Analyst: EEW
Sulfolane	ND		10	μg/L	1	4/15/2022 10:57 PM
Surr: 2-Fluorobiphenyl	87.2	S	26-79	%REC	1	4/15/2022 10:57 PM
Surr: 4-Terphenyl-d14	104		43-106	%REC	1	4/15/2022 10:57 PM
Surr: Nitrobenzene-d5	83.7	S	29-80	%REC	1	4/15/2022 10:57 PM
SULFATE			A4500-S0	04 E-11		Analyst: AML
Sulfate	23		1.0	mg/L	1	4/6/2022 12:23 PM

Date: 18-Apr-2022

Client: Lambda Energy Resources

Project: Lambda (Hartland 36 Gas Plant) Work Order: 22040216

Sample ID: MW-7d **Lab ID:** 22040216-14

Collection Date: 4/1/2022 02:15 PM Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW846 8	270D	Prep: SW3510 4/8/22 16:31	Analyst: EEW
Sulfolane	ND		10	μg/L	1	4/15/2022 11:20 PM
Surr: 2-Fluorobiphenyl	82.9	S	26-79	%REC	1	4/15/2022 11:20 PM
Surr: 4-Terphenyl-d14	95.4		43-106	%REC	1	4/15/2022 11:20 PM
Surr: Nitrobenzene-d5	76.3		29-80	%REC	1	4/15/2022 11:20 PM
SULFATE			A4500-S0	04 E-11		Analyst: AML
Sulfate	27		1.0	mg/L	1	4/6/2022 12:23 PM

Date: 18-Apr-2022

Client: Lambda Energy Resources

Project: Lambda (Hartland 36 Gas Plant)

Work Order: 22040216

Case Narrative

Batch 194365, Method SW846 8270D, Sample MW-13s (22040216-01B): One or more surrogate recoveries were above the upper control limits. The sample was non-detect, therefore, no qualification is needed. 2-Fluorobiphenyl

Batch 194365, Method SW846 8270D, Sample MW-13d (22040216-02B): One or more surrogate recoveries were above the upper control limits. The sample was non-detect, therefore, no qualification is needed. 2-Fluorobiphenyl

Batch 194365, Method SW846 8270D, Sample MW-17s (22040216-03B): One or more surrogate recoveries were above the upper control limits. The sample was non-detect, therefore, no qualification is needed. 2-Fluorobiphenyl

Batch 194365, Method SW846 8270D, Sample MW-17d (22040216-04B): One or more surrogate recoveries were above the upper control limits. The sample was non-detect, therefore, no qualification is needed. 2-Fluorobiphenyl; Nitrobenzne-d5

Batch 194365, Method SW846 8270D, Sample MW-14d (22040216-05B): One or more surrogate recoveries were above the upper control limits. The sample was non-detect, therefore, no qualification is needed. 2-Fluorobiphenyl

Batch 194365, Method SW846 8270D, Sample MW-14s (22040216-06B): One or more surrogate recoveries were above the upper control limits. The sample was non-detect, therefore, no qualification is needed. 2-Fluorobiphenyl; Nitrobenzne-d5

Batch 194365, Method SW846 8270D, Sample MW-20d (22040216-08B): One or more surrogate recoveries were above the upper control limits. The sample was non-detect, therefore, no qualification is needed. 2-Fluorobiphenyl; Nitrobenzne-d5

Batch 194365, Method SW846 8270D, Sample MW-15d (22040216-09B): One or more surrogate recoveries were above the upper control limits. The sample was non-detect, therefore, no qualification is needed. 2-Fluorobiphenyl; Nitrobenzne-d5

Batch 194365, Method SW846 8270D, Sample MW-18 (22040216-10B): One or more surrogate recoveries were above the upper control limits. The sample was non-detect, therefore, no qualification is needed. 2-Fluorobiphenyl; Nitrobenzne-d5

Batch 194365, Method SW846 8270D, Sample MW-19s (22040216-11B): One or more

Client: Lambda Energy Resources

Project: Lambda (Hartland 36 Gas Plant)

Work Order: 22040216

surrogate recoveries were above the upper control limits. The sample was non-detect, therefore, no qualification is needed. 2-Fluorobiphenyl; Nitrobenzne-d5

Batch 194365, Method SW846 8270D, Sample MW-19d (22040216-12B): One or more surrogate recoveries were above the upper control limits. The sample was non-detect, therefore, no qualification is needed. 2-Fluorobiphenyl; Nitrobenzne-d5

Batch 194365, Method SW846 8270D, Sample MW-7s (22040216-13B): One or more surrogate recoveries were above the upper control limits. The sample was non-detect, therefore, no qualification is needed. 2-Fluorobiphenyl; Nitrobenzne-d5

Batch 194365, Method SW846 8270D, Sample MW-7d (22040216-14B): One or more surrogate recoveries were above the upper control limits. The sample was non-detect, therefore, no qualification is needed. 2-Fluorobiphenyl

Batch R341503, Method A4500-SO4 E-11, Sample 22040244-02A MSD: MSD is for an unrelated sample

Batch R341503, Method A4500-SO4 E-11, Sample 22040216-14A MSD: The MS recovery was below the lower control limit. The corresponding result in the parent sample may be biased low for this analyte:

Case Narrative

Client: Lambda Energy Resources

Work Order: 22040216

Project: Lambda (Hartland 36 Gas Plant)

QC BATCH REPORT

Date: 18-Apr-22

Batch ID: 194365	Instrument ID S\	/MS9		Method	: SW846	82	70D					
MBLK	Sample ID: SBLKW1-	194365-194	1365			Units: µg/L			Analysis Date: 4/15/2022 05:14 PM			
Client ID:		Run I	D: SVMS9	_220415A		Se	eqNo: 833 4	1860	Prep Date: 4/8/	2022	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Sulfolane		ND	10									
Surr: 2-Fluorobiphe	nyl	37.9	0	50		0	75.8	26-79	0			
Surr: 4-Terphenyl-d	114	46.93	0	50		0	93.9	43-106	0			
Surr: Nitrobenzene-	d5	38.34	0	50		0	76.7	29-80	0			
LCS	Sample ID: SLCSW1-	194365-194	365			-	Units: µg/L		Analysis	Date: 4/15	5/2022 05:	37 PM
Client ID:		Run II	: SVMS9	_220415A		Se	eqNo:8334	1861	Prep Date: 4/8/	2022	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfolane		65.7	10	100		0	65.7	30-100	0			
Surr: 2-Fluorobiphe	nyl	39.69	0	50		0	79.4	26-79	0			S
Surr: 4-Terphenyl-d	114	46.84	0	50		0	93.7	43-106	0			
Surr: Nitrobenzene-	d5	38.97	0	50		0	77.9	29-80	0			
LCSD	Sample ID: SLCSDW1	I-194365-19	94365			ı	Units: µg/L	•	Analysis	Date: 4/15	5/2022 06:	00 PM
Client ID:		Run I	D: SVMS9	_220415A		Se	eqNo: 833 4	1862	Prep Date: 4/8/	2022	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfolane		66.51	10	100		0	66.5	30-100	65.7	1.23	30	
Surr: 2-Fluorobiphe	nyl	37.91	0	50		0	75.8	26-79	39.69	4.59	40	
Surr: 4-Terphenyl-d		47.43	0	50		0	94.9	43-106	46.84	1.25	40	
Surr: Nitrobenzene-		38.31	0	50		0	76.6	29-80	38.97	1.71	40	
The following sample	es were analyzed in th	nis batch:	22 22 22	2040216-01E 2040216-04E 2040216-07E 2040216-10E 2040216-13E	3 22 3 22 3 22	2040 2040 2040	0216-02B 0216-05B 0216-08B 0216-11B 0216-14B	22 22	040216-03B 040216-06B 040216-09B 040216-12B			

QC BATCH REPORT

Client: Lambda Energy Resources

Work Order: 22040216

Project: Lambda (Hartland 36 Gas Plant)

Batch ID: R341503	Instrument ID GAI	LLERY		Method	: A4500-	SO4 E-11					
MBLK	Sample ID: MBLK-R341	1503				Units: mg/	L	Analysi	s Date: 4/6/	2022 12:2	3 PM
Client ID:		Run ID	GALLE	RY_220406	4	SeqNo: 830	1554	Prep Date:		DF: 1	
					SPK Ref		Control	RPD Ref		RPD	
Analyte		Result	PQL	SPK Val	Value	%REC	Limit	Value	%RPD	Limit	Qual
Sulfate		ND	1.0								
MS	Sample ID: 22040244-0	2A MS				Units: mg/	L	Analysi	s Date: 4/6 /2	2022 12:1	4 PM
Client ID:		Run ID	: GALLE	RY_220406	4	SeqNo: 830	1525	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Sulfate		71.73	1.0	50	23.0	97.3	95-118	C	1		
MS	Sample ID: 22040216-1	4A MS				Units: mg/	L	Analysi	s Date: 4/6/	2022 12:2	4 PM
Client ID: MW-7d		Run ID	: GALLE	RY_220406	4	SeqNo: 830	1558	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Sulfate		74.67	1.0	50	26.5	57 96.2	95-118	C			
MSD	Sample ID: 22040244-0	2A MSD				Units: mg/	L	Analysi	s Date: 4/6/	2022 12:1	5 PM
Client ID:		Run ID	GALLE	RY_220406	4	SeqNo: 830	1528	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Sulfate		68.67	1.0	50	23.0	91.2	95-118	71.73	4.36	10	S
MSD	Sample ID: 22040216-1	4A MSD				Units: mg/	L	Analysi	s Date: 4/6 /2	2022 12:2	5 PM
Client ID: MW-7d		Run ID	GALLE	RY_220406	4	SeqNo: 830	1559	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Sulfate		73.44	1.0	50	26.5	57 93.7	95-118	74.67	1.66	10	S
LCS1	Sample ID: LCS1-R341	503				Units: mg/	L	Analysi	s Date: 4/6/	2022 12:2	2 PM
Client ID:		Run ID	: GALLE	RY_220406	4	SeqNo: 830	1552	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Sulfate		10.22	1.0	10		0 102	90-119	O			
LCS2	Sample ID: LCS2-R341	503	503				L	Analysi	2022 12:1	1 PM	
Client ID:		Run ID	GALLE	RY_220406	4	SeqNo: 830	1515	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua

Client: Lambda Energy Resources

Work Order: 22040216

Project: Lambda (Hartland 36 Gas Plant)

Batch ID: R341503	Instrument ID GALLERY	Method:	A4500-SO4 E-11	
The following samples	were analyzed in this batch:	22040216-01A	22040216-02A	22040216-03A
		22040216-04A	22040216-05A	22040216-06A
		22040216-07A	22040216-08A	22040216-09A
		22040216-10A	22040216-11A	22040216-12A
		22040216-13A	22040216-14A	

Note:

QC BATCH REPORT

ALS Group, USA Date: 18-Apr-22

Client: Lambda Energy Resources

Project: Lambda (Hartland 36 Gas Plant)

QUALIFIERS,

ACRONIVACE

ACRONIVACE

ACRONIVACE

ACRONIVACE

PROPRIMARY

ACRONIVACE

ACR

Project: Lambda (Hartland 36 Gas Plant)
WorkOrder: 22040216

ACRONYMS, UNITS

ALS Group, USA

Date: 18-Apr-22

Qualifier	Description
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
В	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
Н	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
0	Sample amount is > 4 times amount spiked
P R	Dual Column results percent difference > 40% 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
$\mu g/L$	Micrograms per Liter
mg/L	Milligrams per Liter

QF Page 2 of 2

Client Name: LAMBDA-KAL

Sample Receipt Checklist

Date/Time Received:

04-Apr-22 22:30

Work Order:	22040216			Received by	y: <u>LY</u> :	<u>s</u>		
Checklist compl			05-Apr-22	Reviewed by:	Gary Byar			06-Apr-22
Matrices: Carrier name:	eSignature <u>Water</u> <u>Courier</u>		Date		eSignature			Date
Shipping contain	ner/cooler in good condition?		Yes 🗸	No 🗌	Not Present			
Custody seals in	ntact on shipping container/coole	r?	Yes	No 🗌	Not Present	\checkmark		
Custody seals in	ntact on sample bottles?		Yes	No 🗌	Not Present	\checkmark		
Chain of custod	ly present?		Yes 🗸	No \square				
Chain of custod	dy signed when relinquished and	received?	Yes 🗸	No \square				
Chain of custod	ly agrees with sample labels?		Yes 🗸	No \square				
Samples in prop	per container/bottle?		Yes 🗸	No 🗌				
Sample contain	ers intact?		Yes 🗸	No 🗌				
Sufficient sample	le volume for indicated test?		Yes 🗸	No 🗌				
All samples reco	eived within holding time?		Yes 🗸	No 🗆				
Container/Temp	p Blank temperature in complianc	ce?	Yes 🗹	No 🗌				
Sample(s) recei	ived on ice? /Thermometer(s):		Yes ✓ 2.3/3.3, 4.0	No	IR3			
Cooler(s)/Kit(s):	:							
	ple(s) sent to storage: als have zero headspace?		4/5/2022 9 Yes		No VOA vials sub	mitted	✓	
Water - pH acce	eptable upon receipt?		Yes 🗸	No 🗌	N/A			
pH adjusted? pH adjusted by:	:		Yes	No 🗹	N/A			
Login Notes:	=======	====:	====	:====	====		====	====
Olivet Contests		Data Contacts de		P.···	Ocata da d			
Client Contacte	eu.	Date Contacted	•	Person	Contacted:			
Contacted By:		Regarding:						
Comments:								
CorrectiveAction	n:						SRC P	age 1 of 1



Chain of Custody Form

Page of 2



ECT - TC: ECT, Inc.
Project: ECT - Hartland 36 Gas Plant



samples and COC Form have been submitted to ALS.

		Bill Carey			- Che	*****		1							
Customer Information		Project Information					Parameter/Method Request for Analysis								
Purchase Order	Project N		Hand:	36 Gas	Alant	Α	501	folan	٤						
Work Order	Project Nur					В	50	Ifate							
Company Name ECT Inc.	Bill To Com			Energy		С									
Send Report To Jetemy Lewandows Ki	Invoice	10.		enerland		D									
Address 3399 Veterans Dr.	Add	ress /5/10	Thom	as Rd.		F									
City/State/Zip Traverse City, MI 496	City/State	e/Zip Kg/Ka	ska, M	I 496	4)6	G			9						
Phone 231-946-8200	Pi	none 231 .	258-	6411		Н									
Fax 231 - 946 - 8208		Fax michiga	in -invo	ices @lan	lon every	yllc.	com								
e-Mail Address j lewandowski @ ectino	. com	J			3	¹ J									
No. Sample Description	Date	Time	Matrix	Pres. Key Numbers	# Bottles	A	В	С	D E	F	G	Н	ı	J	Hold
1 MW-13s	3-31-22		GW	-	2	X	X								
2 MW-13d	3-31-22	9:50	GW	-	2	X	X								
3 MW-175	3-31-22	10:50	GW	-	2	X	X								
4 MW-172	3-31-22	11:45	GW	-	2	X	X								
5 MW-146	3-31-22	12:40	GW	-	2	X	X								
6 MW-145	3-31-22	13:30	6W	-	Z	X	X								
7 MW-20s	3-31-22	14:20	G-W	-	ح	X	X								
8 MW-202	3-31-22	15:15	GW	-	Z .	X	X								
9 MW-152	4-1-22	10:15	GW	~	2	X	X								
10 MW-18	4-1-22	9:05	GW	-	2	X	X								
Sampler(s): Please Print & Sign	Shi	pment Metho		naround Tim				□ 0			Re	sults D	ue Date):	
Relinquished by: Sampler(s): Please Print & Sign	E	CT-1 Lab	₩ 10	0 BD □ 5 I	BD	□ 3 BD	□ 4	2 BD	□ 1 BI)					
	Time:	Received by:			Date:	Time:	Notes:								
Ty Martin (ECT) 4/4/22	1429	U	re	The state of the s	4/4/22	1429									
Relinquished by: Date: 14/72	Time:	Received by (La	boratory):	1	Date: 4/4/22	Time: 2230	ALS Co			QC Pack				-	ita
Logged by (Laboratory): Date:	Time:	Checked by (Lat	ooratory):	aremosty.	11 1/		IRS	3 2	.3	TRRP LR	С		TRRP Lev	el IV	
1,600	CC11		(25	>		1			Level IV:	SW846 I	Methods/C	LP like		
2 4/5/22	0854						PH3	2 4		Other:					
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂	SO ₄ 4-N	laOH 5- l	Va ₂ S ₂ O ₃	6-NaHS	O ₄ 7-0	ther	8-4°C			anges n	ust be	made in	writing	g once	



Chain of Custody Form

Page 2



ECT - TC: ECT, Inc.



		100		ALS Projec	t Manager:	Bill Care	У		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				18 8111 (88)		
Customer Information		Projec	ct Inform				Pa	aramete	/Meth	od Red	quest	for An	alysis		
Purchase Order	Project N	ame //ary	Hand	36 G	ras Play	t A	501	folan	د .						
Work Order	Project Nur	nber				В		Sate							
Company Name FCT Inc.	Bill To Comp	pany LAM	BISA	ENERL		С									
Send Report To Jarreny Lewardowski	Bill To Comp	Attn. Nic	K SU	mmerlas	d	D									
Address 3399 Veterans Dr.	Add	ress 1510	Th	omas R	4	E F									
City/State/Zip Traverse City, MI 49654	City/State	Zip Kallca	ska.	1L 49	646	G									
Phone 231 -946 - 8200	Ph	e/Zip /G/1Ca	-258	-641		Н									
Fax 751 - 946-8208		Fax michie	54 m - in	svices@l	ambda e	edsi	110.0	inm							
e-Mail Address 5 lewandowski @cctin	c.com					3 /									
No. Sample Description	Date	Time	Matrix	Pres. Key Numbers	# Bottles	Α	В	С	E	F	G	Н	I	J	Hold
11 MW-195	4-1-22	11:20	GW	-	2	X	X								
12 MW-19d	4-1-22	12:15	GW		2	X	X								
13 MW-75	4-1-22	13:20	GW	-	Z	X	X								
14 MW-72		1-1-22 14:15 GW - Z				X	1			1					
191 /1W-18	4-1-62	19 175	0.1	-			+,,		+	-					-
									_	-	-				-
							1			+					
Sampler(s): Please Print & Sign Ty Martin Relinquished by: Date:	E	oment Metho		naround Tim	ne: (Busines:	s Days) □ 3 BD		☐ Oth	er □ 1 BD		Re	sults D	ue Date):	
Ty Martin (ECT) 4/4/22	1429	Received by:	1	٤	Date: 1/22	142 ⁽	Notes:								
Relinquisted by: Date: 1/4/22		Received by (La	boratory):		Date: 4/4/22	Time:	ALS Co	and the second second second				Check B		-	ita
Logged by (Laboratory): Date: 4/5/22	Time: 0854	Checked by (Lak	poratory):	23			IR	4.)	TRRP LRO Level IV:		Methods/C	TRRP Lev LP like	el IV	
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂		aOH 5- 1	Na ₂ S ₂ O ₃	6-NaHS	O ₄ 7-Ot	her	8-4°C				ust be	made in	writing	g once	

samples and COC Form have been submitted to ALS.

APPENDIX D

LOW-FLOW SAMPLING FIELD FORMS



CLIENT:	Lambda Ener	gv		Monitorii	ng Location:		Hartland #36	
LOCATION:	13390 Lone T				Sample ID:		MW-13d	
		nship, Michigan			Well Type:		2" PVC	
PROJECT:	130685.2000	monip, mionigan			ype.			
INSPECTION				T		i	Α	70
Label on well?		YES NO REMEDIED		Is cement pad in g			YES NO REMEDIE	
Is reference mark v		YES NO REMEDIED		Especial Control of the Control of t	g locked and in go		YES NO REMEDIE YES NO REMEDIE	
Standing water pres		YES NO REMEDIED		Is inner cap in place	ce and properly sea		YES NO REMEDIE	
Indication of surface Repair Notes:	e runott in well?	YES NO REMEDIED		is well casing in vi	Sibily good repail ?	(J NO KEWIEDIE	
STATIC WAT	ER I EVEL I			- 1	1			
STATIC WAT	FIXTEATT			Date: 2/10	122	Time: 14:	30	
T	-14:			Date.		7 mile		
Top of Casing E		20.42	Measured wit	h: C	ELECTRONIC TAPE	CHALKED TAPE	OTHER	
Depth to Water			Well depth ve		YES NO	J. J. L. L. L. LAFE		
Elevation of Wa	ilei.		TTEII GEPUI VE	cu :	.10 (10)			
WELL PURG	ING			21.	10-			
	3	DIADDED OTHER		Date: 2/10	0/22	Start Time:	1:31	
Purge Method:	PERISTALTIC	BLADDER OTHER		Date		ctart Time		
	37	20 Screen Length			Donth to Sara	an Midnoint		
Measured Well	Depth:	Screen Length	1		Depth to Scree	an iviiapoint		-
			т.	0	Dies O	m.L.I	OPP	Turkidity
	Water Level	Drawdown Pumping Rate		Spec Cond.	Diss Oxy	pH (C.L.)	ORP	Turbidity
Time	(feet)	(feet) (ml/min)	(°C)	(umho/cm)	(mg/l)	(S.U.) 7.14	(mV)	(NTU)
14:50	20.66	24 250	8.4	1.329	4.58			1100
14:55	20.6la	24 256	8.1	1.321	4.57	7./7	96.4	4.51
15:00	20.66	24 250	8.0	1.316	4.46	7.19	98.6	4.35
					4.56			
					TM			
		Stabilization Criteria:	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 Units	+/- 10 mV	+/- 10 %
Total Volume Pเ	urged (gal):	Casing City Official			(if > 0.5 mg/l)			(if > 5 NTU)
				Stabiliza	ation Criteria Referen	ce Doc. USEPA EQA	ASOP-GW 001 Rev	#3, January 19, 2010
FIELD ANAL	YSIS							
	Time:	15:00			CALIBRATI	ON CHECK		Mark if
		8-0 deg. C			Standard (conc.)	Reading		Recalibrated
Speci	fic Conductance:	1-316 umhos/cm		Specific Cond.:		•	s/cm	
	issolved Oxygen:	15 21	1	Dissolved Oxygen:				
		7.19 s.u.						
1	pH:	P. C. P						
	ORP:	/1						
I	Turbidity:	NTU		Turbidity:		NTU		l
CAMPI F CC	LLECTION	Time: 1000			Sample Dunlie	ate ?: /U	ෆ	
SAMPLE CO	TOTAL TOTAL CONTRACTOR	Time:	- 1- (Sample Duplic	1 =		
Appearance of S	sample:	Clear, no och	≥ 01, 10	STORE!	Sample Metho	Ju		-
NO /POTTI ES:	SIZE:	TYPE: FILTERED:		PRESER	RVATIVE:		PARAMETER:	
NO./BOTTLES:	1000 ml		No e, HCl. HN	NO ₃ , NaOH, H ₂ SO ₄				
1		glass plastic yes no		NO ₃ , NaOH, H ₂ SO ₄				
	ml	glass plastic yes no		NO ₃ , NaOH, H ₂ SO ₄				
	ml	glass plastic yes no		NO ₃ , NaOH, H ₂ SO ₄				
	mI	glass plastic yes no		NO ₃ , NaOH, H ₂ SO ₄				
	ml	glass plastic yes no	None, HCI, HN	NO ₃ , NaOH, H ₂ SO ₄	, ZnAc, TSP, BAK			
	ml	glass plastic yes no	None, HCI, HN	NO ₃ , NaOH, H ₂ SO ₄	, ZnAc, TSP, BAK			
	mi	glass plastic yes no		NO ₃ , NaOH, H ₂ SO ₄				
	ml	glass plastic yes no		NO ₃ , NaOH, H ₂ SO ₄				
	ml	glass plastic yes no		NO ₃ , NaOH, H ₂ SO ₄				
	mi	glass plastic yes no	None, HCl, HN	NO ₃ , NaOH, H ₂ SO ₄	, ∠nac, TSP, BAK			
SAMPLING F	PERSONNEL		Chain	of Custody No.				
		10/10	Name (SIGNATURE):				
Name (SIGNA	TURE):	1-11	ivaille (OIOINATORE).				

CLIENT:	Merit Energy	Co.			Monitori	ng Location:			
LOCATION:	13390 Lone T					Sample ID:		MW75	
	Hartland Tow		nigan			Well Type:		2" PVC	
PROJECT:	130685.2000	nomp, mo	ngun						
INSPECTION		17						CI	
Label on well?		YES NO REMED	ED		Is cement pad in g	AND AND ADDRESS OF THE PARTY OF		YES NO REMEDIE	
Is reference mark v	isible?	YES NO REMED				g locked and in go		YES NO REMEDIE	
Standing water pres		YES NO REMED				ce and properly se		YES NO REMEDIE	
Indication of surface	e runoff in well?	YES NO REMED	ED		is well casing in vi	sibly good repair?		YES NO REMEDIE	,
Repair Notes:	ED LEVEL I					the state and stated a discount of the state of			
STATIC WAT	EK LEVEL				Date: 4-1-	. 72	Time: 12	:419	
					Date: 7		Time: _/	1	
Top of Casing E	levation:	22				-			
Depth to Water		23.35		Aeasured wit		The same of the sa	CHALKED TAPE	OTHER	
Elevation of Wa	iter:		V	Vell depth ve	rified?	YES NO			-
						A Vindent to the section of the			
WELL PURG	ING				Date: 4-1.	-22		12:50	
Purge Method:	PERISTALTIC	BLADDER	OTHER		Date:		Start Time:/	2,30	
	12	2 2 1							
Measured Well	Depth: 33.0	∞	Screen Length:			Depth to Scre	en Midpoint: _		_
I TOUGHT							_		
1	Water Level	Drawdown	Pumping Rate	Temp	Spec Cond.	Diss Oxy	рН	ORP	Turbidity
					(umho/cm)	(mg/l)	(S.U.)	(mV)	(NTU)
Time	(feet)	(feet)	(ml/min) 256	8.4	.426	/1. 7 4		87.6	1.62
13:05	23.40	05	256		,431			89.4	1.46
13:10	23.40	05		8.5		11.80	7.17	91.2	
13:15	23.40	05	250	8.4	.434	11.84	7.17	41.2	1.43
								_	
				1 00/		-1.400/	./ 0 4 11=:4=	./ 40>/	-1/ 10 9/
_		75 Stabili	zation Criteria:	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 Units	+/- 10 mV	+/- 10 % (if > 5 NTU)
Total Volume Pเ	urged (gal):	_			Ctabilia	(if > 0.5 mg/l)	ce Doc. USEPA EQA	SOP-GW 001 Pey #	
FIELD ANAL	veie I				Stabiliza	ation Chiteria Referen	ce boc. doll // Lur	tool ovi out her in	o, canaary 10, 2010
FIELD ANAL		17.110	_						
	Time:	13:15				CALIBRATI	ON CHECK		Mark if
	Temperature:	8.4	deg. C			Standard (conc.)	Reading		Recalibrated
Spec	fic Conductance:	,434	umhos/cm		Specific Cond.:		umhos	s/cm	
D	issolved Oxygen:	11.84	mg/L		Dissolved Oxygen:		mg/L	1 1	
l	pH:	7.17	S.U.						
	ORP:	91.2	mV						
	Turbidity:	1.43	NTU				NTU		
	Turbialty.	112	NIU		rurbidity.		1410	· ·	
CAMPI F CC	LI ECTION I	T:	17170			Sample Duplic	cate ?:	06	
SAMPLE CO		Time: _							
Appearance of S	Sample:	Clear	, no odor			Sample Metho	od:		
	0.75	7.05	EII TEDED.		DDESEE	RVATIVE:		PARAMETER:	
NO./BOTTLES:	SIZE: 1000 ml	TYPE:	FILTERED:	None HCI HI	PRESEF NO₃, NaOH, H₂SO₄				
1		glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄				
	ml	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄				
	ml	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄				
	ml	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄				
	ml	glass plastic			NO ₃ , NaOH, H ₂ SO ₄				
	ml	glass plastic	yes no yes no		NO ₃ , NaOH, H ₂ SO ₄				
	ml	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄				
	ml	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄				
	ml	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄				
	ml	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄				
		J.230 Pluotio	1			AND THE RESIDENCE OF THE PARTY			
SAMPLING F	PERSONNEL	21	1	Chain	of Custody No	•			
Name (SIGNA	TURE):	JU L	lu de la constante de la const	Name (SIGNATURE):				

CLIENT:	Merit Energy	Co.			Monitori	ng Location:			
LOCATION:	13390 Lone T					Sample ID:		MW- 72	
LOCATION.	Hartland Tow		nigan			Well Type:		2" PVC	
DDG IFOT		ristrip, wiici	ligali			well Type.			
PROJECT:	130685.2000								
INSPECTION		۸						d	
Label on well?		YES NO REMEDI	ED		Is cement pad in g	good repair?		YES NO REMEDIE	0
Is reference mark v	isible?	YES NO REMEDI	ED		Is protective casin	g locked and in go	od repair?	YES NO REMEDIE	0
Standing water pres	sent?	YES NO REMEDI	ED		Is inner cap in place	ce and properly sea	aling well?	YES NO REMEDIE	0
Indication of surface	e runoff in well?	YES NO REMEDI	ED		Is well casing in vi	sibly good repair?		YES NO REMEDIE	0
Repair Notes:									
STATIC WAT	ER LEVEL				,				
					Date: 4-1	-22	Time:	5:44	
T	Tlassadians				Date.		Time		
Top of Casing E		23.95			h. /	ELECTRONIC TAPE	CHALKED TAPE	OTHER	
Depth to Water		63.93		Measured wit			E CHALKED TAPE	OTHER	
Elevation of Wa	ater:		,	Well depth ve	ermea?	YES NO			- ' ' ' ' '
WELL PURG	ING				/1 1	72		13:45	•
Purge Method:	PERISTALTIC	BLADDER	OTHER		Date: 4-1	1-22	Start Time:	12 43	
Measured Well I	Denth: 48.5	0	Screen Length			Depth to Scre	en Midpoint		
ivieasured vveil i	Deptii.		Sciedii Lengtii			Dopar to oore	apoiiit		
				_		D: 6		000	T1.1.09
	Water Level	Drawdown	Pumping Rate	Temp	Spec Cond.	Diss Oxy	pН	ORP	Turbidity
Time	(feet)	(feet)	(ml/min)	(°C)	(umho/cm)	(mg/l)	(S.U.)	(mV)	(NTU)
14):00	23.96	- 01	256	8.6	.507	10.39	7.98	196.2	6.84
14:05	23.96	01	256	8.4	,508	10.33	7.99	199.6	(0.76
14:10	23.96	01	250	8.4	.510	10.29	7.99	203.4	Ce. 24
79.10	22110	.01		0.0		70.01			
							-		
					-	-			
			(
	1 -	Stabiliz	zation Criteria:	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 Units	+/- 10 mV	+/- 10 %
Total Volume Pเ	urged (gal):/	75 Stabiliz				(if > 0.5 mg/l)			(if > 5 NTU)
					Stabiliza	ation Criteria Referen	ice Doc. USEPA EQ	ASOP-GW 001 Rev #	3, January 19, 2010
FIELD ANAL	YSIS								
	Time:	14:10				CALIBRATI	ON CHECK		Mark if
1		8.4					Reading		Recalibrated
	Temperature:		deg. C			Standard (conc.)		1	recalibrated
	fic Conductance:		umhos/cm					s/cm	
Di	issolved Oxygen:		mg/L		Dissolved Oxygen:		mg/L	- 1	
	pH:	7.99	S.U.		pH:		S.U.		
		203.4	mV		Eh:		mV		
		6.24	NTU						
	i urbiaity:	3.0	NIO		raibidity.		1410		
0 AW5: 5 6 6	LI FOTION T		2111200			Cample Deal	note 2: A 1	2	
SAMPLE CO			14:15	1		Sample Duplic	1 1		
Appearance of S	Sample:	CI	ear, no	0005		Sample Metho	od:		-
NO./BOTTLES:	SIZE:	TYPE:	FILTERED:			RVATIVE:		PARAMETER:	
1	1000 ml		yes no	Resolver Luckey	NO ₃ , NaOH, H ₂ SO ₄				
1	<u>125</u> ml	glass plastic	yes no	None, HCI, H	NO ₃ , NaOH, H ₂ SO ₄	, ZnAc, TSP, BAK		Sulfate	
	ml	glass plastic	yes no	None, HCl, H	NO ₃ , NaOH, H ₂ SO ₄	, ZnAc, TSP, BAK			
	mI	glass plastic	yes no	None, HCI, H	NO ₃ , NaOH, H ₂ SO ₄	, ZnAc, TSP, BAK			
	ml	glass plastic	yes no	None, HCI, H	NO ₃ , NaOH, H ₂ SO ₄	, ZnAc, TSP, BAK			
	ml	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄				
	ml	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄				
	ml	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄				
	ml	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄				
	ml		•		NO ₃ , NaOH, H ₂ SO ₄				
	ml	glass plastic			NO_3 , $NaOH$, H_2SO_4 , NO_3 , $NaOH$, H_2SO_4				
		glass plastic	yes no		adiates allitico y desirabis periodes production production				
SAMPLING P	ERSONNEL			Chain	of Custody No.				
		=1.	NUA	Ale	CICNATUDE				
Name (SIGNA	TURE):			name (SIGNATURE):				

CLIENT: Merit Energy C LOCATION: 13390 Lone Tre Hartland Towns	ee Road	Monitoring Location: /-lartland Sample ID: MW-/35 Well Type: 2" PVC
PROJECT: 130685.2000		
Is reference mark visible? Standing water present?	ES NO REMEDIED ES NO REMEDIED ES NO REMEDIED ES NO REMEDIED	Is cement pad in good repair? Is protective casing locked and in good repair? Is inner cap in place and properly sealing well? Is well casing in visibly good repair? YES NO REMEDIED NO REMEDIED NO REMEDIED
STATIC WATER LEVEL		7-31-27 0.00
Top of Casing Elevation: Depth to Water: Elevation of Water:	20 , 20' Measured wit Well depth ve	
WELL PURGING		3.31-22 6:10
Purge Method: PERISTALTIC BL	ADDER OTHER	Date: 3-31-22 Start Time: 8:10
Measured Well Depth:	Screen Length:	Depth to Screen Midpoint:
Water Level (feet) 8:25 20.31 8:30 20.31 20.31	Drawdown (feet) Pumping Rate Temp (feet) (ml/min) (°C) 11 250 8.3 11 250 8.4 11 250 8.3	Spec Cond. Diss Oxy pH ORP Turbidity (umho/cm) (mg/l) (S.U.) (mV) (NTU) 1.248 7.08 7.82 112.8 2.75 1.245 7.05 7.82 111.4 2.71
Total Volume Purged (gal):	Stabilization Criteria: +/- 3%	+/- 3% +/- 10% +/- 0.1 Units +/- 10 mV +/- 10 % (if > 0.5 mg/l) (if > 5 NTU) Stabilization Criteria Reference Doc. USEPA EQASOP-GW 001 Rev #3, January 19, 2010
FIELD ANALYSIS	8:35	Audit
Temperature:	### deg. C ### 1.245 ### umhos/cm ### 7.85 S.U.	CALIBRATION CHECK Mark if Standard (conc.) Reading Recalibrated Specific Cond.: umhos/cm Dissolved Oxygen: mg/L pH: mV Eh: mV Turbidity: NTU
SAMPLE COLLECTION	Time: 8:40	Sample Duplicate ?:
Appearance of Sample:	Clear, no odor	Sample Method: L F
1 125 ml s	glass plastic yes no None, HCl, Hr	PRESERVATIVE: PARAMETER: NO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK Sulfolane NO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK Sulfate NO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK Sulfate NO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK NO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK NO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK NO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK NO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK NO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK NO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK NO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK NO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK NO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK NO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK NO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK
Name (SIGNATURE):	- M	of Custody No

CLIENT: Me	erit Energy	Co.			Monitori	ng Location:	Hartla	da	
	390 Lone T					Sample ID:		MW- 138	
	rtland Tow		higan			Well Type:		2" PVC	
	0685.2000	nsinp, wic	iligali			wen Type.			
	0005.2000							^	
INSPECTION		\wedge							
Label on well?	. /	YES NO REMED			Is cement pad in g			YES NO REMEDIE	
Is reference mark visible		YES NO REMED			100	g locked and in goo ce and properly sea	1	YES NO REMEDIE YES NO REMEDIE	
Standing water present? Indication of surface rund		YES NO REMED			Is well casing in vi		alling well:	YES NO REMEDIE	
Repair Notes:	on in weir	TES NO REMED	IED		13 Well edoling III VI	oibly good ropail :			
STATIC WATER	LEVEL								
					Date: 3 - 5	1-22	Time: 9:/	14	
Top of Casing Eleva	ation:				Duto				
Depth to Water:	ation.	19.64'		Measured wi	th:	ELECTRONIC TAPE	CHALKED TAPE	E OTHER	
Elevation of Water:				Well depth ve		YES (NO			
Lievation of trator.									
WELL PURGING	3								
Purge Method: PE		BLADDER	OTHER		Date: 3 - 3	1-22	Start Time:	1:15	
argo mourou.	- CO	08							
Measured Well Dept	th. 32 2	20	Screen Length			Depth to Scree	en Midpoint:		11
ivieasureu vveii Depi	ui. <u>Oa</u>		ocieen Lengui		-	Doptii to corot	on mapoint		7
	Vator Lavel	Drawdows	Pumping Rate	Temp	Spec Cond.	Diss Oxy	рН	ORP	Turbidity
	Vater Level	Drawdown (foot)		(°C)	(umho/cm)	(mg/l)	(S.U.)	(mV)	(NTU)
7: 30	(feet) /9.84	(feet)	(ml/min) -250	8.0	1. 423	9.67	7.18	186.7	4.19
		20	250	8.0	1.493	8.27	7.29	181.3	4.14
	19.84 19.84	20					7.34		4.09
9:40	19.84	20	250	7.9	1.540	8.61		178.3	
9:45	17.89	20	250	1.7	1.581	7.79	7.37	174.7	4.03
							-		
			-						
	2	Stabili	zation Criteria:	+/- 3%	+/- 3%		+/- 0.1 Units	+/- 10 mV	+/- 10 %
Total Volume Purge	d (gal):				0.10	(if > 0.5 mg/l)	- B - HOEBA FO	ACOD OW 004 B	(if > 5 NTU)
FIELD ANALYOL					Stabiliza	ation Criteria Referen	ce Doc. USEPA EQ	ASOP-GW 001 Rev #	rs, January 19, 2010
FIELD ANALYSI	the state of the s	0:11							
	Time:	9:45				CALIBRATIO	ON CHECK		Mark if
	Temperature:	7.9	deg. C			Standard (conc.)	Reading		Recalibrated
Specific C	Conductance:	1.581	umhos/cm				umho	s/cm	
Dissol	lved Oxygen:	7.79	mg/L		Dissolved Oxygen:				
		7.37	S.U.		pH:		S.U.		
	ORP:	174.9	mV		Eh:		mV		
	Turbidity:	4.03	NTU		Turbidity:		NTU		
SAMPLE COLLE	CTION	Time:	9:50			Sample Duplic	ate ?:	00	
Appearance of Samp			no odor			Sample Metho	d:	1	
NO./BOTTLES:	SIZE:	TYPE:	FILTERED:			RVATIVE:		PARAMETER:	
	1000 ml	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄				
1	ml `	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄				
	ml	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄				
	ml	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄				
	ml	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄				
	ml	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄ NO ₃ , NaOH, H ₂ SO ₄				
	ml	glass plastic	yes no		NO_3 , NaOH, H_2SO_4 NO_3 , NaOH, H_2SO_4				
	ml	glass plastic glass plastic	yes no yes no		NO ₃ , NaOH, H ₂ SO ₄ NO ₃ , NaOH, H ₂ SO ₄				
	ml	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄				
	mI	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄				
CAMPLING DED	CONNEL		/	And the second state of th	The second secon		A LINE OF LAND OF STREET		
SAMPLING PER	SUNNEL	N	//	Chair	of Custody No.	•			
Name (SIGNATUR	DE).	-/		Name	(SIGNATURE):				

CLIENT: LOCATION: PROJECT:	Merit Energy 13390 Lone T Hartland Tow 130685,2000	ree Road	nigan		Monitori	ing Location: Sample ID: Well Type:			
INSPECTION			1400		In annual and in a	Criseer beer		ES NO REMEDIE	-6
Label on well?	:-:h1-0	YES NO REMEDI			Is cement pad in g	good repair? ng locked and in go	od renair?	YES NO REMEDIE	
Is reference mark v		YES NO REMEDI			•	ce and properly se		YES NO REMEDIE	
Standing water pres		YES NO REMEDI				isibly good repair?	amig wom.	YES NO REMEDIE	
Repair Notes:	e fulloff iff well:	TES NO REIVIEDI			io from odening in t	icially good repairs			
STATIC WAT	FRIFVE								
OTATIO WAT	LIVELVEE				Date: 3 - 3	1-55	Time:	7:59	
Top of Casing E	Elevation:								
Depth to Water		19.26		Measured wi	th:	ELECTRONIC TAPE	E CHALKED TAP	E OTHER	
Elevation of Wa				Well depth ve		YES NO			
Lievation of tve						20000000			
WELL PURG	ING				3-3	1-27		121-2	
Purge Method:	(PERISTALTIC)	BLADDER	OTHER		Date:	1-22	Start Time:	13:00	
	21.	~? `							
Measured Well	Depth:	₽	Screen Length	:	_	Depth to Scre	en Midpoint: _		_
	Water Level	Drawdown	Pumping Rate	Temp	Spec Cond.	Diss Oxy	рН	ORP	Turbidity
Time	(feet)	(feet)	(ml/min)	(°C)	(umho/cm)	_(mg/l)	(S.U.)	(mV)	(NTU)
13:15	19.30	04	180	8.9	1.028	2.83	6.74	210.0	3.81
13:20	19.30	04	180	8.8	1.024	2.78	6.75	206.4	3.71
13.25	19.30	04	180	8.9	1.020	2.74	6.76	202.9	3.68
12.00	71120								
		-					1		
							_		
		Stabiliz	ation Criteria:	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 Units	+/- 10 mV	+/- 10 %
Total Volume Pu	urged (gal):	25				(if > 0.5 mg/l)			(if > 5 NTU)
	the second section of the second section of the second section of				Stabiliz	ation Criteria Referen	ce Doc. USEPA EC	ASOP-GW 001 Rev	#3, January 19, 2010
FIELD ANAL	YSIS		_						
	Time:	13:25				CALIBRAT	ON CHECK		Mark if
	Temperature:	8.9	deg. C			Standard (conc.)	Reading		Recalibrated
Spec	ific Conductance:	1.020	umhos/cm		Specific Cond.:		umho	os/cm	
	issolved Oxygen:		mg/L		Dissolved Oxygen:				
I	nH·	6.76							
	ODD.	202.9	0.0.						
	Turkidit	3.68	NTU						
	Turbialty.	3.00	NIU		Turbidity.		NIO		1
SAMPLE CO	LLECTION	Time:	13:30			Sample Duplic	cate ?:	J0	
Appearance of S		\	gt, no o	dar		Sample Metho		-	
Appearance of C	bampic		91/100	2101					_
NO./BOTTLES:	SIZE:	TYPE:	FILTERED:			RVATIVE:		PARAMETER:	
1	ml		y s no		INO ₃ , NaOH, H₂SO				
1	_ <u>125</u> ml	glass plastic	yes no		INO ₃ , NaOH, H ₂ SO ₂				
	ml	glass plastic	yes no		INO ₃ , NaOH, H ₂ SO ₂				
	ml	glass plastic	yes no		INO ₃ , NaOH, H₂SO				
	ml	glass plastic	yes no		INO ₃ , NaOH, H ₂ SO ₂				
	ml	glass plastic	yes no		INO ₃ , NaOH, H ₂ SO ₂				
	ml	glass plastic	yes no		INO ₃ , NaOH, H₂SO ₂				
	ml	glass plastic	yes no		INO ₃ , NaOH, H₂SO ₂				
	ml	glass plastic	yes no		INO ₃ , NaOH, H ₂ SO ₂				
	ml	glass plastic	yes no		INO ₃ , NaOH, H ₂ SO ₂				
	ml	glass plastic	yes no		INO ₃ , NaOH, H ₂ SO ₂	- Name			
SAMPLING F	PERSONNEL		1	Chair	n of Custody No				
Name (SIGNA	TUDE):	2	M	Name	(SIGNATURE):				

CLIENT: Merit Energy	Co.	Monitoring Location:					
LOCATION: 13390 Lone T	ree Road	Sample ID:MW/4 &					
The state of the s	nship, Michigan	Well Type:2" PVC					
PROJECT: 130685.2000	,						
INSPECTION							
	YES NO REMEDIED	Is cement pad in good repair?					
Label on well?		Is protective casing locked and in good repair? VES NO REMEDIED					
Is reference mark visible?	YES NO REMEDIED YES NO REMEDIED	Is inner cap in place and properly sealing well? YES NO REMEDIED					
Standing water present? Indication of surface runoff in well?	YES NO REMEDIED YES NO REMEDIED	Is well casing in visibly good repair? YES NO REMEDIED					
Repair Notes:	TES NO NEWEDIES	o non-occuring in vicinity getter repairs					
STATIC WATER LEVEL							
		Date: 3-3/-22 Time: 12:09					
Ten of Cooling Flouration:		bate					
Top of Casing Elevation:	19.17 Measured v	vith: ELECTRONIC TAPE CHALKED TAPE OTHER					
Depth to Water: Elevation of Water:	Well depth						
Elevation of water.	vveii deptii	vermed: TES NO					
WELL PURGING							
	DI ADDED	Date: 5-31-22 Start Time: 12:10					
Purge Method: PERISTALTIC	BLADDER OTHER	Date Start Time					
Measured Well Depth: 45.		Double to Course Mid-Int.					
Measured Well Depth: 73.	Screen Length:	Depth to Screen Midpoint:					
Water Level	Drawdown Pumping Rate Temp	Spec Cond. Diss Oxy pH ORP Turbidit					
Time (feet)	(feet) (ml/min) (°C)	(umho/cm) (mg/l) $(S.U.)$ (mV) (NTU)					
12:25 19.18	01 220 8.7	769 2.19 7.11 174.3 3.24					
12:30 19.18	01 220 8.6	.760 2.13 7.09 171.5 3.17					
12:35 19.18	01 220 8·G	. 756 2.08 7.09 169.3 3.09					
/	Stabilization Criteria: +/- 3%	+/- 3% +/- 10% +/- 0.1 Units +/- 10 mV +/- 10 %					
Total Volume Purged (gal):/-@	<u> </u>	(if > 0.5 mg/l) (if > 5 NT					
		Stabilization Criteria Reference Doc. USEPA EQASOP-GW 001 Rev #3, January 19,					
FIELD ANALYSIS	12:35						
Time:	12:35	CALIBRATION CHECK Mark if					
Temperature:	8.6 deg. C	Standard (conc.) Reading Recalibrated					
Specific Conductance:	. 756 umhos/cm	Specific Cond.: umhos/cm					
Dissolved Oxygen:		Dissolved Oxygen: mg/L					
pH:		pH:S.U.					
ORP:	11.0 =	Eh:mV					
Turbidity:	3.09 NTU	Turbidity: NTU					
i urbidity:	NIU	TorbidityNTO					
SAMPLE COLLECTION	Time: /2:40	Sample Duplicate ?:/Uo					
SAMPLE COLLECTION		Sample Method: LF					
Appearance of Sample:	Clear, no odor	Sample Method.					
NO./BOTTLES: SIZE:	TYPE: FILTERED:	PRESERVATIVE: PARAMETER:					
1 1000 ml		HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK Sulfolane					
11125ml		HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK Sulfate					
ml		HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK					
ml	3	HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK					
ml		HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK					
ml		HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK					
ml	J /	HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK					
ml	-	HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK					
ml		HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK					
ml		HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK					
ml	glass plastic yes no None, HCI,	HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK					
SAMPLING PERSONNEL	Cha	in of Custody No.					
	MA						
Name (SIGNATURE)	Name Name	e (SIGNATURE):					

CLIENT:	Merit Energy	Co.			Monitori	ng Location:				
LOCATION:	N: 13390 Lone Tree Road				Sample ID:MW15d					
	Hartland Township, Michigan					Well Type:		2" PVC		
PROJECT:	130685.2000									
INSPECTION								0:		
Label on well?		YES NO REMEDI	ED.		Is cement pad in g	good repair?		YES NO REMEDIE	ED	
Is reference mark vi	sible?	YES NO REMEDI	ED.		Is protective casin	g locked and in go	od repair?	YES NO REMEDIA	ED	
Standing water pres	ent?	YES NO REMEDI	ED		Is inner cap in place		aling well?	YES NO REMEDI		
Indication of surface	runoff in well?	YES NO REMEDI	ĒD		Is well casing in vi	sibly good repair?	(YES NO REMEDI	ED .	
Repair Notes:	ED LEVEL									
STATIC WAT	ERLEVEL				Date:	1-53	Time: 9:0	24		
	9				Date:		Time			
Top of Casing E		18.90		Measured wit	th:	ELECTRONIC TAPI	HALKED TAP	F OTHER		
Depth to Water: Elevation of Wa		10.00		Well depth ve		YES (NO	DINERED IN	L OTTLER		
Elevation of wa	ier.			vvon depar v	ormod .	120 (10)				
WELL PURG	ING									
Purge Method:	-	BLADDER	OTHER		Date: 4-	-55	Start Time:	1:45	-	
Purge Method.	PERISTALTIC	BLADDER	OTTIER						-	
Managered Well F	Depth: 46. (Y 1	Screen Length			Depth to Scre	en Midpoint			
ivieasured vvell L	Jepui. 10.	~	ooreen Length		_	Dopar to dole	apoiiit		-	
	Motor Lavel	Drawdows	Pumping Rate	Temp	Spec Cond.	Diss Oxy	pН	ORP	Turbidity	
T:	Water Level			(°C)	(umho/cm)	(mg/l)	(S.U.)	(mV)	(NTU)	
Time	(feet) 18.95	(feet)	(ml/min) /& 6	8.9	.563	/·08	7.41	230.9	3.24	
10:00	18.95	05	180	8.8	.560	1.06	7.40	231.7	3.16	
10:05	18.95	05	180	6 6	·557	1.05	7.39	232.6	3. 11	
10:10	18.73	02	180	0.0	• 23 (7.03	7.3	a 30.0		
					- 0					
									7	
							. / 0 4 11-3-	./ 40>/	-/ 10.0/	
		Stabiliz	ation Criteria:	+/- 3%	+/- 3%	+/- 10% (if > 0.5 mg/l)	+/- 0.1 Units	+/- 10 mV	+/- 10 % (if > 5 NTU)	
Total Volume Pu	irged (gal):	_			Stabiliza	,	nce Doc. USEPA EQ	ASOP-GW 001 Rev	#3, January 19, 2010	
FIELD ANAL	Veie			Page Autority Personal						
FIELD ANAL		10:10				CALIBRAT	ION CHECK		Mark if	
	Time:	0.0					ION CHECK		Recalibrated	
	Temperature:		deg. C		0 21 0 21	Standard (conc.)	1		Recalibrated	
Speci	fic Conductance:	1.4	umhos/cm					os/CIII		
Di	ssolved Oxygen:		mg/L		Dissolved Oxygen:					
	pH:		S.U.							
		232.6	mV				160000-00000			
	Turbidity:	3.11	NTU		Turbidity:		NTU			
	1 =0=:0::		10:10			Comple Deal	noto ?:	10		
SAMPLE CO		Time: _	10:15			Sample Dupli	A 400			
Appearance of S	Sample:	Clear,	COOL L			Sample Metho	oa:	-	_	
NO (POTTI FO	SIZE:	TYPE:	FILTERED:		PRESE	RVATIVE:		PARAMETER:		
NO./BOTTLES:	1000 ml	glass plastic	yes no	None, HCI, H	INO ₃ , NaOH, H ₂ SO ₄					
1	125ml	glass plastic	yes no		INO ₃ , NaOH, H ₂ SO ₄					
	ml	glass plastic	yes no		INO ₃ , NaOH, H ₂ SO ₄					
	ml	glass plastic	yes no	None, HCI, H	INO ₃ , NaOH, H₂SO ₄	, ZnAc, TSP, BAK				
	ml	glass plastic	yes no		INO ₃ , NaOH, H ₂ SO ₄					
	ml	glass plastic	yes no		INO ₃ , NaOH, H ₂ SO ₄					
	ml	glass plastic	yes no		INO ₃ , NaOH, H ₂ SO ₄					
	ml	glass plastic	yes no		INO ₃ , NaOH, H ₂ SO ₄					
	ml	glass plastic	yes no		INO ₃ , NaOH, H ₂ SO ₄					
	ml	glass plastic	yes no		INO₃, NaOH, H₂SO₄ INO₃, NaOH, H₂SO₄					
		glass plastic	yes no							
SAMPLING P	ERSONNEL	w/		Chair	n of Custody No	·				
Name (SIGNA	TURE)	7.	NU	Name	(SIGNATURE):					

		Monitoring Location: Sample ID:MWi 7 \$ Well Type:2" PVC					
INSPECTION Label on well? Is reference mark visible? Standing water present? Indication of surface runoff in well? Repair Notes:	YES NO REMEDIED YES NO REMEDIED YES NO REMEDIED YES NO REMEDIED	Is cement pad in good repair? Is protective casing locked and in good repair? Is inner cap in place and properly sealing well? Is well casing in visibly good repair? YES NO REMEDIED NO REMEDIED YES NO REMEDIED					
Top of Casing Elevation: Depth to Water: Elevation of Water:	17.58 Measured Well dept	Date: 3-31-22 Time: 10:19 With: ELECTRONIC TAPE CHALKED TAPE OTHER h verified? YES NO					
WELL PURGING Purge Method: PERISTALTIC	BLADDER OTHER	Date: 3-31-22 Start Time: 10:20					
Measured Well Depth:	Screen Length:	Depth to Screen Midpoint:					
Time (feet) 10:35 10:40 17.93 17.93	Drawdown (feet) Pumping Rate Temp - 05 140 9.4 - 05 140 8.4 - 05 140 8.3	(umho/cm) (mg/l) (S.U.) (mV) (NTU)					
Total Volume Purged (gal):	25—Stabilization Criteria: +/- 3%	(if > 0.5 mg/l) $(if > 5 NTU)$					
FIELD ANALYSIS		Stabilization Criteria Reference Doc. USEPA EQASOP-GW 001 Rev #3, January 19, 2010					
Time: Temperature: Specific Conductance: Dissolved Oxygen: pH: ORP: Turbidity:	4.06 mg/L 7.43 s.u. /97.2 mv	CALIBRATION CHECK Mark if Standard (conc.) Reading Recalibrated Specific Cond.:					
SAMPLE COLLECTION Appearance of Sample:	Time: 10:50	Sample Duplicate ?: No Sample Method: LF					
NO/BOTTLES: SIZE:	glass plastic glass plastic glass plastic glass plastic glass plastic yes no glass plastic yes no None, H	PRESERVATIVE: PARAMETER: CI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK CI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK CI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK CI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK CI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK CI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK CI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK CI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK CI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK CI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK CI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK CI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK CI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK					
SAMPLING PERSONNEL Name (SIGNATURE):	M. C	hain of Custody No me (SIGNATURE):					

CLIENT: LOCATION:						Monitoring Location:				
PROJECT:	130685.2000									
INSPECTION Label on well? Is reference mark vi Standing water pres Indication of surface Repair Notes:	sible?	YES NO REMED YES NO REMED YES NO REMED YES NO REMED	ED			ig locked and in go ce and properly se		YES NO REMEDIE YES NO REMEDIE YES NO REMEDIE	D D	
STATIC WAT	ER LEVEL				7 7	1 22	11			
Top of Casing E Depth to Water: Elevation of Wa		18.83'		Measured wit		ELECTRONIC TAP	Time:	,		
WELL PURG					Date: 3 · 3	1-22	Start Time:	1:15		
Purge Method:		BLADDER	OTHER		Date:		Start Time:	(1)		
Measured Well [Depth: 40.7	8	Screen Length	:	_	Depth to Scre	en Midpoint: _		_	
Time (1:30 /):35 //:40	Water Level (feet) (8.44 (8.44 (8.44)	Drawdown (feet) - !) - ! !	Pumping Rate (ml/min) _/\$0 _/\$0 _/\$0	7emp 9.1 9.0 9.0	Spec Cond. (umho/cm) . (44) . (539 . (536	Diss Oxy (mg/l) /. 56 /. 53	pH (S.U.) 7. 41 7. 41	ORP (mV) /98.1 /97.3 /96.9	Turbidity (NTU) / 4 . 2 / 3 . 4	
Total Volume Pu	urged (gal):	Stability 1.5	zation Criteria:	+/- 3%	+/- 3%	+/- 10% (if > 0.5 mg/l)	+/- 0.1 Units	+/- 10 mV	+/- 10 % (if > 5 NTU)	
FIELD ANAL	YSIS I				Stabiliza	ation Criteria Referer	ice Doc. USEPA EQ	ASOF-GW 001 Rev 7	73, January 19, 2010	
Speci	Time: Temperature: fic Conductance: ssolved Oxygen: pH:	7.41 196.9	S.U.		Dissolved Oxygen: pH: Eh:	Standard (conc.)	mg/L S.U. mV	os/cm	Mark if Recalibrated	
SAMPLE CO	LLECTION	Time: _				Sample Duplic		76		
Appearance of S NO./BOTTLES: 1 1	SIZE: 1000 ml 125 ml ml	TYPE:	FILTERED: yes no yes no	None, HCl, H None, HCl, H	PRESEF NO $_3$, NaOH, H $_2$ SO $_4$ NO $_3$, NaOH, H $_2$ SO $_4$ NO $_3$, NaOH, H $_2$ SO $_4$ NO $_3$, NaOH, H $_2$ SO $_4$, ZnAc, TSP, BAK , ZnAc, TSP, BAK		PARAMETER: Sulfolane Sulfate		
	ml	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄					
	ml ml ml ml	glass plastic glass plastic glass plastic glass plastic glass plastic	yes no yes no yes no yes no yes no	None, HCI, H None, HCI, H None, HCI, H	NO_3 , $NaOH$, H_2SO_4	, ZnAc, TSP, BAK , ZnAc, TSP, BAK , ZnAc, TSP, BAK				
	ml	glass plastic	yes no	None, HCl, H	NO ₃ , NaOH, H ₂ SO ₄	, ZnAc, TSP, BAK				
SAMPLING P		7.1	LA O		of Custody No					

CLIENT:	Merit Energy	Co.			Monitor	ing Location:			
LOCATION:	13390 Lone T					Sample ID:		_MW <i> 8</i>	
	Hartland Tow		higan			Well Type:		2" PVC	
PROJECT:	130685.2000	momp, wie	ingun						
								Company of the State of the Sta	
INSPECTION		2						\bigcirc	
Label on well?		YES NO REMED	DIED		Is cement pad in			YES NO REMEDIE	
Is reference mark v	risible?	YES NO REMED	DIED			ng locked and in go		YES NO REMEDIE	
Standing water pres		YES NO REMED				ce and properly se	aling well?	YES NO REMEDIE	
Indication of surface	e runoff in well?	YES NO REMED	DIED		Is well casing in v	isibly good repair?		YES NO REMEDIE	ED .
Repair Notes:									
STATIC WAT	ER LEVEL	-			(1)	1-22	9	29	
					Date:	12	Time:	2	
Top of Casing E	Elevation:								
Depth to Water		20.30'		Measured wi	th:	ELECTRONIC TAPI	CHALKED TAPI	E OTHER	
Elevation of Wa	ater:			Well depth ve	erified?	YES NO			
WELL PURG	ING				/1 1	2.2		0.72	
Purge Method:	PERISTALTIC	BLADDER	OTHER		Date: 9-1	-52	Start Time:	3,20	
			· · · · · · · · · · · · · · · · · · ·		-				
Magazirad Mail	Depth: <u>27.</u>	50	Screen Length	· ·		Depth to Scre	en Midnoint		
ivieasured vveii	Deptri: 🗪 🗼		Screen Length	'	-	Deptil to ocic	en maponit		-
				_	0	Di- C	-11	000	T,
	Water Level	Drawdown	Pumping Rate		Spec Cond.	Diss Oxy	pН	ORP	Turbidity
Time	(feet)	(feet)	(ml/min)	(°C)	(umho/cm)	(mg/l)	(S.U.)	(mV)	(NTU)
8:45	20.33	03	250	8.1	.486	5.17	7.31	116.8	991
8:56	20-53	03	250	8.0	. 479	5.14	\$. 7.30	115.1	8.94
8:55	20.53	03	250	8.1	.475	5.12	7. 30	114.6	8.22
					. 471	5.10	7.29	113.8	8.06
9:00	20.53	03	250	8.1	. 911	3.10	1,021	113.0	
									100
									-
	-							-	
	2	Stabili	zation Criteria:	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 Units	+/- 10 mV	+/- 10 %
Total Volume Pu	urged (gal): ≪	<u> </u>				(if > 0.5 mg/l)			(if > 5 NTU)
					Stabiliz	ation Criteria Referen	ice Doc. USEPA EQ.	ASOP-GW 001 Rev	#3, January 19, 2010
FIELD ANAL	YSIS	00.00							
	Time:	9:00				CALIBRATI	ON CHECK		Mark if
	Temperature:	8.1	deg. C			Standard (conc.)	Reading		Recalibrated
0					Cassifia Cond			s/cm	
	ific Conductance:		umhos/cm					5/0111	
D	issolved Oxygen:		mg/L		Dissolved Oxygen:				
	pH:	7.29	S.U.		pH:		S.U.		
	ORP:	113.8	mV		Eh:		mV		
	Turbidity:	8.06	NTU						
	, a. biany.				,				
SAMPLE CO	LLECTION	Time:	9:05			Sample Duplic	cate ?:	0	ar anticon of the training of the School of the Commonweal Control of the School of th
The state of the s			, 10 00	-		Sample Metho			
Appearance of S	sample:	Ciedi) //0 000) (Sample Metric	ou		-
NO POTTI TO	0175	TVDE	EII TERED.	<u> </u>	DDECE	RVATIVE:		PARAMETER:	
NO./BOTTLES:	SIZE: 	TYPE:	FILTERED:	No. Holli	NO ₃ , NaOH, H ₂ SO ₂				
1					NO ₃ , NaOH, H ₂ SO ₂				
	ml	glass plastic							
	ml	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₂				
	ml	glass plastic	yes no		NO ₃ , NaOH, H₂SO ₂				
	ml	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₂				
	ml	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₂				
	ml	glass plastic	yes no	None, HCI, H	NO ₃ , NaOH, H ₂ SO ₂	, ZnAc, TSP, BAK			
	ml	glass plastic	yes no	None, HCI, H	NO ₃ , NaOH, H ₂ SO ₂	, ZnAc, TSP, BAK			
	ml	glass plastic	yes no	None, HCl, H	NO ₃ , NaOH, H₂SO₂	, ZnAc, TSP, BAK			
	mi	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₂				
	mi	glass plastic	yes no	None, HCI, H	NO ₃ , NaOH, H ₂ SO ₂	, ZnAc, TSP, BAK			
SAMDI INC P	EDSONNEL					Barriel and Advice to Secure 1991			
SAMPLING P	CKOUNNEL		1.1		of Custody No				
Name (SIGNA	TURE).	1.	DV -	Name	(SIGNATURE):				

Merit Low Flow Logs

4/1/2022, 7:46 AM

CLIENT:	Monitoring Location:							
LOCATION:	Merit Energy 13390 Lone T		Sample ID:MW195					
		nship, Michigan			Well Type:		2" PVC	
PROJECT:	130685.2000							
INSPECTION							1	
		1		In a constant and in a	h		CO NO DEMEDIE	
Label on well?		YES NO REMEDIED		Is cement pad in g		od roppir?	YES NO REMEDIE	
Is reference mark v		YES NO REMEDIED		THE RESIDENCE	ig locked and in go ce and properly se		YES NO REMEDIE YES NO REMEDIE	
Standing water pres		YES NO REMEDIED			isibly good repair?	aiii ig weii :	YES NO REMEDIE	
Indication of surface Repair Notes:	e runoπ in weii?	YES NO REMEDIED		is well casing in vi	isibiy good repair :		TES NO NEMEDIC	
STATIC WAT	ERIEVEL							
OTATIO WAT	LIVELVEL			Date: 3-4	1-1-22	Time: //)	:49	
T (0 : 5	-1			Date.		Time		
Top of Casing E		21.42'	Managerad	th	ELECTRONIC TAPE	OLIAL KED TAD	E OTHER	
Depth to Water		21, 40	Measured wi			CHALKED TAP	E OTHER	1 1 1
Elevation of Wa	iter:		Well depth v	erilled?	YES MO			
WELL BURG	INC							
WELL PURG				Date: 4-1-	27-		10:50	
Purge Method:	PERISTALTIC	BLADDER OTHER		Date:		Start Time:	10.50	
	21	27						
Measured Well I	Depth: 30 . 2	Screen Ler	ngth:	_	Depth to Screen	en Midpoint: _		_
	Water Level	Drawdown Pumping R	ate Temp	Spec Cond.	Diss Oxy	рН	ORP	Turbidity
Time	(feet)	(feet) (ml/min)		(umho/cm)	(mg/l)	(S.U.)	(mV)	(NTU)
11:05		22 225	8.3	,504	11.21	7.89	215.1	9.76
11:10	21.64	22 225	8.2	. 507	11.20	7.91	216.8	9.64
11:15	21.64	22 225	8. 2	, 510	11.18	7.42	217.7	9.41
11:13	×1.09		<u> </u>	70.0	11.70			
	-							
			_					
			_					
					-			-
		Stabilization Criter	ria: +/- 3%	+/- 3%	+/- 10%	+/- 0.1 Units	+/- 10 mV	+/- 10 %
Total Volume Pเ	urged (gal):	5 Glabilization Griton	ia. 7 070		(if > 0.5 mg/l)			(if > 5 NTU)
	9 (9/-			Stabiliza	ation Criteria Referen	ce Doc. USEPA EQ	ASOP-GW 001 Rev #	‡3, January 19, 2010
FIELD ANAL	YSIS							
	Time:	11:15			CALIBRATI	ON CHECK		Mark if
		67						Recalibrated
	Temperature:				Standard (conc.)	Reading		
	fic Conductance:		cm				IS/CITI	
Di	issolved Oxygen:			Dissolved Oxygen:				
	pH:	7.92 s.u.		pH:		S.U.		
	ORP:			Eh:		mV		
	Turbidity:	9.41 NTU		Turbidity:		NTU		
	• //							
SAMPLE CO	LLECTION	Time: 11:20			Sample Duplic	cate ?:^	10	
Appearance of S		Clear , no o	dor		Sample Metho	od:		
1	F							
NO./BOTTLES:	SIZE:	TYPE: FILTERED			RVATIVE:		PARAMETER:	
1	1000 ml	glass plastic yes no		INO₃, NaOH, H₂SO₄				
1	<u>125</u> ml	glass plastic yes no	None, HCI, H	INO₃, NaOH, H₂SO₄	, ZnAc, TSP, BAK		Sulfate	
	ml	glass plastic yes no		INO ₃ , NaOH, H₂SO ₄				
	ml	glass plastic yes no		INO ₃ , NaOH, H₂SO ₄				
	ml	glass plastic yes no		INO ₃ , NaOH, H₂SO ₄				
	ml	glass plastic yes no		INO ₃ , NaOH, H ₂ SO ₄				
	ml	glass plastic yes no		INO ₃ , NaOH, H ₂ SO ₄				
	ml	glass plastic yes no		INO ₃ , NaOH, H ₂ SO ₄				
	ml	glass plastic yes no		INO ₃ , NaOH, H ₂ SO ₄				
	ml	glass plastic yes no		INO ₃ , NaOH, H ₂ SO ₄				
	mi	glass plastic yes no	None, HCl, H	INO ₃ , NaOH, H ₂ SO ₄	, ZnAc, TSP, BAK			
SAMPLING P	ERSONNEL	-11	Chair	of Custody No				
		1.11						
Name (SIGNA	TURE):	19-1	Name	(SIGNATURE):				

CLIENT: Merit Energy Co.					Monitoring Location:						
LOCATION:	13390 Lone 1	ree Road				Sample ID:		MW- 192			
	Hartland Tow		igan			Well Type:		2" PVC			
PROJECT:	130685.2000	momp, mom	.9			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					
INSPECTION		~									
Label on well?		YES NO REMEDIE			Is cement pad in g			ES NO REMEDIE			
Is reference mark v		YES NO REMEDIE			•	ng locked and in go		YES NO REMEDIE			
Standing water pres		YES NO REMEDIE				ce and properly se	_	YES NO REMEDIE			
Indication of surface	e runoff in well?	YES NO REMEDIE	D		is well casing in v	isibly good repair?		YES NO REMEDIE	.D		
Repair Notes:	ED LEVEL						the said of the sa				
STATIC WAT	EK LEVEL				Date: 4-1	-77		44			
					Date:		Time:	1			
Top of Casing E	Elevation:	4			_						
Depth to Water		21.35		Measured wi			E CHALKED TAP	E OTHER			
Elevation of Wa	ater:			Well depth ve	erified?	YES NO					
WELL PURG	ING				(1)	-77		11.11.			
Purge Method:	PERISTALTIC)	BLADDER (OTHER		Date:	- 22	Start Time:	11:45			
Measured Well	Depth: <u>50</u> ,	00	Screen Length	1.		Depth to Scre	en Midpoint:				
ivicasured vveil i	Depui. J J ,	`	Jorden Lengt		_	2001110 0016			-		
				T	C	Dias O.	للم	OPP	Turkidita		
	Water Level		Pumping Rate		Spec Cond.	Diss Oxy	pH (Q.L.)	ORP	Turbidity		
Time	(feet)	(feet)	(ml/min)	(°C)	(umho/cm)	(mg/l)	(S.U.)	(mV)	(NTU)		
12:00	21.39	04	250	8.4	1812	4.64	7.46	146.2	4.91		
12:05	21.39	04	250	8.5	. 814	4.61	7.46	143.5	4.70		
12:10	21.39	04	250	8.4	.817	4.57	745	140.9	4.22		
12.10	21.21		0	0. 1			1				
	-										
								х			
								A			
	,	Stabiliza	ation Criteria:	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 Units	+/- 10 mV	+/- 10 %		
Total Volume Pเ	urged (gal):/.	75				(if > 0.5 mg/l)			(if > 5 NTU)		
					Stabiliz	ation Criteria Referer	nce Doc. USEPA EQ	ASOP-GW 001 Rev	‡3, January 19, 2010		
FIELD ANAL	YSIS	10.15									
	Time:	12:10				CALIBRAT	ION CHECK		Mark if		
	Temperature:	8.4	deg. C			Standard (conc.)	Reading		Recalibrated		
C		.817			Specific Cond :		1	se/em			
	ific Conductance:		umhos/cm					iorolli			
D	issolved Oxygen:	4.57	mg/L		Dissolved Oxygen:						
	pH:	7.45	S.U.		pH:		S.U.				
	ORP:	140.9	mV		Eh:		mV				
	Turbidity:	4.22	NTU								
	. c. blany.										
SAMPLE CO	LLECTION	Time:	12:15			Sample Dunli	cate ?:	Ö			
		Clear		dor		Sample Metho					
Appearance of S	sample	ر اوم ا	, ,,,,	001		Cample Well	Ju		-		
NO /POTTI FO	C17E-	TYPE:	FILTERED:		DRESE	RVATIVE:		PARAMETER:			
NO./BOTTLES:	SIZE: 	glass plastic	y s no	None HCI H	NO ₃ , NaOH, H ₂ SO ₄						
1		glass plastic	yes no	The state of the s	NO ₃ , NaOH, H ₂ SO ₄						
	ml				NO ₃ , NaOH, H ₂ SO ₄						
	1	glass plastic	yes no		-						
	ml	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄						
	mi	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄						
	ml	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄						
	ml	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄						
	ml	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄						
	ml	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄						
	ml	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄						
	ml	glass plastic	yes no	None, HCI, H	NO ₃ , NaOH, H ₂ SO ₄	, ZnAc, TSP, BAK					
SAMPLING P	ERSONNEI	_ //	1	Chair	of Custody No						
CAMIL FING L	LITOURINEL	1 N	#								
Name (SIGNA		14 -Fta		A	(SIGNATURE):				1		

CLIENT: Merit Energy	Co.	Monitoring Location:					
LOCATION: 13390 Lone T		Sample ID:MW- 20s					
	nship, Michigan	Well Type:2" PVC					
PROJECT: 130685.2000	, ,						
INSPECTION							
	AND REMEDIED	Is cement pad in good repair?					
Label on well? Is reference mark visible?	YES NO REMEDIED YES NO REMEDIED	Is protective casing locked and in good repair? VES 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		7 71 22 / 171/16					
		Date: 3-31-22 Time: 13:49					
Top of Casing Elevation:							
Depth to Water:	20 · 59 Measu	red with: ELECTRONIC TAPE CHALKED TAPE OTHER					
Elevation of Water:	Well de	epth verified? YES NO					
WELL PURGING		2 71 -22 17 (5)					
Purge Method: PERISTALTIC	BLADDER OTHER	Date: 3-31-22 Start Time: 13:50					
Measured Well Depth: 25, 1	Screen Length:	Depth to Screen Midpoint:					
Wicasured Well Depth.							
Water Level	Drawdown Pumping Rate Te	mp Spec Cond. Diss Oxy pH ORP Turbidity					
and the second s		,					
Time (feet) 14:05 20.66	(feet) (ml/min) (°0	5628 9.50 7.78 212.4 3.47					
	07 180 8.						
14:15 20.66	07 180 8.	de .621 /.54 /.11 sou.4 5.41					
	Stabilization Criteria: +/-						
Total Volume Purged (gal): /,	<u>2</u> 5	(if > 0.5 mg/l) $(if > 5 NTU)$					
TITLE AND		Stabilization Criteria Reference Doc. USEPA EQASOP-GW 001 Rev #3, January 19, 2010					
FIELD ANALYSIS	14:15						
Time:		CALIBRATION CHECK Mark if					
Temperature:	8.6 deg. C	Standard (conc.) Reading Recalibrated					
Specific Conductance:	.621 umhos/cm	Specific Cond.:umhos/cm					
Dissolved Oxygen:	9. 39 mg/L	Dissolved Oxygen: mg/L					
pH:	7.79 s.u.	pH:S.U.					
ORP:	206.4 mv	Eh:mV					
Turbidity:	3.41 NTU	Turbidity: NTU					
SAMPLE COLLECTION	Time: 14):20	Sample Duplicate ?:NO					
Appearance of Sample:	Clear, no odor	Sample Method:					
	,						
NO./BOTTLES: SIZE:	TYPE: FILTERED:	PRESERVATIVE: PARAMETER:					
1ml		HCI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK Sulfolane					
1		HCI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK Sulfate					
ml	3	HCI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK					
ml	,	HCI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK					
ml		HCI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK					
ml	3	HCI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK					
ml	3	HCI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK					
ml	,	HCI, HNO ₃ , NaOH, H ₂ SO ₄ , ZNAC, TSP, BAK					
ml		HCI, HNO ₃ , NaOH, H ₂ SO ₄ , ZIAC, TSP, BAK					
ml		HCI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK					
	Just plant yes in items						
SAMPLING PERSONNEL	1/11	Chain of Custody No					
Name (SIGNATURE):	/y fat	Name (SIGNATURE):					

CLIENT:	Merit Energy	Co.			Monitori	ng Location:		0	
LOCATION:	13390 Lone 7	Tree Road				Sample ID:			
	Hartland Tow	vnship, Mich	nigan			Well Type:		2" PVC	
PROJECT:	130685.2000								
INSPECTION								5	
Label on well?		YES NO REMEDI	ED		Is cement pad in g	good repair?		YES NO REMEDIE	:D
Is reference mark v	visible?	YES NO REMEDI	ED		Is protective casin	g locked and in go	od repair?	YES NO REMEDIE	D
Standing water pres	sent?	YES NO REMEDI	ED			ce and properly se		YES NO REMEDIE	
Indication of surface	e runoff in well?	YES NO REMEDI	ED		Is well casing in vi	isibly good repair?		YES NO REMEDIE	D
Repair Notes:	ED LEVEL								
STATIC WAT	EK LEVEL				Date: 3	71-22	- 141	: LILL	
					Date:	-	Time:		
Top of Casing E		20 110							
Depth to Water		20.45		Measured wit			E CHALKED TAPI	E OTHER	
Elevation of Wa	ater:			Well depth ve	erified?	YES NO			
WELL PURG	ING _	Ī							_
		I			Date: 3-3	31-22	Ctart Times	14:45	
Purge Method:	PERISTALTIC	BLADDER	OTHER		Date:		Start Time:	1 (
Measured Well	Depth:		Screen Length	1:	-	Depth to Scre	en Midpoint: _		-
	Water Level	Drawdown	Pumping Rate		Spec Cond.	Diss Oxy	рН	ORP	Turbidity
Time	(feet)	(feet)	(ml/min)	(°C)	(umbo/cm)	(mg/l)	(S.U.)	(mV)	(NTU)
15:00	21.46	-1.01	220	8.5		EN 5,63		184.7	14.9
15:05	21.46	-1.01	220	8.9	, 630	5.58	7.81	183.1	13.7
15:10	21.46	-1.01	220	8.4	,628	5.50	7.80	182.2	13.2
						1			
					1				
			zation Criteria:	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 Units	+/- 10 mV	+/- 10 %
Total Volume Pเ	urged (gal):_/.	5				(if > 0.5 mg/I)			(if > 5 NTU)
EIEL D. ANIAL	V(010				Stabiliza	ation Criteria Referer	nce Doc. USEPA EQ	ASOP-GW 001 Rev	3, January 19, 2010
FIELD ANAL		ور سرر							
	Time:	A 1 1				CALIBRAT	ION CHECK		Mark if
	Temperature:	8.4	deg. C			Standard (conc.)	1		Recalibrated
Spec	ific Conductance:	. 628	umhos/cm		Specific Cond.:		umho	os/cm	
D	issolved Oxygen:	3.56	mg/L		Dissolved Oxygen:		mg/L		
	pH:	7.80	S.U.						
	ORP:	182.2	mV		Eh:		mV		
	Turbidity:	13.2	NTU		Turbidity:		NTU		
		and the second of a fill the second						_	
SAMPLE CO	LLECTION	Time:_	15:15			Sample Duplic	1 -	00	
Appearance of S	Sample:	<u> </u>	ear, no	0000		Sample Metho	od:		- ' , ' , ' , '
						N/A TIN/E		DADAMETER	
NO./BOTTLES:	SIZE: 	TYPE:	FILTERED:	Note HOLDING	PRESEF NO $_3$, NaOH, H $_2$ SO $_4$	RVATIVE:		PARAMETER: Sulfolane	
1			yes no	Consumer of the Consumer of th	NO ₃ , NaOH, H ₂ SO ₄ NO ₃ , NaOH, H ₂ SO ₄				
	ml		yes no		NO ₃ , NaOH, H ₂ SO ₄				
	ml	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄				
	ml	-	yes no		NO ₃ , NaOH, H ₂ SO ₄				
	ml	0	yes no		NO ₃ , NaOH, H ₂ SO ₄				
	ml	glass plastic	yes no	None, HCI, HI	NO ₃ , NaOH, H ₂ SO ₄	, ZnAc, TSP, BAK			
	ml	3	yes no	None, HCI, HI	NO ₃ , NaOH, H ₂ SO ₄	, ZnAc, TSP, BAK			
	mI	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄				
	ml	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄				
	ml	glass plastic	yes no	None, HCI, HI	NO ₃ , NaOH, H ₂ SO ₄	, ∠nAc, 1SP, BAK			
SAMPLING F	PERSONNEL		1/1	Chain	of Custody No				
Name (SIGNA		1.	MA	Name (SIGNATURE):				
I MAINE (SIGNA	II UIL.	14 1		raine (