November 29, 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 - 3rd Quarter 2022

Hartland 36 Gas Plant
Portion of E½ of NW ¼ of Section 36, T03N-R06E
Hartland Township, Livingston County, Michigan

Dear Mr. Kidder:

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

ECT sincerely appreciates the opportunity to provide our consulting services on this important project. Should you have questions or require additional information, please do not hesitate to contact me at (231) 676-3023 or 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 – 3rd Quarter 2022





3399 Veterans Drive, Traverse City, Michigan 49684

QUARTERLY PROJECT UPDATE REPORT 3rd 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

November 29, 2022

ECT No. 13-0685-2000

DOCUMENT REVIEW

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

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

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



TABLE OF CONTENTS

<u>Section</u>		<u>Page</u>
1.0	INTRODUCTION	1
2.0	PROJECT LOCATION	1
3.0	PROJECT SUBMITTALS	1
4.0	PROJECT OVERVIEW	2
5.0	REMEDIATION SYSTEM OPERATION AND MAINTENANCE	3
6.0	PERFORMANCE MONITORING SUMMARY	3
	 6.1 PERFORMANCE MONITORING EVENTS. 6.2 LABORATORY ANALYSIS. 6.3 CLEANUP GOALS. 6.4 GROUNDWATER ANALYTICAL SUMMARY & CLEANUP CRITERIA COMPARISON. 	4 4
7.0	CONCLUSIONS AND RECOMMENDATIONS	5
8.0	SCHEDULE	6
	LIST OF APPENDICES	

					1		
Α	10	n	e_1	n	d	13	7

- A FIGURES
- B TABLES
- C LABORATORY ANALYTICAL REPORTS
- D LOW-FLOW SAMPLING FIELD FORMS



1.0 INTRODUCTION

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

2.0 PROJECT LOCATION

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

3.0 PROJECT SUBMITTALS

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

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



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

4.0 PROJECT OVERVIEW

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

In general, operations at the Site included crude oil and brine separation and storage, natural gas compression, dehydration, sweetening (hydrogen sulfide [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 2^{nd} Quarter 2022 indicate the remediation system has reduced concentrations of sulfolane in groundwater to non-detectable levels. The remediation system has remained off since December 6, 2021, when the system was shut down to allow subsurface conditions to stabilize prior to the 4^{th} Quarter 2021 performance monitoring event. Laboratory analytical results from the 2^{nd} Quarter 2022 monitoring event completed on July 5-6, 2022 reported sulfolane non-detect from all 14 of the monitor wells that previously reported sulfolane above the cleanup goal (i.e. analytical target detection limit, $10 \, \mu g/L$). MW-13D and MW-17D reported concentrations of sulfate (510 mg/L and 300 mg/L, respectively) above the cleanup goal (250 mg/L). Refer to the Quarterly Project Update Report – 2^{nd} Quarter 2022 dated August 15, 2022 for a summary of results of performance monitoring events completed through the 2^{nd} Quarter 2022.

5.0 REMEDIATION SYSTEM OPERATION AND MAINTENANCE

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

6.0 PERFORMANCE MONITORING SUMMARY

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

6.1 PERFORMANCE MONITORING EVENTS

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

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



6.2 LABORATORY ANALYSIS

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

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

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

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

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

6.3 CLEANUP GOALS

The EGLE-OGMD established an interim drinking water criterion for sulfolane of 90 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 3rd Quarter 2022. Additional discussion is provided for monitor wells that are not included as part of the quarterly performance monitoring program.



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

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

Monitor wells screened below the lower clay confining layer

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

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

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

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

7.0 CONCLUSIONS AND RECOMMENDATIONS

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



of sulfolane reported at MW-14S subsequent to the pre-remediation system startup sampling event was $120 \,\mu g/L$.

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

8.0 SCHEDULE

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

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



APPENDIX A FIGURES



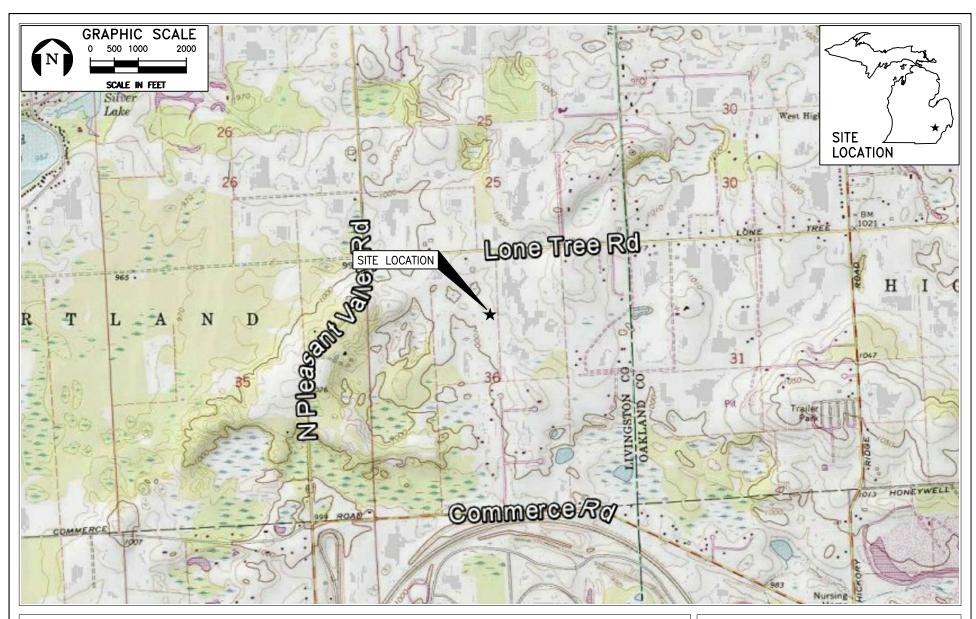


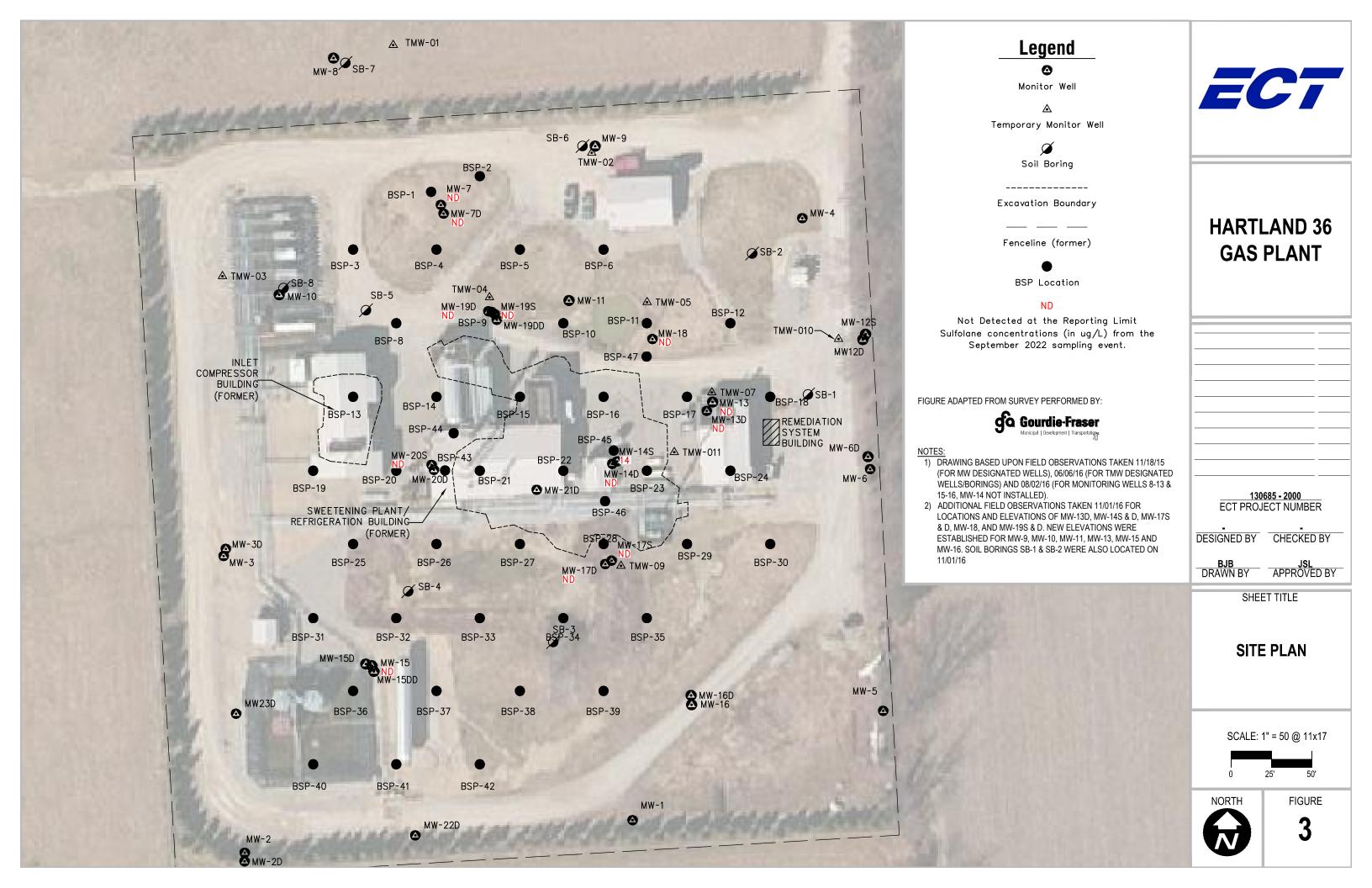
FIGURE 1
SITE LOCATION MAP
HARTLAND 36 GAS PLANT
PORTION OF E 1/2 OF NE 1/4 OF SECTION 36, T03N-R06E
HARTLAND TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN
Source: USGS QUad: Kent Lake, 2015; West Highland, 2015; ECT, 2016.





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 & CLEANUI	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 #1:	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																												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																													0.74	
12/28-29/2021																												ND	8.74	42
2/10/22																													44.04	
3/31-4/01/2022																												ND	11.84	23
7/05-06/2022 9/28-29/2022																												ND	8.61	31
																												ND	3.22	230
% Decrease																														
Sulfolane Criterion (µg/L)																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
	2,400																						-				
2/13/20 3/5-6/20	1,500																										
3/5-6/20 4/2/20	ND 330	12.14	32																			ND	28.96	91	ND 16	7.08	920
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 ND	3.70	92	ND ND	2.92	510
10/23/20		12.30				-																	3.70			2.92	
12/10/20	ND	8.80	21																			ND	4.56	94	99	0.12	460
1/11/21		0.00							-														4.50		110	0.12	
3/10/21	ND	9.84	17			_			-									-			_	ND	13.08	120	ND	9.78	450
6/17/21	74	5.82	67	! !		-			-									-			-	ND	10.33	110	93	0.63	510
7/15/21	97	5.16	-			-			-									-							45	1.68	-
9/20/21	ND	2.97	90			-			-			-												-	ND	7.41	530
12/28-29/2021	ND	5.44	86			-			-													ND	8.24	120	21	1.61	440
2/10/22			-			-												-							ND	4.56	470
3/31-4/01/2022	ND	10.29	27						-												-	ND	7.05	190	ND	7.79	600
7/05-06/2022	ND	8.93	15			-			-			-								-	-	ND	5.88	140	ND	3.68	510
9/28-29/2022	ND	9.01	15			-			-			-								-	-	ND	3.31	100	ND	1.11	470
% Decrease	100%																			-				-	100%		
Ifolane 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 sulfolane is the most recent sampling event relative to highest reported concentration since the pre-system startup event (9/11-13/17).

 8) Sulfolane criterion established by EGLE-Oil, Gas, and Minerals Division (EGLE-OGMD).
- 9) Sulfate criterion Part 201 Residential Generic Cleanup Criteria and Screening Levels (Part 201 Residential GCCSLs), dated January 10, 2018, per R299.44 (Table 1) of the Michigan Administrative Code.
- 10) Concentrations that are highlighted and bold exceed cleanup criteria.



	TABLE 1 GROUNDWATER ANALYTICAL SUMMARY & CLEANUP CRITERIA COMPARISON Hartland 36 Gas Plant Portion of E1/2 of NW1/4 of Section 36, T03N-R06E, Hartland Township, Livingston County, Michigan ECT Project #13-0685-2000 MW-14S MW-14D MW-15D MW-15D MW-15D MW-15D MW-15D MW-15D MW-16D MW-16D MW-16D MW-16D MW-16D MW-17D																										
	Т	MW-14S		l l	MW-14D		l	MW-15		l		ECT Proje	ct #13-068	5-2000 MW-15DD			MW-16			MW-16D			MW-17S		l	MW-17D	
Date	Sulfolane		Sulfate	Sulfolane	DO	Sulfate	Sulfolane		Sulfate	Sulfolane	DO	Sulfate	Sulfolane	DO	Sulfate	Sulfolane	DO	Sulfate	Sulfolane	DO	Sulfate	Sulfolane	DO	Sulfate	Sulfolane	DO	Sulfate
9/11-13/17 9/21/17	120	0.85		7,700	0.22		ND 	4.39		230	0.22		33 48	0.23		ND	3.31		ND	0.28		3,100	0.25		380	0.36	
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 6/19-21/18	ND 52	8.61 0.28	120 67	3,000 (5,100)	0.22	50 (51) 77 (77)	ND ND	7.96 7.98	16 39	ND ND	6.86 3.80	29 27	ND ND	0.54	37 42	ND ND	8.73 16.43	19 43	ND ND	3.88 8.12	25 24	52 (52) 55	3.28 8.61	64 68	ND ND (ND)	9.68	36 42 (41)
9/18-20/18	ND	4 90	140	2,600 (2,800)	2.89	110	ND ND	8.25	39	ND ND	7.45	20	ND	0.53	42	ND ND	8.12	21	ND	2.08	22	32	3.07	65	ND (ND)	3.83	42 (41)
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 9/23-24/19	ND ND	9.88 5.96	160 100	110 71	5.82 2.83	120 150	ND 	8.58	55	ND ND	5.65 22.96	28 26	ND	0.53	65	ND	11.24	23	ND 	6.78	33	ND ND	1.43 4.78	69 73	ND ND	10.93 7.19	65 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		0.44	400		44.00	400									-											0.00	
	ND	_								ND															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	99-1020 ND 17.85 88 ND 10.57 100 ND 8.34 21 190 1.09 67 ND 1.25 290 102320 91 6.89 91 6.89 91 6.89 91 6.89 1210020 ND 1.94 50 ND 1.66 110 ND 22.18 26																										
	6/1-2/20 ND 5.62 120 ND 7.50 110 ND 6.87 24 ND 0.86 67 ND 5.71 269 99-10/20 ND 17.85 88 ND 10.57 100 ND 6.87 24 190 1.09 67 ND 1.25 290 10/23/20 190 1.09 67 ND 1.25 290																										
	6/1-2/20 ND 5.62 120 ND 7.50 110 ND 6.87 24																										
	99-10/20 ND 17.55 88 ND 10.57 100 ND 8.34 21 199 1.09 67 ND 1.25 299 10/20/20 ND 1.94 50 ND 1.66 110 ND 22.18 26																										
	10/23/20																										
	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																										
12/28-29/2021	ND	4.23	36	ND	3.85	83				ND	4.08	35										ND	1.31	53	ND	0.34	100
2/10/22													-		-	-			-		-	-		-			
3/31-4/01/2022	ND	2.74	35	ND	2.08	53				ND	1.05	34										ND	4.06	40	ND	1.51	200
7/05-06/2022 9/28-29/2022	ND (ND)	0.93 2.30	49 (50) 37	ND ND	4.88 2.78	63 62				ND ND	3.04	31 40										ND ND	0.87 3.10	73 67	ND ND	1.07 0.99	300 150
% Decrease	88.3%			100%						100%			100%	_	-							100%	3.10		100%		
Sulfolane Criterion (μg/L)									100%			100%	on-detect - <													
70 - 00 - 00 - 00)									100%			100%	-													
Sulfolane Criterion (μg/L)	 MW-18			 MW-19S					100%			100%	on-detect - <													
Sulfolane Criterion (µg/L) Sulfate Criterion (mg/L) Date	Sulfolane	MW-18 DO	Sulfate	100% Sulfolane	MW-19S		 Sulfolane	MW-19D	Sulfate	Sulfolane	MW-19DD DO		100% No	250 MW-20S		Sulfolane	MW-20D		Sulfolane	MW-21D		100% Sulfolane	MW-22D		100% Sulfolane	MW-23D	Sulfate
Sulfolane Criterion (µg/L) Sulfate Criterion (mg/L) Date 9/11-13/17	Sulfolane	MW-18 DO 1.16	Sulfate	100% Sulfolane	MW-19S DO 1.64	Sulfate		MW-19D DO 0.60			 MW-19DD	Sulfate	100% No	250 MW-20S DO 1.50	Sulfate	Sulfolane	MW-20D DO 0.45	Sulfate	Sulfolane	 MW-21D	Sulfate	100%	MW-22D DO 7.76		100%	 MW-23D	Sulfate
Sulfolane Criterion (µg/L) Sulfate Criterion (mg/L) Date 9/11-13/17 9/21/17	Sulfolane 2,200	MW-18 DO 1.16	Sulfate	Sulfolane	MW-19S DO 1.64	Sulfate	Sulfolane 5,900	MW-19D DO 0.60	Sulfate	Sulfolane ND	MW-19DD DO 3.82	Sulfate	100% No Sulfolane 63	250 MW-20S DO 1.50	Sulfate	Sulfolane 12,000	MW-20D DO 0.45	Sulfate	Sulfolane ND	MW-21D DO 6.08	Sulfate	Sulfolane ND	MW-22D DO 7.76	Sulfate	Sulfolane ND	MW-23D DO 2.87	Sulfate
Sulfolane Criterion (µg/L) Sulfate Criterion (mg/L) Date 9/11-13/17	Sulfolane	MW-18 DO 1.16	Sulfate	100% Sulfolane	MW-19S DO 1.64	Sulfate	 Sulfolane	MW-19D DO 0.60		Sulfolane	MW-19DD DO	Sulfate	100% No	250 MW-20S DO 1.50	Sulfate	Sulfolane	MW-20D DO 0.45	Sulfate	Sulfolane	MW-21D	Sulfate	100% Sulfolane	MW-22D DO 7.76		100% Sulfolane	MW-23D	Sulfate
Sulfolane Criterion (µg/L) Sulfate Criterion (mg/L) Date 9/11-13/17 9/21/17 12/19-20/17 1/25/18 2/27/18	Sulfolanee 2,200 660 2,300 2,000	MW-18 DO 1.16 0.67 0.74 0.39	Sulfate 37 34 33	100% Sulfolane 29 ND	MW-19S DO 1.64 10.32	Sulfate 44	Sulfolane 5,900 3,200 ND ND	MW-19D DO 0.60 0.38 0.77 0.57	Sulfate 73 74 51	Sulfolane ND ND	MW-19DD DO 3.82 7.16	Sulfate 22	100% No Sulfolane 63 49	mw-20S DO 1.50 4.04 3.76	Sulfate 45 45 52	Sulfolane 12,000 12,000 10,000 9,300	MW-20D DO 0.45 0.52 1.61 0.61	Sulfate 43 41 46	Sulfolane ND ND	MW-21D DO 6.08 7.58	Sulfate 22	Sulfolane ND ND	MW-22D DO 7.76 5.74	Sulfate 12	Sulfolane ND ND	MW-23D DO 2.87 2.48	Sulfate 20
Sulfolane Criterion (µg/L) Sulfate Criterion (mg/L) Date 9/11-13/17 9/21/17 12/19-20/17 1/25/18 2/27/18 3/28-29/18	Sulfolane 2,200 660 2,300 2,000 980	MW-18 DO 1.16 0.67 0.74 0.39 0.71	Sulfate 37 34 33 34	100% Sulfolane 29 ND ND ND ND	MW-19S DO 1.64 10.32 9.45	Sulfate 44 43	Sulfolane 5,900 3,200 ND ND	MW-19D DO 0.60 0.38 0.77 0.57	Sulfate 73 74 51 54	Sulfolane ND ND ND ND	MW-19DD DO 3.82 7.16 6.27	Sulfate 22 26	100% No No Sulfolane 63 49 ND ND		Sulfate 45 45 52 57 (58)	Sulfolane 12,000 12,000 10,000 9,300 10,000	MW-20D DO 0.45 0.52 1.61 0.61 2.00	Sulfate 43 41 46 51	Sulfolane ND ND ND ND ND ND ND	MW-21D DO 6.08 7.58 4.13	Sulfate 22 22	Sulfolane ND ND ND ND ND	MW-22D DO 7.76 5.74 5.32	Sulfate 12 9.4	Sulfolane ND ND ND ND ND ND ND	MW-23D DO 2.87 2.48 3.03	Sulfate 20 19
Sulfolane Criterion (µg/L) Sulfate Criterion (mg/L) Date 9/11-13/17 9/21/17 12/19-20/17 12/25/18 22/27/18 3/28-29/18 6/19-21/18	Sulfolane 2,200 660 2,300 2,000 980 14	MW-18 DO 1.16 0.67 0.74 0.39 0.71 3.13	Sulfate 37 34 33 34 39	100%	MW-19S DO 1.64 10.32 9.45 11.14	Sulfate 44 43 36	Sulfolane 5,900 3,200 ND ND	MW-19D DO 0.60 0.38 0.77 0.57 0.47	Sulfate 73 74 51 54 63	Sulfolane ND ND ND ND ND ND ND	MW-19DD DO 3.82 7.16 6.27 5.25	Sulfate 22 26 23	100% No No No Sulfolane 63 49 ND ND ND	250 MW-20S DO 1.50 4.04 3.76 2.03 4.80	Sulfate 45 45 52 57 (58) 56	Sulfolane 12,000 12,000 10,000 9,300 10,000 6,600	MW-20D DO 0.45 0.52 1.61 0.61 2.00 3.99	Sulfate 43 41 46 51 58	Sulfolane ND ND ND ND ND ND ND ND	MW-21D DO 6.08 7.58 4.13 4.22	Sulfate 22 22 21	Sulfolane ND ND ND ND ND ND ND	MW-22D DO 7.76 5.74 5.32 12.97	Sulfate 12 9.4 8.0	Sulfolane ND ND ND ND ND ND ND ND	MW-23D DO 2.87 2.48 3.03 5.72	Sulfate 20 19 20
Sulfotane Criterion (ug/L Sulfate Criterion (mg/L) Date 9/11-13/17 12/19-20/17 12/19-20/17 12/19-20/17 22/27/18 3/22-29/18 9/18-20/18 9/18-20/18	Sulfolane 2,200 660 2,300 2,000 980 14 ND (ND)	MW-18 DO 1.16 0.67 0.74 0.39 0.71 3.13 0.67 2.28	Sulfate 37 34 33 34 39 49 (49) 53	Sulfolane 29 ND ND ND ND ND ND	MW-19S DO 1.64 10.32 9.45 11.14 12.84 8.95	Sulfate	Sulfolane 5,900 3,200 ND ND 290 170 (150)	MW-19D DO 0.60 0.38 0.77 0.57 0.47 1.08 0.86 3.02	Sulfate 73 74 51 54 63 77 (77) 83	Sulfolane ND ND ND ND	MW-19DD DO 3.82 7.16 6.27	Sulfate 22 26	Sulfolane 63 ND ND ND ND ND ND ND ND		Sulfate 45 45 52 57 (58) 56 63 48	Sulfolane 12,000 12,000 10,000 9,300 10,000 6,600 22 (34)	MW-20D DO 0.45 0.52 1.61 0.61 2.00 3.99 5.37 5.32	Sulfate 43 41 46 51 58 80 (81) 90	Sulfolane ND ND ND ND ND ND ND	MW-21D DO 6.08 7.58 4.13	Sulfate 22 22	Sulfolane ND ND ND ND ND	MW-22D DO 7.76 5.74 5.32	Sulfate 12 9.4	Sulfolane ND ND ND ND ND ND ND	MW-23D DO 2.87 2.48 3.03	Sulfate 20 19
Sulfolane Criterion (µg/L Sulfate Criterion (µg/L Date 9/11-13/17 12/19-20/17 12/19-20/17 12/25/18 2/27/18 3/28-29/18 9/18-20/18 12/17-18/18 2/17-18/18	Sulfolane 2,200 660 2,300 2,000 980 14 ND (ND) ND	MW-18 DO 1.16 0.67 0.74 0.39 0.71 3.13 0.67 2.28 1.09	Sulfate 37 34 33 34 39 49 (49) 53 47	Sulfolane 29 ND ND ND ND ND ND	MW-19S DO 1.64 10.32 9.45 11.14 12.84 8.95 14.18	Sulfate 44 43 36 44 47 47	Sulfolane 5,900 3,200 ND ND 290 750 170 (150) 440 350	MW-19D DO 0.60 0.38 0.77 0.57 0.47 1.08 0.86 3.02 0.24	Sulfate 73 74 51 54 63 88 88	Sulfolane ND ND ND ND ND ND ND	MW-19DD DO 3.82 7.16 6.27 5.25 6.89	Sulfate 22 26 23 20	100% No.	MW-20S DO 1.50 4.04 3.76 2.03 4.80 9.28 9.77 12.20	Sulfate 45 52 57 (58) 56 63 48 62	Sulfolane 12,000 10,000 9,300 10,000 6,600 22 (34) 19 ND (ND)	MW-20D DO 0.45 0.52 1.61 0.61 2.00 3.99 5.37 5.32 10.35	Sulfate 43 41 46 51 58 80 (81) 90 89 (84)	Sulfolane ND ND ND ND ND ND ND ND	MW-21D DO 6.08 7.58 4.13 4.22 5.77	Sulfate 22 22 21	Sulfolane	MW-22D DO 7.76 5.74 5.32 12.97 7.65	Sulfate 12 9.4 8.0 6.8	100%	MW-23D DO 2.87 2.48 3.03 5.72 3.12	Sulfate
Sulfotane Criterion (ug/L Sulfate Criterion (mg/L) Date 9/11-13/17 12/19-20/17 12/19-20/17 12/19-20/17 22/27/18 3/22-29/18 9/18-20/18 9/18-20/18	Sulfolane 2,200 660 2,300 2,000 980 14 ND (ND)	MW-18 DO 1.16 0.67 0.74 0.39 0.71 3.13 0.67 2.28 1.09 0.97	Sulfate	100%	MW-19S DO 1.64 10.32 9.45 11.14 12.84 8.95	Sulfate 44 43 36 44 47 47 62	Sulfolane 5,900 3,200 ND ND 290 170 (150)	MW-19D DO 0.60 0.38 0.77 0.57 0.47 1.08 0.86 3.02 0.24 0.17	Sulfate 73 74 51 54 63 77 (77) 83	Sulfolane ND ND ND ND ND ND ND	MW-19DD DO 3.82 7.16 6.27 5.25	Sulfate 22 26 23	Sulfolane 63 ND ND ND ND ND ND ND ND	mw-20S Mw-20S DO 1.50 4.04 3.76 2.03 4.80 9.28 9.77 12.20 20.73	Sulfate 45 45 52 57 (58) 56 63 48 62 72	Sulfolane 12,000 12,000 10,000 9,300 10,000 6,600 22 (34) 19 ND (ND)	MW-20D DO 0.45 0.52 1.61 2.00 3.99 5.37 5.32 10.35 10.86	Sulfate 43 41 46 51 58 80 (81) 90 89 (84) 94 (94)	Sulfolane ND	MW-21D DO 6.08 7.58 4.13 4.22	Sulfate 22 22 21 21	Sulfolane ND ND ND ND ND ND ND	MW-22D DO 7.76 5.74 5.32 12.97	Sulfate 12 9.4 8.0	Sulfolane ND ND ND ND ND ND ND ND	MW-23D DO 2.87 2.48 3.03 5.72	Sulfate 20 19 20
Sulfotane Criterion (ug/L Sulfate Criterion (mg/L) Date 9711-13/17 92/117 12/19-20/17 12/19-20/17 12/19-20/18 2/27/18 3/28-29/18 6/19-2/1/18 9/18-20/18 3/28-29/19 3/28-29/19 6/24-26/19	Sulfolane 2,200 660 2,300 980 14 ND (ND) ND ND (ND)	MW-18 DO 1.16 0.67 0.74 0.39 0.71 3.13 0.67 2.28 1.09	Sulfate 37 34 33 34 39 49 (49) 53 47	Sulfolane 29 ND ND ND ND ND ND	MW-19S DO 1.64 10.32 9.45 11.14 12.84 8.95 14.18 10.42	Sulfate 44 43 36 44 47 47	Sulfolane 5,900 	MW-19D DO 0.60 0.38 0.77 0.57 0.47 1.08 0.86 3.02 0.24	Sulfate	Sulfolane ND	MW-19DD DO 3.82 7.16 6.27 5.25 6.89 7.27	Sulfate 22 26 23 20 23	\$\text{Sulfolane} 63 \\	MW-20S DO 1.50 4.04 3.76 2.03 4.80 9.28 9.77 12.20	Sulfate 45 52 57 (58) 56 63 48 62	Sulfolane 12,000 10,000 9,300 10,000 6,600 22 (34) 19 ND (ND)	MW-20D DO 0.45 0.52 1.61 0.61 2.00 3.99 5.37 5.32 10.35	Sulfate 43 41 46 51 58 80 (81) 90 89 (84)	Sulfolane ND	MW-21D DO 6.08 4.13 4.22 5.77 5.66	Sulfate 22 22 21 21 24	Sulfolane ND	MW-22D DO 7.76 5.74 7.65 9.20	Sulfate 12 9.4 8.0 6.8 8.3	Sulfolane ND	MW-23D DO 2.87 2.48 3.03 5.72 3.12 6.39	Sulfate 20 19 20 21 30 30
Sulfolane Criterion (µg/L Sulfate Criterion (µg/L Date 9/11-13/17 9/21/17 12/19-20/17 12/19-20/17 12/25/19 3/28-29/18 9/18-20/18 9/18-20/18 9/18-20/18 12/17-18/16 9/23-24/19 12/3-4/19 12/3-4/19	Sulfolane 2,200 660 2,300 980 144 ND (ND) ND	MW-18 DO 1.16 0.67 0.74 0.39 0.71 3.13 0.67 2.28 1.09 0.97 1.60	Sulfate	100%	MW-19S DO 1.64 10.32 9.45 11.14 12.84 8.95 14.18 10.42 9.79	Sulfate 44 43 36 44 47 62 58 62	Sulfolane 5,900 3,200 ND ND ND 290 170 (150) 440 350 98 (73) ND	MW-19D DO 0.60 0.57 0.47 1.08 0.86 3.02 0.24 0.17 8.39	Sulfate	Sulfolane ND	MW-19DD DO 3.82 7.16 6.27 5.25 6.89 7.27	Sulfate	Sulfolane 63 49 ND		Sulfate 45 45 52 57 (58) 56 63 48 62 72 66 64	Sulfolane 12,000 12,000 10,000 9,300 10,000 6,600 22 (34) 19 ND (ND) ND (ND)	MW-20D DO 0.45 0.52 1.61 0.61 2.00 3.99 5.37 5.32 10.35 10.36 6.26	Sulfate 43 41 46 51 58 80 (81) 90 89 (84) 84 (79)	Sulfolane ND ND ND ND ND ND ND ND ND	MW-21D DO 6.08 7.58 4.13 4.22 5.77 5.66	Sulfate 22 21 21 24	Sulfolane ND	MW-22D DO 7.76 5.74 12.97 7.65 9.20	Sulfate 9.4 8.0 6.8 8.3	Sulfolane ND	MW-23D DO 2.87 2.48 3.03 5.72 3.12 6.39	Sulfate 20 19 20 21 30
Sulfolane Criterion (µg/L) Sulfate Criterion (µg/L) Date 911-13/17 9/21/17 12/19-20/17 1/25/18 2/27/18 3/28-29/18 6/19-21/18 6/19-21/18 12/17-18/18 3/25-26/19 6/24-26/19 9/23-24/19 1/2/3/2	Sulfolane 2,200 660 2,300 980 14 ND (ND) ND ND ND ND ND ND ND ND ND	MW-18 DO 1.16 0.67 0.74 3.13 0.67 2.28 1.09 0.93	Sulfate 37 34 33 34 39 49 (49) 53 45 (44) 43 49	Sulfolane 29 ND	MW-19S DO 1.64 10.32 9.45 11.14 12.84 8.95 14.18 10.42 9.79 11.40	Sulfate	Sulfolane 5,900 3,200 ND ND 290 750 440 350 98 (73) 90 (73) 92	MW-19D DO 0.60 0.38 0.77 0.57 0.47 1.08 0.86 3.02 0.24 0.17 8.39 0.57	Sulfate 73 74 51 54 63 77 (77) 83 88 100 (94) 110 92	Sulfolane	MW-19DD DO 3.82 7.16 6.27 5.25 6.89 	Sulfate	Sulfolane 63 49 ND	MW-20S DO 1.50 4.04 3.76 2.03 4.80 9.28 9.77 12.20 20.73 6.06 7.23	Sulfate 45 52 57 (58) 56 63 48 62 72 66 64	Sulfolane 12,000 12,000 10,000 9,300 10,000 6,600 22 (34) 19 ND (ND) ND (ND) ND (ND) ND (ND)	MW-20D DO 0.45 0.52 1.61 2.00 3.99 5.37 5.32 10.35 10.86 6.26 6.15	Sulfate 43 41 46 51 58 80 (81) 90 89 (84) 94 (94) 84 (79) 84 (80)	Sulfolane ND ND ND ND ND ND ND ND	MW-21D DO 6.08 7.58 4.13 4.22 5.77 5.66	Sulfate 22 21 21 24	100%	MW-22D DO 7.76 5.74 5.32 12.97 7.65 	Sulfate 12 9.4 8.0 6.8 8.3	Sulfolane ND ND ND ND ND ND ND ND	MW-23D DO 2.87 2.48 3.03 5.72 3.12 6.39	Sulfate 20 19 20 21 330
Sulfolane Criterion (ug/L Sulfate Criterion (ug/L Date 9/11-13/17 12/19-20/17 12/19-20/17 12/19-20/17 12/19-20/17 12/19-20/18 3/28-29/18 5/19-20/18 9/18-20/18 12/17-18/18 3/25-26/19 12/2-24/19 12/2-24/19 12/2-24/19 12/2-2	Sulfolane 2,200 660 2,300 2,000 980 14 ND (ND) ND ND ND ND ND ND	MW-18 DO 1.16 0.67 0.74 0.39 0.71 3.13 0.67 2.28 1.09 0.97 1.60 0.93	Sulfate	100%	MW-19S DO 1.64 10.32 9.45 11.14 12.84 8.95 14.18 10.42 9.79 11.40	Sulfate 44 43 36 44 47 62 58 62	Sulfolane 5,900 3,200 ND ND ND 170 (150) 440 350 98 (73) ND 98 ND N	MW-19D DO 0.60 0.38 0.77 0.57 0.47 1.08 0.86 3.02 0.24 0.17 8.39 0.57	Sulfate 73 74 51 54 63 77 (77) 83 88 100 (94) 110 92	Sulfolane ND ND ND ND ND ND ND ND ND	MW-19DD DO 3.82 7.16 6.27 5.25 6.89 7.27	Sulfate	Sulfolane 63 49 ND	MW-20S DO 1.50 4.04 3.76 2.03 4.80 9.28 9.77 12.20 20.73 6.06 7.23	Sulfate 45 45 52 57 (58) 56 63 48 62 72 66 64	Sulfolane 12,000 12,000 10,000 9,300 10,000 6,600 22 (34) ND (ND) ND (ND) ND (ND) ND (ND)	MW-20D DO 0.45 0.52 1.61 0.61 2.00 3.99 5.37 5.32 10.35 10.86 6.26 6.15	Sulfate 43 41 46 51 58 80 (81) 90 89 (84) 94 (94) 84 (79) 84 (80)	Sulfolane ND ND ND ND ND ND ND ND ND	MW-21D DO 6.08 7.58 4.13 4.22 5.77 5.66	Sulfate 22 21 21 24	100%	MW-22D DO 7.76 5.74 12.97 7.65 9.20	Sulfate 12 9.4 8.0 6.8	Sulfolane ND	MW-23D DO 2.87 2.48 3.03 5.72 3.12 6.39	Sulfate 20 19 20 21 30
Sulfolane Criterion (µg/L) Sulfate Criterion (µg/L) Date 911-13/17 9/21/17 12/19-20/17 1/25/18 2/27/18 3/28-29/18 6/19-21/18 6/19-21/18 12/17-18/18 3/25-26/19 6/24-26/19 9/23-24/19 1/2/3/2	Sulfolane 2,200 660 2,300 980 14 ND (ND) ND ND ND ND ND ND ND ND ND	MW-18 DO 1.16 0.67 0.74 3.13 0.67 2.28 1.09 0.93	Sulfate 37 34 34 39 49 (49) 53 47 45 (44) 43 49 71	Sulfolane 29 ND	MW-19S DO 1.64 10.32 9.45 11.14 12.84 8.95 14.18 10.42 9.79 11.40	Sulfate	Sulfolane 5,900 3,200 ND ND 290 750 440 350 98 (73) 90 (73) 92	MW-19D DO 0.60 0.38 0.77 0.57 0.47 1.08 0.86 3.02 0.24 0.17 8.39 0.57	Sulfate 73 74 51 54 63 77 (77) 83 88 100 (94) 110 92	Sulfolane	MW-19DD DO 3.82 7.16 6.27 5.25 6.89 	Sulfate	Sulfolane 63 49 ND	MW-20S DO 1.50 4.04 3.76 2.03 4.80 9.28 9.77 12.20 20.73 6.06 7.23	Sulfate 45 52 57 (58) 56 63 48 62 72 66 64	Sulfolane 12,000 12,000 10,000 9,300 10,000 6,600 22 (34) 19 ND (ND) ND (ND) ND (ND) ND (ND)	MW-20D DO 0.45 0.52 1.61 2.00 3.99 5.37 5.32 10.35 10.86 6.26 6.15	Sulfate 43 41 46 51 58 80 (81) 90 89 (84) 94 (94) 84 (79) 84 (80)	Sulfolane ND ND ND ND ND ND ND ND ND	MW-21D DO 6.08 7.58 4.13 4.22 5.77 5.66	Sulfate	100%	MW-22D DO 7.76 5.74 5.32 12.97 7.65	Sulfate 12 9.4 8.0 6.8	100% Sulfolane	MW-23D DO 2.87 2.48 3.03 5.72 3.12 6.39	Sulfate 20 19 20 21 30
Sulfolane Criterion (µg/L Sulfate Criterion (µg/L Sulfate Criterion (µg/L Date 9/11-13/17 12/19-20/17 1/25/18 3/25-20/18 3/25-20/18 9/15-20/18 9/15-20/18 12/17-18/16 3/25-20/19 6/24-26/19 12/23-4/19	Sulfolane 2,200 660 2,300 980 144 ND (ND) ND	MW-18 DO 1.16 0.67 0.74 0.39 0.71 3.13 0.67 2.28 1.09 0.97 1.60 0.93 6.08 6.08	Sulfate	Sulfolane 29 ND	MW-19S DO 1.64 	Sulfate	Sulfolane 5,900 3,200 ND ND ND 170 (150) 440 350 98 (73) ND	MW-19D DO 0.60 0.38 0.77 0.57 0.47 1.08 0.86 3.02 0.24 0.17 15.02 13.48	Sulfate	Sulfolane ND ND ND ND ND ND ND ND	MW-19DD DO 3.82 7.16 6.27 5.25 6.89 7.27		Sulfolane 63 49 ND		Sulfate 45 45 52 57 (58) 56 63 48 62 72 66 64 33 33 36 110	Sulfolane 12,000 12,000 9,300 10,000 6,600 22 (34) 19 ND (ND)	MW-20D DO 0.45 0.52 1.61 2.00 3.99 5.37 5.32 10.36 6.26 6.15 4.20 7.29	Sulfate 43 41 46 51 58 80 (81) 90 89 (84) 94 (94) 84 (79) 84 (80) 88 (91) 83 (85) 83 (80)	Sulfolane ND ND ND ND ND ND ND ND	MW-21D DO 6.08 7.58 4.13 4.22 5.77	Sulfate	Sulfolane ND ND ND ND ND ND ND ND	MW-22D DO 7.76 5.74 5.32 12.97 7.65 9.20	Sulfate	100% Sulfolane	MW-23D DO 2.87 2.48 3.03 5.72 3.12 6.39	Sulfate 20 19 20 30 30
Sulfotane Criterion (ug/L Sulfate Criterion (ug/L) Date 9/11-13/17 9/21/17 12/19-20/17 12/19-20/17 12/19-20/17 2/27/18 3/28-29/18 9/18-20/18 9/18-20/18 3/28-29/19 9/18-20/18 12/17-18/18 3/28-26/19 9/23-24/19 12/23-4/19	Sulfolane 2,200 660 2,300 14 ND (ND) ND	MW-18 DO 1.16 	Sulfate	Sulfolane 29 ND	MW-19S DO 1.64 10.32 9.45 11.14 12.84 8.95 14.18 10.42 9.79 11.40 13.19 11.36	Sulfate	Sulfolane 5,900 3,200 ND ND 750 170 (150) 440 350 98 (73) ND 92 ND	MW-19D DO 0.60 0.38 0.77 0.47 1.08 0.86 3.02 0.24 0.17 8.39 0.57 15.02 13.48	Sulfate 73 74 51 54 63 77 (77) 83 100 (94) 110 92 100 92 84	Sulfolane ND	MW-19DD DO 3.82 7.16 6.27 5.25 6.89 7.27	Sulfate	No N		Sulfate 45 45 52 57 (58) 56 63 48 62 72 66 64 33 3 36 1110 36 1110	Sulfolane 12,000 12,000 10,000 9,300 10,000 6,600 22 (34) 19 ND (ND)	MW-20D DO 0.45 0.52 1.61 0.61 2.00 3.99 5.37 10.35 10.86 6.26 6.15 4.20 7.29 2.79	Sulfate 43 41 46 51 58 80 (81) 90 84 (80) 88 (91) 83 (85) 83 (80)	Sulfolane ND ND ND ND ND ND ND ND	MW-21D DO 6.08 7.58 4.13 4.22 5.77 5.66		Sulfolane ND ND ND ND ND ND	MW-22D DO 7.76 5.74 12.97 7.65 9.20 	Sulfate	Sulfolane ND	MW-23D DO 2.87 2.48 3.03 5.72 3.12	Sulfate
Sulfolane Criterion (µg/L Sulfate Criterion (µg/L Sulfate Criterion (µg/L Date 9/11-13/17 12/19-20/17 1/25/18 3/25-20/18 3/25-20/18 9/15-20/18 9/15-20/18 12/17-18/16 3/25-20/19 6/24-26/19 12/23-4/19	Sulfolane 2,200 660 2,300 980 144 ND (ND) ND	MW-18 DO 1.16 0.67 0.74 0.39 0.71 3.13 0.67 2.28 1.09 0.97 1.60 0.93 6.08 6.08	Sulfate	Sulfolane 29 ND	MW-19S DO 1.64 	Sulfate	Sulfolane 5,900 3,200 ND ND 290 750 440 350 98 (73) ND 92 ND	MW-19D DO 0.60 0.38 0.77 0.57 0.47 1.08 0.86 3.02 0.24 0.17 15.02 13.48	Sulfate	Sulfolane ND ND ND ND ND ND ND ND	MW-19DD DO 3.82 7.16 6.27 5.25 6.89 7.27		No		Sulfate 45 45 52 57 (58) 56 63 48 62 72 66 64 33 33 36 110	Sulfolane 12,000 12,000 10,000 9,300 10,000 6,600 22 (34) 19 ND (ND)	MW-20D DO 0.45 0.52 1.61 2.00 3.99 5.37 5.32 10.36 6.26 6.15 4.20 7.29	Sulfate 43 41 46 51 58 80 (81) 90 89 (84) 94 (94) 84 (79) 84 (80) 88 (91) 83 (85) 83 (80)	Sulfolane ND ND ND ND ND ND ND ND	MW-21D DO 6.08 7.58 4.13 4.22 5.77	Sulfate	Sulfolane ND ND ND ND ND ND ND ND	MW-22D DO 7.76 5.74 5.32 12.97 7.65 9.20	Sulfate	100% Sulfolane	MW-23D DO 2.87 2.48 3.03 5.72 3.12 6.39	Sulfate 20 19 20 30 30
Sulfolane Criterion (ng/L) Sulfate Criterion (ng/L) Date 9/11-13/17 9/21/17 12/19-20/17 12/19-20/17 12/25-20/19 12/25/18 9/18-20/18 9/18-20/18 9/18-20/18 12/17-18/16 9/25-26/19 12/25/25/25/25/25/25/25/25/25/25/25/25/25	Sulfolane 2,200 660 2,300 2,000 380 14 ND (ND) ND	MW-18 D-0 1.16 0.67 0.74 0.39 0.71 3.13 0.67 2.28 1.60 0.97 1.60 0.97 1.60 0.93 7.25 0.12 8.42	Sulfate	100%	MW-19S D-0 1.64 9.45 11.14 12.84 8.95 14.18 10.42 9.79 11.40 13.19 11.36 10.46 9.18	Sulfate 44 43 36 44 47 62 58 62	Sulfolane 5,900 3,200 ND ND 290 750 440 350 98 (73) ND 92 ND	MW-19D DO 0.60 0.38 0.77 0.57 0.47 1.08 0.86 3.02 0.24 0.17 8.39 0.57 9.24 15.02 13.48 12.69 7.40	Sulfate	Sulfolane	MW-19DD DO 3.82 7.16 6.27 5.25 6.89 7.27	Sulfate	Sulfolane 63		Sulfate 45 45 52 57 (58) 56 63 48 62 72 66 4 33 3 57 57 57 57 57 58 80	Sulfolane 12,000 12,000 9,300 10,000 9,300 10,000 10,000 10,000 ND (ND)	MW-20D DO 0.45 0.52 1.61 2.00 3.99 5.37 5.32 10.35 10.86 6.26 6.15 4.20 7.29 2.79 1.65 11.71	Sulfate 43 41 46 51 51 89 (84) 94 (94) 94 (94) 84 (79) 84 (80) 88 (91) 80 (80) 80 (82)		MW-21D DO 6.08 7.58 4.13 4.22 5.77 5.66	Sulfate	Sulfolane ND ND ND ND ND ND ND	MW-22D DO 7.76 5.74 5.32 12.97 7.65	Sulfate	100% Sulfolane	MW-23D DO 2.87 2.48 3.03 5.72 6.39	Sulfate 20 19 20 21
Sulfotane Criterion (ug/L Sulfate Criterion (ug/L) Date 9/11-13/17 9/21/17 12/19-20/17 12/19-20/17 12/19-20/17 12/19-20/17 12/19-20/18 9/19-20/18 9/19-20/18 9/19-20/18 12/17-18/18 3/25-26/19 9/23-24/19 12/23-4/19	Sulfolane 2,200 660 2,300 2,000 980 14 ND (ND) ND	MW-18 DO 1.16 0.67 0.74 3.13 0.67 2.28 1.09 0.97 1.60 0.93 7.25 6.08 0.56 0.12	Sulfate 37 34 33 34 39 49 (49) 45 (44) 47 45 (44) 61 58	Sulfolane 29 ND	MW-19S DO 1.64 10.32 9.45 11.14 12.84 8.95 14.18 10.42 9.79 11.40 13.19 11.36 10.46	Sulfate	Sulfolane 5,900 3,200 ND ND 750 170 (150) 440 350 ND	MW-19D DO 0.60 0.38 0.77 0.57 0.47 1.08 0.86 3.02 0.24 0.17 8.39 0.57 15.02 13.48 12.69	Sulfate 73 74 51 54 63 77 (77) 83 88 100 (94) 110 92 100 120 120	Sulfolane ND ND ND ND ND ND ND ND	MW-19DD DO 3.82 6.27 5.25 6.89	Sulfate	100% No.	MW-20S DO 1.50 4.04 3.76 2.03 4.80 9.28 9.77 12.20 20.73 6.06 7.23 11.51 7.91 7.41	Sulfate 45 45 52 57(58) 63 48 62 72 66 64 33 36 1110	Sulfolane 12,000 12,000 10,000 9,300 10,000 6,600 22 (34) 10 (ND) ND (ND)	MW-20D DO 0.45 0.52 1.61 2.00 3.99 5.37 5.32 10.35 10.86 6.15 4.20 7.29 2.79 1.65	Sulfate 43 41 46 51 58 80 (81) 94 (94) 84 (79) 84 (80) 88 (91) 83 (85) 83 (80) 80 (80)	Sulfolane ND	MW-21D DO 6.08 7.58 4.13 4.22 5.77 5.66	Sulfate 22 22 21 21 24	Sulfolane ND	MW-22D DO 7.76 5.74 12.97 7.65	Sulfate	Sulfolane ND	MW-23D DO 2.87 2.48 3.03 5.72 3.12	Sulfate
Sulfolane Criterion (ug/L Sulfate Criterion (ug/L Date 9/11-13/17 12/19-20/17 12/19-20/17 12/19-20/17 12/19-20/17 12/19-20/17 12/19-20/17 12/19-20/17 12/21/18 9/18-20/18 9/18-20/18 12/17-18/18 3/25-26/19 9/23-24/19 12/3-4/19 1	Sulfolane 2,200 660 2,300 2,000 380 14 ND (ND) ND	MW-18 D-0 1.16 0.67 0.74 0.39 0.71 3.13 0.67 2.28 1.60 0.97 1.60 0.97 1.60 0.93 7.25 0.12 8.42	Sulfate	100%	MW-19S D-0 1.64 9.45 11.14 12.84 8.95 14.18 10.42 9.79 11.40 13.19 11.36 10.46 9.18	Sulfate 44 43 36 44 47 62 58 62	Sulfolane 5,900 3,200 ND ND 290 750 440 350 98 (73) ND 92 ND	MW-19D DO 0.60 0.38 0.77 0.57 0.47 1.08 0.86 3.02 0.24 0.17 8.39 0.57 9.24 15.02 13.48 12.69 7.40	Sulfate	Sulfolane ND ND ND ND ND ND ND ND	MW-19DD DO 3.82 7.16 6.27 5.25 6.89 7.27	Sulfate	Sulfolane 63		Sulfate 45 45 52 57 (58) 56 63 48 62 72 66 4 33 3 57 57 57 57 57 58 80	Sulfolane 12,000 12,000 9,300 10,000 9,300 10,000 10,000 10,000 ND (ND)	MW-20D DO 0.45 0.52 1.61 0.61 2.00 3.99 5.37 5.32 10.35 10.86 6.26 6.15 4.20 7.29 2.79 1.65 11.71	Sulfate 43 41 46 51 51 89 (84) 94 (94) 94 (94) 84 (79) 84 (80) 88 (91) 80 (80) 80 (82)		MW-21D DO 6.08 7.58 4.13 4.22 5.77 5.66	Sulfate	Sulfolane ND	MW-22D DO 7.76 5.74 5.32 12.97 7.65	Sulfate	100% Sulfolane	MW-23D DO 2.87 2.48 3.03 5.72 3.12	Sulfate 20 19 20 21
Sulfotane Criterion (ug/L Sulfate Criterion (ug/L) Date 9/11-13/17 9/21/17 12/19-20/17 12/19-20/17 12/19-20/17 12/19-20/17 12/19-20/18 9/19-20/18 9/19-20/18 9/19-20/18 12/17-18/18 3/25-26/19 9/23-24/19 12/23-4/19	Sulfolane 2,200 660 2,300 2,000 380 14 ND (ND) ND	MW-18 D-0 1.16 0.67 0.74 0.39 0.71 3.13 0.67 2.28 1.60 0.97 1.60 0.97 1.60 0.93 7.25 0.12 8.42	Sulfate	100%	MW-19S D-0 1.64 9.45 11.14 12.84 8.95 14.18 10.42 9.79 11.40 13.19 11.36 10.46 9.18	Sulfate 44 43 36 44 47 62 58 62	Sulfolane 5,900 3,200 ND ND 290 750 440 350 98 (73) ND 92 ND	MW-19D DO 0.60 0.38 0.77 0.57 0.47 1.08 0.86 3.02 0.24 0.17 8.39 0.57 9.24 15.02 13.48 12.69 7.40	Sulfate	Sulfolane ND ND ND ND ND ND ND ND	MW-19DD DO 3.82 7.16 6.27 5.25 6.89 7.27	Sulfate	Sulfolane 63		Sulfate 45 45 52 57 (58) 56 63 48 62 72 66 4 33 3 57 57 57 57 57 58 80	Sulfolane 12,000 12,000 9,300 10,000 9,300 10,000 10,000 10,000 ND (ND)	MW-20D DO 0.45 0.52 1.61 0.61 2.00 3.99 5.37 5.32 10.35 10.86 6.26 6.15 4.20 7.29 2.79 1.65 11.71	Sulfate 43 41 46 51 51 89 (84) 94 (94) 94 (94) 84 (79) 84 (80) 88 (91) 80 (80) 80 (82)	Sulfolane ND ND ND ND ND ND ND	MW-21D DO 6.08 7.58 4.13 4.22 5.77 5.66	Sulfate	Sulfolane ND	MW-22D DO 7.76 5.74 5.32 12.97 7.65	Sulfate	100% Sulfolane	MW-23D DO 2.87 2.48 3.03 5.72 3.12	Sulfate
Sulfolane Criterion (µg/L Sulfate Criterion (µg/L Sulfate Criterion (µg/L Date 9/11-13/17 12/19-20/17 1/12/19-20/17 1/12/19-20/17 1/12/19-20/17 1/12/19-20/18 3/28-29/18 9/18-20/18 9/18-20/18 12/17-18/16 3/28-29/19 12/3-4/19 12	Sulfolane 2,200 2,300 2,300 2,000 980 14 ND (ND) ND	MW-18 DO 1.16 0.67 0.74 0.39 0.71 3.13 0.67 2.28 1.09 0.97 1.60 0.93 7.25 6.08 0.56 0.12 6.08 4.2 0.75 5.49	Sulfate	Sulfolane 29	MW-198 DO 1.64 10.32 11.14 12.84 14.18 10.42 11.40 11.30 11.40 11.36 10.46 11.36 11.36 11.36 11.36 11.36 11.37 11.39	Sulfate 44 47 47 47 65 68 68 68 67 72 72 74 79 90	Sulfolane 5,900 ND ND ND 170 (150) 440 350 98 (73) ND	MW-19D DO 0.60 0.77 0.57 0.47 1.08 0.30 0.24 0.17 1.50 1.50 1.70 1.50 1.70 1.70 1.34 1.36 1.30 1.30 1.30 1.30 1.30 1.30 1.30 1.30	Sulfate	Sulfolane ND ND ND ND ND ND ND ND ND	MW-19DD DO 3.82	Sulfate	100% No.	MW-20S DO 1.50	Sulfate	Sulfotane 12,000 12,000 13,000 3,300 10,000	MW-20D D0 0.45 0.52 1.61 0.61 1.61 0.61 1.61 0.61 1.62 6.20 6.20 6.20 6.20 6.20 1.086 1.035 10.86 10.86 11.71 7.21 4.87	Sulfate 43 41 46 51 58 80 (81) 90 94 (94) 84 (79) 88 (91) 88 (91) 80 (82) 73	Sulfolane ND ND ND ND ND ND	MW-21D DO 6.08 7.58 4.13 4.22 5.66	Sulfate	Sulfolane ND	MW-22D DO 7.76 5.74 5.32 12.97 7.96 9.20	Sulfate	100% Sulfolane	MW-23D DO 2.87 2.48 3.03 5.72 3.12	Sulfate 20 19 20 30
Sulfolane Criterion (ug/L Sulfate Criterion (ug/L) Date 9/11-13/17 9/21/17 12/19-20/17 12/19-20/17 12/19-20/17 12/19-20/17 12/19-20/18 3/28-29/18 3/28-29/18 9/18-20/18 9/18-20/18 9/18-20/18 12/17-18/18 3/28-26/19 9/23-24/19 12/20 2/13/20 11/20 2/13/20 11/20	Sulfolane 2,200 2,200 2,000 2,000 380 14 ND (ND) ND	MW-18 DO 1.16 0.67 0.74 0.39 0.71 3.13 0.67 2.28 1.09 0.97 1.60 0.93 0.12 8.42 0.75 5.49 5.10	Sulfate	100%	MW-198 DO 164 164 194 10.32 10.32 11.14 12.84 18.94 11.14 10.42 9.79 11.40 11.36 10.46 11.36 10.46 11.36 10.46 11.36 10.46 11.37 11.38	Sulfate	Sutfolane 5,900 3,200 ND ND 290 750 440 350 98 (73) ND	MW-19D DO 0.60 0.38 0.77 0.57 0.47 1.08 0.86 3.02 0.24 0.17 8.39 0.57 1.15.02 13.48 12.69 7.40 2.39 1.35 1.35 1.35	Sulfate	Sulfolane ND ND ND ND ND ND ND ND	**************************************	Sulfate	100% No.	MW-20S DO 1.50 4.04 3.76 2.03 4.80 9.28 9.77 12.20 9.28 9.77 12.20 11.51 7.91 7.41 21.91 8.61 6.84 9.39	Sulfate	Sulfolane 12,000 12,000 14,000 1,000	MW-20D DO 0.45 0.52 2.70 1.81 10.86 1.82 10.38 10.	Sulfate		MW-21D DO 6.08 7.58 4.13 4.22 5.77 5.66	Sulfate	Sulfolane ND	MW-22D DO 7-76 7-76 5-74 5-32 12.97 7.65 9.20	Sulfate	100% Sulfolane	MW-23D DO 2.87 2.48 3.03 5.72 3.12	Sulfate
Sulfolane Criterion (µg/L Sulfate Criterion (µg/L Sulfate Criterion (µg/L Date 9/11-13/17 12/19-20/17 1/12/19-20/17 1/12/19-20/17 1/12/19-20/17 1/12/19-20/18 3/28-29/18 9/18-20/18 9/18-20/18 12/17-18/16 3/28-29/19 12/3-4/19 12	Sulfolane 2,200 2,300 2,300 2,000 980 14 ND (ND) ND	MW-18 DO 1.16 0.67 0.74 0.39 0.71 3.13 0.67 2.28 1.09 0.97 1.60 0.93 7.25 6.08 0.56 0.12 6.08 4.2 0.75 5.49	Sulfate	Sulfolane 29	MW-198 DO 1.64 10.32 11.14 12.84 14.18 10.42 11.40 11.30 11.40 11.36 10.46 11.36 11.36 11.36 11.36 11.36 11.37 11.39	Sulfate 44 47 47 47 65 68 68 68 67 72 72 74 79 90	Sulfolane 5,900 ND ND ND 170 (150) 440 350 98 (73) ND	MW-19D DO 0.60 0.77 0.57 0.47 1.08 0.30 0.24 0.17 1.50 1.50 1.70 1.50 1.70 1.70 1.34 1.36 1.30 1.30 1.30 1.30 1.30 1.30 1.30 1.30	Sulfate	Sulfolane ND ND ND ND ND ND ND ND ND	MW-19DD DO 3.82	Sulfate	100% No.	MW-20S DO 1.50	Sulfate	Sulfotane 12,000 12,000 13,000 3,300 10,000	MW-20D D0 0.45 0.52 1.61 0.61 1.61 0.61 1.61 0.61 1.62 6.20 6.20 6.20 6.20 6.20 1.086 1.035 10.86 10.86 11.71 7.21 4.87	Sulfate 43 41 46 51 58 80 (81) 90 94 (94) 84 (79) 88 (91) 88 (91) 80 (82) 73	Sulfolane ND ND ND ND ND ND	MW-21D DO 6.08 7.58 4.13 4.22 5.77	Sulfate	100% Sulfolane	MW-22D DO 7.76 5.74 5.32 12.97 7.96 9.20	Sulfate	100% Sulfolane	MW-23D DO 2.87 2.48 3.03 5.72 3.12 6.39	Sulfate 20 19 20 30

Notes

1) Concentrations of sulfolane reported in micrograms per liter (µg/L), equivalent to parts per billion (ppb).

2) DO - dissolved oxygen.

9/28-29/2022 % Decrease

Sulfolane Criterion (µg/L)

Sulfate Criterion (mg/L)

- 3) Concentrations of dissolved oxygen and sulfate reported in milligrams per liter (mg/L), equivalent to parts per million (ppm).
- 4) (---) Not sampled.
- ND Concentration not detected above reporting limit.
- 6) Concentrations shown in parenthesis are from duplicate sample.

- 7) % Decrease of sulfdane 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.



Non-detect - <10

TABLE 2

SULFOLANE GROUNDWATER ANALYTICAL SUMMARY & CLEANUP CRITERIA COMPARISON

Hartland 36 Gas Plant

Portion of E1/2 of NW1/4 of Section 36, T03N-R06E, Hartland Township, Livingston County, Michigan ECT Project #13-0685-2000

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

- Notes

 1) ft bgs Feet below ground surface.
- 2) Collection method Grab, peristaltic pump (PP), low flow (LF), Bailer.
- 3) μg/L Micrograms per liter, equivalent to parts per billion (ppb).
- **4)** (---) Not sampled.
- 5) ND Concentration not detected above reporting limit.
 6) Sulfolane concentrations included on the table are for the higher concentration from samples submitted for duplicate analysis.

- Cleanup criteria for sulfolane established by EGLE-Oil, Gas, and Minerals Division (EGLE-OGMD).
 Concentrations that are highlighted and bold exceed cleanup criteria.
 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,

											, ,								
								Ha	rtland Towns	hip, Livingst	on County, M	ichigan							
									ECT	Project #13-0	685-2000								
	Screened																		
Sample Location	Interval (ft bgs)	9/23-24/2019	12/3-4/19	1/2/2020	2/13/2020	3/5-6/2020	4/2/2020	6/1-2/2020	9/9-10/2020	10/23/2020	12/10/2020	1/11/2021	3/10/2021	6/17/2021	7/15/2021	9/20/2021	12/28-29/21	2/10/2022	3/31-
MW-1	20.1 - 25.1																		
MW-2	19.1 - 24.1																		
MW-2D	27.7 - 29.7																		
MW-3	22.0 - 27.0																		
MW-3D	30.0 - 32.0																		

	Screened							1													
Sample Location	Interval (ft bgs)	9/23-24/2019	12/3-4/19	1/2/2020	2/13/2020	3/5-6/2020	4/2/2020	6/1-2/2020	9/9-10/2020	10/23/2020	12/10/2020	1/11/2021	3/10/2021	6/17/2021	7/15/2021	9/20/2021	12/28-29/21	2/10/2022	3/31-4/01/2022	7/05-06/2022	9/28-29/2022
MW-1	20.1 - 25.1																				
MW-2	19.1 - 24.1																				
MW-2D	27.7 - 29.7																				
MW-3	22.0 - 27.0																				
MW-3D	30.0 - 32.0																				
MW-4	23.1 - 28.1																				
MW-5	18.0 - 23.0																				
MW-6	25.4 - 30.4																				
MW-6D	39.4 - 44.4																				
MW-7	25.2 - 30.2	ND	ND			ND		ND	ND		ND		ND	ND			ND		ND	ND	ND
MW-7D	39.2 - 44.2	140	1,200	2,400	1,500	ND	330	ND	ND		ND		ND	74	97	ND	ND		ND	ND	ND
MW-8	24.6 - 29.6																				
MW-9	23.6 - 28.6																				
MW-10	21.2 - 26.2											-									
MW-11	21.7 - 26.7																				
MW-12S	20.5 - 25.5																				
MW-12D	39.7 - 44.7																				
MW-13	19.1 - 24.1	ND	ND			ND		ND	ND		ND		ND	ND			ND		ND	ND	ND
MW-13D	27.7 - 29.7	ND	37			ND	16	ND	ND		99	110	ND	93	45	ND	21	ND	ND	ND	ND
MW-14S	18.6 - 23.6	ND	ND			ND		ND	ND		ND		ND	ND			ND		ND	ND	14
MW-14D	36.7 - 41.7	71	71			ND	ND	ND	ND		ND		ND	ND			ND		ND	ND	ND
MW-15	19.3 - 24.3																				
MW-15D	37.9 - 42.9	ND	ND			ND		ND	ND		ND		ND	ND			ND		ND	ND	ND
MW-15DD	50 - 55																				
MW-16	19.5 - 24.5																				
MW-16D	31.4 - 33.4																				
MW-17S	19.9 - 24.9	ND	ND			ND		ND	190	91	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND
MW-17D	35.4 - 37.4	ND	ND			ND		ND	ND		ND		ND	ND			ND		ND	ND	ND
MW-18	19.9 - 24.9	ND	ND			ND		ND	ND		ND		ND	ND			ND		ND	ND	ND
MW-19S	22.6 - 27.6	ND	ND			ND		ND	ND		ND		ND	ND			ND		ND	ND	ND
MW-19D	43.0 - 48.0	ND	92			ND	ND	ND	ND		ND		ND	ND			ND		ND	ND	ND
MW-19DD	57 - 62																				
MW-20S	17.8 - 22.8	ND	ND			ND		ND	ND		ND		ND	ND			ND		ND	ND	ND
MW-20D	31.0 - 33.0	ND	ND			ND		ND	ND		ND		ND	ND			ND		ND	ND	
MW-21D	52.3 - 57.3																				
MW-22D	36.4 - 41.4																				
MW-23D	28.1 - 30.1																				
EGLE-OGMD Clea																					
Collection Method	•								Ва	iler	LF	Bailer					LF				
Collection Wethou									Da	1101	LI	Dalici					Li				

- 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.
- Concentrations included on the table are for the light concentration from samples submit
 (Cleanup criteria for sulfolane established by EGLE-Oil, Gas, and Minerals Division (EGLE-OGMD).
 Concentrations that are highlighted and bold exceed cleanup criteria.
 MW-7 sampled on 8/11/2016 for the 8/3-4/2016 sample event.



APPENDIX C

LABORATORY ANALYTICAL REPORT





14-Oct-2022

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

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

Dear Nick,

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

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

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

The total number of pages in this report is 28.

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

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

Sincerely,

Electronically approved by: Tim Gates

Gary Byar

Project Manager

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: 14-Oct-22

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

Work Order: 22100010

Work Order Sample Summary

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

Client: Lambda Energy Resources

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

Sample ID: MW-7s **Lab ID:** 22100010-01

Collection Date: 9/28/2022 10:30 AM Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW846 8	270D	Prep: SW3510 10/5/22 15:38	Analyst: EEW
Sulfolane	ND		10	μg/L	1	10/10/2022 09:16 PM
Surr: 2-Fluorobiphenyl	41.8		41-96	%REC	1	10/10/2022 09:16 PM
Surr: 4-Terphenyl-d14	56.6		49-107	%REC	1	10/10/2022 09:16 PM
Surr: Nitrobenzene-d5	41.9		41-95	%REC	1	10/10/2022 09:16 PM
SULFATE			A4500-S0	04 E-11		Analyst: AML
Sulfate	230		4.0	mg/L	4	10/4/2022 12:24 PM

Date: 14-Oct-2022

Client: Lambda Energy Resources

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

Sample ID: MW-7d **Lab ID:** 22100010-02

Collection Date: 9/28/2022 11:20 AM Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW846 8	270D	Prep: SW3510 10/5/22 15:38	Analyst: EEW
Sulfolane	ND		10	μg/L	1	10/10/2022 09:40 PM
Surr: 2-Fluorobiphenyl	42.9		41-96	%REC	1	10/10/2022 09:40 PM
Surr: 4-Terphenyl-d14	50.7		49-107	%REC	1	10/10/2022 09:40 PM
Surr: Nitrobenzene-d5	42.2		41-95	%REC	1	10/10/2022 09:40 PM
SULFATE			A4500-S0	04 E-11		Analyst: AML
Sulfate	15		1.0	mg/L	1	10/4/2022 12:25 PM

Date: 14-Oct-2022

Client: Lambda Energy Resources

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

Sample ID: MW-19d **Lab ID:** 22100010-03

Collection Date: 9/28/2022 12:00 PM Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW846 8	270D	Prep: SW3510 10/5/22 15:38	Analyst: EEW
Sulfolane	ND		9.9	μg/L	1	10/10/2022 10:03 PM
Surr: 2-Fluorobiphenyl	59.5		41-96	%REC	1	10/10/2022 10:03 PM
Surr: 4-Terphenyl-d14	72.2		49-107	%REC	1	10/10/2022 10:03 PM
Surr: Nitrobenzene-d5	58.9		41-95	%REC	1	10/10/2022 10:03 PM
SULFATE			A4500-S0	04 E-11		Analyst: AML
Sulfate	97		4.0	mg/L	4	10/4/2022 12:26 PM

Date: 14-Oct-2022

Client: Lambda Energy Resources

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

Sample ID: MW-19s **Lab ID:** 22100010-04

Collection Date: 9/28/2022 12:50 PM Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW846 8	270D	Prep: SW3510 10/5/22 15:38	Analyst: EEW
Sulfolane	ND		10	μg/L	1	10/10/2022 10:27 PM
Surr: 2-Fluorobiphenyl	43.4		41-96	%REC	1	10/10/2022 10:27 PM
Surr: 4-Terphenyl-d14	52.5		49-107	%REC	1	10/10/2022 10:27 PM
Surr: Nitrobenzene-d5	44.5		41-95	%REC	1	10/10/2022 10:27 PM
SULFATE			A4500-S0	04 E-11		Analyst: AML
Sulfate	87		4.0	mg/L	4	10/4/2022 12:27 PM

Date: 14-Oct-2022

Client: Lambda Energy Resources

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

Sample ID: MW-18 **Lab ID:** 22100010-05

Collection Date: 9/28/2022 01:45 PM Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW846 8	270D	Prep: SW3510 10/5/22 15:38	Analyst: EEW
Sulfolane	ND		11	μg/L	1	10/10/2022 10:51 PM
Surr: 2-Fluorobiphenyl	55.5		41-96	%REC	1	10/10/2022 10:51 PM
Surr: 4-Terphenyl-d14	70.2		49-107	%REC	1	10/10/2022 10:51 PM
Surr: Nitrobenzene-d5	53.7		41-95	%REC	1	10/10/2022 10:51 PM
SULFATE			A4500-S	04 E-11		Analyst: AML
Sulfate	65		1.0	mg/L	1	10/4/2022 12:15 PM

Date: 14-Oct-2022

Client: Lambda Energy Resources

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

Sample ID: MW-20s **Lab ID:** 22100010-06

Collection Date: 9/28/2022 02:40 PM Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW846 8	270D	Prep: SW3510 10/5/22 15:38	Analyst: EEW
Sulfolane	ND		10	μg/L	1	10/10/2022 11:14 PM
Surr: 2-Fluorobiphenyl	43.2		41-96	%REC	1	10/10/2022 11:14 PM
Surr: 4-Terphenyl-d14	58.3		49-107	%REC	1	10/10/2022 11:14 PM
Surr: Nitrobenzene-d5	42.4		41-95	%REC	1	10/10/2022 11:14 PM
SULFATE			A4500-S0	04 E-11		Analyst: AML
Sulfate	76		1.0	mg/L	1	10/4/2022 12:15 PM

Date: 14-Oct-2022

Client: Lambda Energy Resources

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

Sample ID: MW-20d **Lab ID:** 22100010-07

Collection Date: 9/28/2022 03:30 PM Matrix: GROUNDWATER

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

Date: 14-Oct-2022

Client: Lambda Energy Resources

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

Sample ID: MW-15d **Lab ID:** 22100010-08

Collection Date: 9/28/2022 04:30 PM Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW846 8	270D	Prep: SW3510 10/5/22 15:38	Analyst: EEW
Sulfolane	ND		10	μg/L	1	10/10/2022 11:38 PM
Surr: 2-Fluorobiphenyl	48.8		41-96	%REC	1	10/10/2022 11:38 PM
Surr: 4-Terphenyl-d14	63.3		49-107	%REC	1	10/10/2022 11:38 PM
Surr: Nitrobenzene-d5	47.8		41-95	%REC	1	10/10/2022 11:38 PM
SULFATE			A4500-S0	04 E-11		Analyst: AML
Sulfate	40		1.0	mg/L	1	10/4/2022 12:16 PM

Date: 14-Oct-2022

Client: Lambda Energy Resources

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

Sample ID: MW-17d **Lab ID:** 22100010-09

Collection Date: 9/29/2022 08:35 AM Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW846 8	270D	Prep: SW3510 10/5/22 15:38	Analyst: EEW
Sulfolane	ND		10	μg/L	1	10/11/2022 12:01 AM
Surr: 2-Fluorobiphenyl	47.1		41-96	%REC	1	10/11/2022 12:01 AM
Surr: 4-Terphenyl-d14	68.9		49-107	%REC	1	10/11/2022 12:01 AM
Surr: Nitrobenzene-d5	46.7		41-95	%REC	1	10/11/2022 12:01 AM
SULFATE			A4500-S0	04 E-11		Analyst: AML
Sulfate	150		4.0	mg/L	4	10/4/2022 12:27 PM

Date: 14-Oct-2022

Client: Lambda Energy Resources

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

Sample ID: MW-17s **Lab ID:** 22100010-10

Collection Date: 9/29/2022 09:20 AM Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW846 8	270D	Prep: SW3510 10/5/22 15:38	Analyst: EEW
Sulfolane	ND		10	μg/L	1	10/11/2022 12:25 AM
Surr: 2-Fluorobiphenyl	45.8		41-96	%REC	1	10/11/2022 12:25 AM
Surr: 4-Terphenyl-d14	59.1		49-107	%REC	1	10/11/2022 12:25 AM
Surr: Nitrobenzene-d5	44.3		41-95	%REC	1	10/11/2022 12:25 AM
SULFATE			A4500-S	04 E-11		Analyst: AML
Sulfate	67		1.0	mg/L	1	10/13/2022 04:43 PM
Sulfate	67		1.0	mg/L	1	10/4/2022 12:17 PM

Date: 14-Oct-2022

Client: Lambda Energy Resources

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

Sample ID: MW-14d **Lab ID:** 22100010-11

Collection Date: 9/29/2022 10:15 AM Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW846 8	270D	Prep: SW3510 10/5/22 15:38	Analyst: EEW
Sulfolane	ND		10	μg/L	1	10/11/2022 12:49 AM
Surr: 2-Fluorobiphenyl	46.5	i	41-96	%REC	1	10/11/2022 12:49 AM
Surr: 4-Terphenyl-d14	49.3	!	49-107	%REC	1	10/11/2022 12:49 AM
Surr: Nitrobenzene-d5	45.2		41-95	%REC	1	10/11/2022 12:49 AM
SULFATE			A4500-S0	04 E-11		Analyst: AML
Sulfate	62		1.0	mg/L	1	10/4/2022 12:18 PM

Date: 14-Oct-2022

Client: Lambda Energy Resources

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

Sample ID: MW-14s **Lab ID:** 22100010-12

Collection Date: 9/29/2022 11:10 AM Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW846 8	270D	Prep: SW3510 10/5/22 15:38	Analyst: EEW
Sulfolane	14		9.9	μg/L	1	10/11/2022 01:12 AM
Surr: 2-Fluorobiphenyl	42.4		41-96	%REC	1	10/11/2022 01:12 AM
Surr: 4-Terphenyl-d14	50.7		49-107	%REC	1	10/11/2022 01:12 AM
Surr: Nitrobenzene-d5	41.1		41-95	%REC	1	10/11/2022 01:12 AM
SULFATE			A4500-S0	04 E-11		Analyst: AML
Sulfate	37		1.0	mg/L	1	10/4/2022 12:18 PM

Date: 14-Oct-2022

Client: Lambda Energy Resources

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

Sample ID: MW-13d **Lab ID:** 22100010-13

Collection Date: 9/29/2022 12:15 PM Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW846 8	270D	Prep: SW3510 10/5/22 15:38	Analyst: EEW
Sulfolane	ND		10	μg/L	1	10/11/2022 01:35 AM
Surr: 2-Fluorobiphenyl	60.9)	41-96	%REC	1	10/11/2022 01:35 AM
Surr: 4-Terphenyl-d14	72.0)	49-107	%REC	1	10/11/2022 01:35 AM
Surr: Nitrobenzene-d5	61.0)	41-95	%REC	1	10/11/2022 01:35 AM
SULFATE			A4500-S0	04 E-11		Analyst: AML
Sulfate	470		10	mg/L	10	10/4/2022 12:34 PM

Date: 14-Oct-2022

Client: Lambda Energy Resources

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

Sample ID: MW-13s **Lab ID:** 22100010-14

Collection Date: 9/29/2022 01:20 PM Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW846 8	270D	Prep: SW3510 10/5/22 15:38	Analyst: EEW
Sulfolane	ND		10	μg/L	1	10/11/2022 01:59 AM
Surr: 2-Fluorobiphenyl	44.4		41-96	%REC	1	10/11/2022 01:59 AM
Surr: 4-Terphenyl-d14	57.2		49-107	%REC	1	10/11/2022 01:59 AM
Surr: Nitrobenzene-d5	45.4		41-95	%REC	1	10/11/2022 01:59 AM
SULFATE			A4500-SO4 E-11			Analyst: AML
Sulfate	100		4.0	mg/L	4	10/4/2022 12:28 PM

Date: 14-Oct-2022

Client: Lambda Energy Resources

Project: Lambda (Hartland 36 Gas Plant)

Work Order: 22100010

Case Narrative

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

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

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

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

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

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

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

Client: Lambda Energy Resources

Work Order: 22100010

Project: Lambda (Hartland 36 Gas Plant)

QC BATCH REPORT

Date: 14-Oct-22

Batch ID: 204303	Instrument I	D SVMS9		Method	d: SW84 0	82	70D					
MBLK	Sample ID: SBLK	W1-204303-204	303			ι	Units: μg/L	-	Analysis	Date: 10 /1	10/2022 08	3:04 PI
Client ID:		Run ID	: SVMS9	_221010A		Se	eqNo: 888	5693	Prep Date: 10/5	5/2022	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-Fluorobip	henyl	32.27	0	50		0	64.5	41-96	0			
Surr: 4-Terpheny	·l-d14	33.97	0	50		0	67.9	49-107	0			
Surr: Nitrobenzer	ne-d5	32.88	0	50		0	65.8	41-95	0			
LCS	Sample ID: SLCS	W1-204303-204	303			ι	Units: μg/L	-	Analysis	Date: 10 /1	10/2022 08	3:28 PI
Client ID:		Run ID	: SVMS9	_221010A		SeqNo: 8885694 Prep Date: 10/5/2022		5/2022	DF: 1			
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Sulfolane		52.07	10	100		0	52.1	17-91	0			
Surr: 2-Fluorobip	henyl	32.62	0	50		0	65.2	41-96	0			
Surr: 4-Terpheny	·l-d14	35.68	0	50		0	71.4	49-107	0			
Surr: Nitrobenzer	ne-d5	33.76	0	50		0	67.5	41-95	0			
LCSD	Sample ID: SLCS	DW1-204303-20	4303			l	Units: μg/L	_	Analysis	Date: 10 /1	10/2022 08	3:52 PI
Client ID:		Run ID	: SVMS9	_221010A		Se	eqNo: 888	5695	Prep Date: 10/5	5/2022	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Sulfolane		57.68	10	100		0	57.7	17-91	52.07	10.2	30	
Surr: 2-Fluorobip	henyl	34.37	0	50		0	68.7	41-96	32.62	5.22	40	
Surr: 4-Terpheny	-	37.2	0	50		0	74.4	49-107	35.68	4.17	40	
Surr: Nitrobenzer		34.52	0	50		0	69	41-95	33.76	2.23	40	
The following sam	ples were analyzed	in this batch:	22 22 22	2100010-01A 2100010-04A 2100010-08A 2100010-11A 2100010-14A	A 22 A 22 A 22	2100 2100	0010-02A 0010-05A 0010-09A 0010-12A	22 22	100010-03A 100010-06A 100010-10A 100010-13A			

QC BATCH REPORT

Client: Lambda Energy Resources

Work Order: 22100010

Project: Lambda (Hartland 36 Gas Plant)

Batch ID: R354924	Instrument ID GALI	LERY		Method	d: A4500 -	SO4 E-11					
MBLK	Sample ID: MBLK-R3549	924				Units: mg	/L	Analysis	Date: 10 /4	1/2022 12:	21 PM
Client ID:		Run ID:	GALLE	RY_221004	Α	SeqNo: 886	3445	Prep Date:		DF: 1	
					SPK Ref		Control	RPD Ref		RPD	
Analyte	F	Result	PQL	SPK Val	Value	%REC	Limit	Value	%RPD	Limit	Qual
Sulfate		ND	1.0								
MS	Sample ID: 22100010-01	B MS				Units: mg	/L	Analysis	Date: 10 /4	1/2022 12:	24 PM
Client ID: MW-7s		Run ID:	GALLE	RY_221004	A	SeqNo: 886	3453	Prep Date:		DF: 4	
Analyte	F	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	:	264.5	4.0	50	232	.8 63.3	88-124	0			so
MS	Sample ID: 22100010-14	B MS				Units: mg	/L	Analysis	Date: 10 /4	1/2022 12:	29 PM
Client ID: MW-13s		Run ID:	GALLE	RY_221004	A	SeqNo: 886	3467	Prep Date:		DF: 4	
Analyte	F	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Sulfate		141.4	4.0	50	101	.6 79.6	88-124	0			S
MSD	Sample ID: 22100010-01	B MSD				Units: mg	/L	Analysis	Date: 10 /4	1/2022 12:	25 PM
Client ID: MW-7s		Run ID:	GALLE	RY_221004	A	SeqNo: 886	3454	Prep Date:		DF: 4	
Analyte	F	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Sulfate	:	265.4	4.0	50	232	.8 65.2	88-124	264.5	0.366	10	so
MSD	Sample ID: 22100010-14	B MSD				Units: mg	/L	Analysis	Date: 10 /4	l/2022 12:	36 PM
Client ID: MW-13s		Run ID:	GALLE	RY_221004	A	SeqNo: 886	3483	Prep Date:		DF: 4	
Analyte	F	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate		141.3	4.0	50	101	.6 79.5	88-124	141.4	0.0269	10	S
LCS1	Sample ID: LCS1-R35492	24				Units: mg	/L	Analysis	Date: 10 /4	1/2022 12:	21 PM
Client ID:		Run ID:	GALLE	RY_221004	A	SeqNo: 886	3443	Prep Date:		DF: 1	
Analyte	F	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate		10.33	1.0	10		0 103	90-117	0			
LCS2	Sample ID: LCS2-R35492	24				Units: mg	/L	Analysis	Date: 10 /4	1/2022 12:	10 PM
Client ID:		Run ID:	GALLE	RY_221004	A	SeqNo: 886	3406	Prep Date:		DF: 1	
Analyte	F	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Allalyto											

Note:

Client: Lambda Energy Resources

Work Order: 22100010

Project: Lambda (Hartland 36 Gas Plant)

QC BATCH REPORT

Batch ID: R354924 Instrumer	t ID GALLERY	Method: A4500-	SO4 E-11	
The following samples were analyze	ed in this batch: 2210	0010-01B 22	100010-02B 2	22100010-03B
	2210	0010-04B 22	100010-05B 2	22100010-06B
	2210	0010-07B 22	100010-08B 2	22100010-09B
	2210	0010-10B 22	100010-11B 2	22100010-12B
	2210	0010-13B 22	100010-14B	

QC BATCH REPORT

Client: Lambda Energy Resources

Work Order: 22100010

Project: Lambda (Hartland 36 Gas Plant)

Client ID: Analyte Sulfate MBLK Client ID: Analyte Sulfate MS Client ID: Analyte Sulfate	Sample ID: MBLK-2-R39	Run ID: Result ND 55677 Run ID: Result ND 1B MS	PQL 1.0	RY_221013, SPK Val RY_221013, SPK Val	SPK Ref Value	Units: mg/l SeqNo: 8897 %REC Units: mg/l SeqNo: 8897 %REC	Control Limit 7985 Control	Prep Date: RPD Ref Value	s Date: 10 /1 %RPD s Date: 10 /1	DF: 1 RPD Limit	Qual	
Analyte Sulfate MBLK Client ID: Analyte Sulfate MS Client ID: Analyte Sulfate MS Sulfate MS Sulfate	Sample ID: MBLK-2-R39	Result ND 55677 Run ID: Result ND 1B MS	PQL 1.0 GALLE	SPK Val	SPK Ref Value	%REC Units: mg/l	Control Limit Control	RPD Ref Value Analysi Prep Date:		RPD Limit		
Sulfate MBLK Client ID: Analyte Sulfate MS Client ID: Analyte Sulfate MIS	Sample ID: MBLK-2-R39	ND 55677 Run ID: Result ND	1.0 GALLE	RY_221013.	Value A SPK Ref	Units: mg/l SeqNo: 8897	Limit 7985 Control	Value Analysi Prep Date:		Limit		
MBLK Client ID: Analyte Sulfate MS Client ID: Analyte Sulfate MMS	Sample ID: 22100412-0 2	Run ID: Result ND 1B MS	GALLE PQL		SPK Ref	SeqNo: 8897	7985 Control	Prep Date:	s Date: 10 /1		l:20 PM	
Client ID: Analyte Sulfate MS Client ID: Analyte Sulfate MIS	Sample ID: 22100412-0 2	Run ID: Result ND 1B MS	PQL		SPK Ref	SeqNo: 8897	7985 Control	Prep Date:	s Date: 10 /1		l:20 PM	
Analyte Sulfate MS Client ID: Analyte Sulfate MS	Sample ID: 22100412-0 4	Result ND 1B MS	PQL		SPK Ref		Control			DF: 1		
Sulfate MS Client ID: Analyte Sulfate MS	Sample ID: 22100412-0 4	ND 1B MS		SPK Val		%REC		DDD Det				
MS Client ID: Analyte Sulfate MS		1B MS	1.0				Limit	Value	%RPD	RPD Limit	Qual	
Client ID: Analyte Sulfate MS												
Analyte Sulfate		Run ID:	ID: GALLERY_221013A			Units: mg/l	L	Analysi	s Date: 10 /1	10/13/2022 04:15 PM		
Sulfate MS			GALLE	RY_221013	A	SeqNo: 8897	7969	Prep Date:		DF: 1		
MS		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
		78.54	1.0	50	28.7	77 99.6	88-124	C)			
Client ID:	Sample ID: 22100263-0 4	4A MS				Units: mg/l	L	Analysi	s Date: 10 /1	13/2022 04	l:16 PM	
		Run ID:	GALLE	RY_221013	A	SeqNo: 8897	7972	Prep Date:		DF: 1		
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Sulfate		55.58	1.0	50	1.22	22 109	88-124	C)			
MS	Sample ID: 22100531-07	7D MS				Units: mg/l	L	Analysi	s Date: 10 /1	13/2022 06	3:04 PM	
Client ID:		Run ID:	GALLE	RY_221013	A	SeqNo: 8898	3158	Prep Date:		DF: 10		
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Sulfate		786.7	10	50	79	94 -14.6	88-124	C)		so	
MS	Sample ID: 22100531-0 1	1D MS				Units: mg/l	L	Analysi	s Date: 10 /1	3/2022 06	33 PM	
Client ID:		Run ID:	GALLE	RY_221013	A	SeqNo: 8898	3188	Prep Date:		DF: 30		
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Sulfate		1940	30	50	223	31 -583	88-124	C)		so	
MSD	Sample ID: 22100412-0 1	1B MSD				Units: mg/l	L	Analysi	s Date: 10 /1	13/2022 04	l:09 PM	
Client ID:			GALLE	RY_221013	A	SeqNo: 8897		Prep Date:		DF: 1		
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Sulfate		80.85	1.0	50	28.7		88-124	78.54		10		

QC BATCH REPORT

Client: Lambda Energy Resources

Work Order: 22100010

Project: Lambda (Hartland 36 Gas Plant)

Batch ID: R355677	Instrument ID GALI	LERY		Method	d: A4500	-SO4	4 E-11					
MSD	Sample ID: 22100263-04	A MSD				U	Inits: mg/l	L	Analysis	Date: 10 /1	13/2022 04	:16 PM
Client ID:		Run ID:	GALLE	RY_221013	Α	Se	qNo: 8897	7971	Prep Date:		DF: 1	
Analyte	F	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	:	51.95	1.0	50	1.2	22	101	88-124	55.58	6.75	10	
MSD	Sample ID: 22100531-07	D MSD				U	Inits: mg/l	L	Analysis	Date: 10 /1	13/2022 06	:05 PM
Client ID:		Run ID:	GALLE	RY_221013	Α	Se	qNo: 889 8	3160	Prep Date:		DF: 10	
Analyte	F	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate		759.9	10	50	7:	94	-68.2	88-124	786.7	3.47	10	so
MSD	Sample ID: 22100531-01	D MSD				U	Inits: mg/I	L	Analysis	Date: 10 /1	13/2022 06	:35 PM
Client ID:		Run ID:	GALLE	RY_221013	Α	Sec	qNo: 889 8	3195	Prep Date:		DF: 30	
Analyte	F	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate		2050	30	50	22	31	-361	88-124	1940	5.55	10	so
LCS1	Sample ID: LCS1-R3556	77				U	Inits: mg/l	L	Analysis	Date: 10/1	13/2022 03	:58 PM
Client ID:		Run ID:	GALLE	RY_221013	Α	Se	qNo: 8897	7915	Prep Date:		DF: 1	
Analyte	F	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate		10.84	1.0	10		0	108	90-117	0			
LCS1	Sample ID: LCS1-2-R355	5677				U	Inits: mg/l	L	Analysis	Date: 10 /1	13/2022 04	:19 PM
Client ID:		Run ID:	GALLE	RY_221013	Α	Se	qNo: 8897	7984	Prep Date:		DF: 1	
Analyte	F	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate		10	1.0	10		0	100	90-117	0			
LCS2	Sample ID: LCS2-2-R355	5677				U	Inits: mg/I	L	Analysis	Date: 10 /1	13/2022 04	:09 PM
Client ID:		Run ID:	GALLE	RY_221013	Α	Se	qNo: 8897	7950	Prep Date:		DF: 1	
Analyte	F	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate		50.36	1.0	50		0	101	88-124	0			
LCS2	Sample ID: LCS2-R3556	77	_			U	Inits: mg/l	L	Analysis	Date: 10/1	13/2022 04	:42 PM
Client ID:		Run ID:	GALLE	RY_221013	Α	Sec	qNo: 889 8	3033	Prep Date:		DF: 1	
Analyte	F	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate		52.75	1.0	50		0	106	88-124	0			
The following same	oles were analyzed in this	batch:	22	100010-10E	3							

Note:

Client: Lambda Energy Resources

Work Order: 22100010

Project: Lambda (Hartland 36 Gas Plant)

QC BATCH REPORT

ALS Group, USA

Date: 14-Oct-22

Client: Lambda Energy Resources

Project: Lambda (Hartland 36 Gas Plant)

QUALIFIERS,

ACRONIVACE

Project: Lambda (Hartland 36 Gas Plant)
WorkOrder: 22100010

ACRONYMS, UNITS

ALS Group, USA

Qualifier	<u>Description</u>
*	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
O	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

Date: 14-Oct-22

ALS Group, USA Holland, Michigan

Client Name: LAMBDA-KAL

Sample Receipt Checklist

Date/Time Received:

30-Sep-22 21:00

Work Order:	221000	<u>10</u>				Received by	y:	<u>DS</u>				
Checklist compl	leted by	Diane Shaw		01-Oct-22	_	Reviewed by:		Gates				03-Oct-22
Matrices: Carrier name:	<u>Grour</u>	eSignature <u>ndwater</u> <u>er</u>		Date			eSigna	ature				Date
Shipping contain	ner/coole	er in good condition?		Yes	✓	No 🗌	No	t Present				
Custody seals in	ntact on	shipping container/coole	r?	Yes		No 🗌	No	t Present	✓			
Custody seals in	ntact on	sample bottles?		Yes		No 🗌	No	t Present	✓			
Chain of custod	y presen	nt?		Yes	✓	No 🗌						
Chain of custod	y signed	when relinquished and r	eceived?	Yes	✓	No 🗌						
Chain of custod	y agrees	s with sample labels?		Yes	~	No 🗌						
Samples in prop	oer conta	ainer/bottle?		Yes	✓	No 🗌						
Sample contain	ers intac	it?		Yes		No 🗸						
Sufficient sampl	le volum	e for indicated test?		Yes	v	No 🗌						
All samples rece	eived wit	thin holding time?		Yes	✓	No 🗌						
Container/Temp	Blank to	emperature in complianc	e?	Yes	~	No 🗌						
Sample(s) recei				Yes 4.0/5.0	✓	No 🗌		IR3				
Cooler(s)/Kit(s):	:											
Date/Time samp	ple(s) se	nt to storage:			022 9	9:18:05 AM						
		zero headspace?		Yes		No L		A vials sub	mitted	✓		
Water - pH acce	eptable u	ipon receipt?		Yes		No L	N/A	V				
pH adjusted? pH adjusted by:				Yes -		No L	N/A	✓				
Login Notes:	<u>Aml</u>	ber SVOC jar for sample	"MW-20d" broke	en in transit.	<u>.</u>							
====	==:	======	====	====		====	==	===:	==:	==:		====
Client Contacted	d:		Date Contacted:	:		Person	Contac	ted:				
Contacted By:			Regarding:									
Comments:												
CorrectiveAction	n:									c	SRC P	age 1 of 1

22100010

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

Chain of Custody Form

ALS Group USA, Corp

Work Order

		rder.	.:				Parameter/Method Request for Analysis.							malysis.
oi		ame	ECT, Inc.			· A			Hat					
end Report To	Jereny Legandowski	Invoice Attn	, Accounts Payable	е		B.		50	2150	byn	~			
roject Name	Hartland 36 Gas Plant	Project #	1300	85		Ç.								
ddress	3125 Sovereign Drive, Sulte 9C	Address	3125 Sovereign	Drive, Suite 9C		E F			_	_				
ity State Zip	Lansing, MI 48911	City State Zip	Lansing, MI	48911		, Ġ·								
hone	5172729200	Phóne :	5172729200			, H				_				
-Mail Address	5 lewandowskie ective	e-Mail Address	Michiga	n-invoice	selambd	acrel	riv	Ne.	com					
# ::::::	Sample Description	Date:			Preservative						F	G :H:	1 1	Sample Notes
1 MW	-75	9/28/22	10:30	GW	-	2	X	X						
2 MW	1-72	9/28/22	11:20	GW	_	2								
3 MW	-19d	9/28/22	12:00	GW		2								
4 MW	-195	9/28/22	12:50	GW	-	2								
5 MW	-18	9/28/22	13:45	GW	-	2		Ш						
6 Mh	1-205	9/28/22	14:40	GW	-	2								
7 Mh	1-202	9/28/22	15:30	GW	-	2								
8 /	IW-15d	9/28/22	16:30	GW	_	2			Ш					
9 //	1W-172	9/29/22	8:35	GW	_	2								
10	MW-175	9/29/22	9:20	GW	_	Z	1	4	1					
	es must be made in writing once samples and COC Fo					quired Tur Std 10 W	maroi	und Ti	me:	davs	2 V	Vk davs	24 h	Results Due:
	1-HCL 2-HN03 3-H2\$O4 4-NaOH 5-Na2\$2 Date :::: Time	O3 6-NaHSO4 7- Rece			Dațe :::::	Time:								
senudrised by			(C)	sisisisisisisi J		-	-	-						
Ty Mar	tin 9/30/22 8:3	o H		72	9/30/22	19 5	ン	_		Ç	C Re	porting	Level: (check box below).
/	DS 9/30/22 21.	00 /)2(2	9/30/22	210	0.0		L	evel II:	Standa	rd QC		Other:
	\								L	evel III:	Std QC	+ Raw	data	1R3 4.00
Page 1 of	2 ALS Grou	p USA, Corp 3352 128	th Ave Holland	Michigan 49424 TE	L. (616) 399-6070	T	~		L	evel IV:	SW84	6 CLP-L	ike	

22100010

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

Chain of Custody Form

ALS Group USA, Corp

Work	Order

Compa				arameter/Method Request for	.Analysis,
1.11	Company Name ECT, Inc.		Α 5υ	1 fate	
Send Report To Tereny Lengudouski	Invoice Attn', ', ', Accounts Payabl	e		Folane	
Send Report To Jeremy Lewendowski Project Name Hartland 36 Gas Pla	A Project # 1306	85	. D.	hardson with the ball of the same of the s	
Address	Address 3125 Sovereign	Drive, Suite 9C	· je ;		
City State Zip Lansing, MI 48911	City State Zip Lansing, MI	48911	Ġ.		
Phone 5172729200	Phone 5172729200		H-		
e-Mail Address Jewandowski@ectine-c	1 TOTAL ONE	-invoices@lambage	versy lle com	¥	
# Sample Description	:::::Date::::::Țîme::::	Matrix Preservative	# Bottles A B	C D E F G H I	Sample Notes
1 MW-146	9/29/22 10:15	GW -	ZXX		
2 MW-145	9/29/22 11:10	GW -	2 11		
3 MW-13d	9/29/27 12:15		2		
4 MW-135	9/29/22 13:20	GW -	2 11		
5					
6					
7					
8					
9					
10					
Notes: Any changes must be made in writing once samples and COC Preservative Key: 1-HCL 2-HNO3 3-3-H2SO4 4-NaOH 5-Na2			Required Turnaround Tim	e:2 Wk days 24	Results Due:
Relinquised by Date Time Ty Markh 9/30/22 8	30 Alt			OTES: QC Reporting: Lével;	(check box below)
DS 9/30/22 2	400 07) 9/30/2		Level II: Standard QC	Other: /R3
2 4				Level III: Std QC + Raw data Level IV: SW846 CLP-Like	4.0-6
Page 2 of 2 ALS G	oup USA, Corp 3352 128th Ave Holland N	1ichigan 49424 TEL. (616) 399-607	0	LOVELINE . OVVOYO OLF "LINE	1

APPENDIX D

LOW-FLOW SAMPLING FIELD FORMS



The second secon			Monitori	ng Location: Sample ID: Well Type:		MW- 7 \$ 2" PVC	
PROJECT: 130685.2000							
INSPECTION	~ ~					(1)	
Is reference mark visible? Standing water present?	YES NO REMEDIED YES NO REMEDIED YES NO REMEDIED YES NO REMEDIED			g locked and in goo ce and properly sea		YES NO REMEDIED YES NO REMEDIED YES NO REMEDIED YES NO REMEDIED)
STATIC WATER LEVEL			Gla	Alaz	Car		
			Date: 9/2	8122	Time:	58	
Top of Casing Elevation:	71100						
Depth to Water:	24.99	Measured wit		ELECTRONIC TAPE	CHALKED TAP	E OTHER	
Elevation of Water:		Well depth ve	eritiea?	YES NO			
WELL PURGING			21-	01	of the source for the second	0	
Purge Method: PERISTALTIC BI	LADDER OTHER		Date: 9/2	25/18	Start Time:	9:59	
Measured Well Depth: 33.00	Screen Lengt	h:	-	Depth to Scree	en Midpoint:		
Time (feet) 10:15	Drawdown Pumping Rate (feet) 300 300 300 300 Stabilization Criteria:	//.3 //.3	Spec Cond. (umho/cm) /.028 /.041 /.049	(if > 0.5 mg/l)	pH (S.U.) (2.96 7.00 +/- 0.1 Units	ORP (mV) 92.7 86.9 83.9 +/- 10 mV	Turbidity (NTU) Z. 13 2.00 /- 91 +/- 10 % (if > 5 NTU) 3, January 19, 2010
FIELD ANALYSIS	11-70						
Time: _	10:25 11:3 deg C			CALIBRATIO			Mark if
Temperature: _	/ AAAC		Sassifia Cond	Standard (conc.)	Reading umbo	1	Recalibrated
Specific Conductance: Dissolved Oxygen:	7.049 umhos/cm 3. 22 mg/L		Dissolved Oxygen:				
pH:	7.00 s.u.				S.U.		
ORP: _	83.9 mv				mV		
Turbidity:	1.91 NTU						
, and any				'			
SAMPLE COLLECTION	Time: 10:30	- 1		Sample Duplic		00	
Appearance of Sample:	Clear, no	odor		Sample Metho	d:		
NO./BOTTLES: SIZE:	TYPE: FILTERED:		PRESER	RVATIVE:		PARAMETER:	
NO./BOTTLES: SIZE:1 1000 ml	glass plastic yes no	None, HCI, HI	NO ₃ , NaOH, H ₂ SO ₄			Sulfolane	
11125ml	glass plastic yes no	None, HCI, Hi	NO ₃ , NaOH, H ₂ SO ₄	, ZnAc, TSP, BAK			
ml	glass plastic yes no						
ml	glass plastic yes no						
ml	glass plastic yes no		NO ₃ , NaOH, H ₂ SO ₄ NO ₃ , NaOH, H ₂ SO ₄				
ml	glass plastic yes no glass plastic yes no						
ml	glass plastic yes no						
ml	glass plastic yes no	None, HCI, HI	NO ₃ , NaOH, H ₂ SO ₄	, ZnAc, TSP, BAK			
m!	glass plastic yes no						
ml	glass plastic yes no	None, HCI, HI	NO ₃ , NaOH, H ₂ SO ₄	, ∠nAc, TSP, BAK			
Name (SIGNATURE):	The Hope		of Custody No SIGNATURE):				

CLIENT: LOCATION:	Merit Energy 13390 Lone T Hartland Tow		Monitori	ng Location: Sample ID: Well Type:		MW- 7d 2" PVC			
PROJECT:	130685.2000								
INSPECTION								d	
Label on well? Is reference mark v Standing water pres Indication of surface Repair Notes:	sent?	YES NO REMEDIE YES NO REMEDIE YES NO REMEDIE	ED ED			ig locked and in go ce and properly se		YES NO REMEDIE YES NO REMEDIE YES NO REMEDIE YES NO REMEDIE	ED ED
STATIC WAT	ER LEVEL				6120	2/2-	10.	111.	
Top of Casing E Depth to Water Elevation of Wa		25.38		Measured wit	_	ELECTRONIC TAPE	Time: // O: CHALKED TAPE		
WELL PURG	ING -				ala	1		_	
Purge Method:	PERISTALTIC		OTHER		Date: 9/24	3/22	Start Time: /	0:45	1
Measured Well I	Depth: 48.5	50'	Screen Length	n:	-	Depth to Scre	en Midpoint: _		_
Time (11:00 11:05 11:10 11:15 Total Volume Pu		(feet) -, 03 -, 03 -, 03	Pumping Rate (ml/min) 306 300 306 306 306	Temp (°C) .\ .\ .\ . . .	Spec Cond. (umho/cm) , 4028 .4070 .4093 .4110 +/-3%	Diss Oxy (mg/l) B. 9.3 B. 9.7 9.00 9.01 +/- 10% (if > 0.5 mg/l) ation Criteria Reference	pH (S.U.) 7. \$ 2 7. \$ 3 7. \$ 3 7. \$ 3 +/- 0.1 Units	ORP (mV) 84,8 84,7 83.9 83.7	Turbidity (NTU) 3. 41 2.69 2.19 +/- 10 % (if > 5 NTU) #3, January 19, 2010
FIELD ANAL	Time:	11:15	•			CALIBRATI	ON CHECK		Mark if
	Temperature: fic Conductance: issolved Oxygen: pH: ORP: Turbidity:	11.1 -4110 9.01 7.53	deg. Cmg/LS.UmVNTU		Dissolved Oxygen: pH: Eh:	Standard (conc.)	Reading umhos mg/L S.U. mV		Recalibrated
SAMPLE CO		Time:	11:20	1 0		Sample Duplic	,	<u> </u>	
Appearance of S	Sample:	C),	eas, no	00101		Sample Metho	od:	-	-
NO./BOTTLES:1	SIZE:	glass plastic	yes no yes no yes no yes no yes no	None, HCI, HI None, HCI, HI None, HCI, HI None, HCI, HI	NO ₃ , NaOH, H ₂ SO ₄ NO ₃ , NaOH, H ₂ SO ₄	, ZnAc, TSP, BAK , ZnAc, TSP, BAK , ZnAc, TSP, BAK , ZnAc, TSP, BAK , ZnAc, TSP, BAK		Sulfate	
	ml	glass plastic	yes no		NO_3 , NaOH, H_2SO_4 NO_3 , NaOH, H_2SO_4				
	ml	glass plastic glass plastic	yes no		NO_3 , NaOH, H_2SO_4 NO_3 , NaOH, H_2SO_4				
	ml	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄				
0.41471 (110 -	EDCONNEL	glass plastic	yes no	Torque the course in the second	NO ₃ , NaOH, H ₂ SO ₄	THE RESERVE OF THE PERSON NAMED IN		- San Arrival III San Colle He to place for teaching	
Name (SIGNA		Test	W.		of Custody No SIGNATURE):				

CLIENT:	Merit Energy	Co.			Monitoring Location:					
				Sample ID:		_MW/ 3	5 5			
	13390 Lone Tree Road Hartland Township, Michigan					Well Type:		2" PVC		
PROJECT:	130685.2000	p, mioi								
	100000.2000							1		
INSPECTION		(-)			le coment red in =	nood repair?		NO REMEDII		
Label on well?		YES NO REMEDI			Is cement pad in g		od renair?	YES NO REMEDII		
Is reference mark vi		YES NO REMEDI			Is inner cap in place	-		YES NO REMEDII		
Standing water pres Indication of surface		YES NO REMEDI			Is well casing in vi		9	YES NO REMEDII		
Repair Notes:	runon in weir:	TES (NO) NEIWIESI				, 3				
STATIC WAT	ER LEVEL				0.10	0127		_		
					Date: 4/2	19102	Time: / 2	2:49		
Top of Casing E	levation:						_			
Depth to Water:		21.59		Measured wit	h: (ELECTRONIC TAPI	HALKED TAP	E OTHER		
Elevation of Wa				Well depth ve		YES NO				
Lievation of tra										
WELL PURG	NG-				01-	20103		10:-		
Purge Method:		BLADDER	OTHER		Date: 9/2	4120	Start Time:	12:5	0	
	THE RESERVE THE PERSON NAMED IN COLUMN TWO IS NOT THE OWNER.						compression states \$2.743			
Moscured Well F	Depth: 30.	30	Screen Length			Depth to Scre	en Midnoint			
ivieasureu vveil L	Jepui		Corcon Length		•	_ 0010			-	
	Water Lavel	Drawdows	Dumning Data	Temp	Spec Cond.	Diss Oxy	рН	ORP	Turbidity	
	Water Level		Pumping Rate		•		(S.U.)	(mV)	(NTU)	
Time	(feet) ストーフム)	(feet)	(ml/min) 300	(°C)	(umho/cm)	(mg/l) 3. 26	6.91	90.6	2,71	
13:05	21.74	15		11.3	1.00	3.28	6.11	94.7	7/2	
13:10	21.74	/5	300	11.3	1.046	7 71	6.95	96.4	2 /20	
13:15	21.74	15	300	//. ` ` `	1.051	7.21	6.73	90.4	2-60	
						•				
	7	Stabiliz	zation Criteria:	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 Units	+/- 10 mV	+/- 10 %	
Total Volume Pu	rged (gal):					(if > 0.5 mg/I)			(if > 5 NTU)	
					Stabiliza	ation Criteria Referer	ice Doc. USEPA EC	ASOP-GW 001 Rev	#3, January 19, 2010	
FIELD ANAL	YSIS									
	Time:	13:15				CALIBRAT	ON CHECK		Mark if	
	Temperature:	11.3	deg. C			Standard (conc.)	Reading		Recalibrated	
Specif	fic Conductance:	1.051	umhos/cm		Specific Cond.:		umh	os/cm		
	ssolved Oxygen:	701	mg/L		Dissolved Oxygen:		1			
J.	pH:	6.95	S.U.							
	ORP:	96.4	5.0. mV							
		2.68								
	Turbidity:	2.00	NTU		rurbialty:		I N10		I	
SAMPLE COL	I ECTION I	Timo	13:20			Sample Duplic	cate ?· A	0		
SAMPLE COI			13.20 1, No a	1-0		Sample Metho	/	_		
Appearance of S	апре:	('ea	1 10 00	701		Cample Medic			-	
NO./BOTTLES:	SIZE:	TYPE:	FILTERED:	CRECVERY	PRESER	RVATIVE:		PARAMETER:		
11	1000 ml	glass plastic	yes no	None, HCI, HI	NO ₃ , NaOH, H ₂ SO ₄		-	Sulfolane		
1	125ml	glass plastic	yes no	None, HCI, HI	NO ₃ , NaOH, H ₂ SO ₄	, ZnAc, TSP, BAK		Sulfate		
	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	, 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	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	And the second section is a second second second			Comme de Constitución de Const			
SAMPLING P	ERSONNEL		57.	Chain	of Custody No					
Name (SIGNA	TURE).		11/1	Name (SIGNATURE):					
Name (SIGNA	· OIL.		1/1/	, 13,110						

Merit Low Flow Logs

9/28/2022, 7:26 AM

CLIENT:	LIENT: Merit Energy Co.				Monitori	ing Location:			
LOCATION:	13390 Lone T	ree Road				Sample ID:		MW- 13	۷
	Hartland Tow		igan			Well Type:		2" PVC	
PROJECT:	130685.2000	, , , , , , , , , , , , , , , , , , , ,	3						
INSPECTION	The second secon								
-		~			le coment and in a	rood ropair?		YES NO REMEDIE	in.
Label on well?	i-ibl-0	YES NO REMEDIE			Is cement pad in g		ood renair?	YES NO REMEDIE	
Is reference mark v		YES NO REMEDIE			Is inner cap in place			YES NO REMEDIE	
Standing water pres		YES NO REMEDIE			Is well casing in vi			YES NO REMEDIE	
Indication of surface Repair Notes:	e runon in weil?	YES NO REMEDIE	<u>=</u> D		is well casing in vi	isibiy good repair.			
STATIC WAT	FRIEVEL					A second			
STATIO WAT	LIVELACE				Date: 9/2	9125	Time: 11'	40	
_ (0	-1				Date 110		Time		
Top of Casing E		20.91		N. 4	L.		E CHALLED TAR	- OTHER	
Depth to Water		20.91		Measured wit		ELECTRONIC TAP	E CHALKED TAP	E OTHER	
Elevation of Wa	ater:			Well depth ve	erilled?	YES			
WELL BUIDS	INC				- /	1			
WELL PURG	ING	1 ,			Date: 9/2	9/7.7		11:35	
Purge Method:	PERISTALTIC	BLADDER	OTHER		Date: 1/2	1120	Start Time:	(1,77	
	1								
Measured Well	Depth:		Screen Length	າ:	_	Depth to Scre	en Midpoint:		_
		_	3						
	Water Level	Drawdown	Pumping Rate	Temp	Spec Cond.	Diss Oxy	pН	ORP	Turbidity
Time			(ml/min)	(°C)	(umho/cm)	(mg/l)	(S.U.)	(mV)	(NTU)
11:50	(feet)	(feet)	700	11.6	1.017	170	7.12	27.9	1.13
		30		11.5	1.022	1.72	7.10	77.1	1.10
11:55	21.21		300	- A		11			
12:00	21,21	30	300	11.6	1.026	1.16	7.09	18.4	-76
12:05	21.21	30	300	11:6	1.030	1.13	7.09	16.3	.91
12:10	15.15	30	300	11.7	1.032	1.11	7.00	15.1	.87
		-							
			-				-		
		Ctobili	ation Criteria:	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 Units	+/- 10 mV	+/- 10 %
Total Volume Pu	rand (anl):	Stabiliz	ation Criteria.	+1- 376	+/- 3 /0	(if > 0.5 mg/l)	17- 0.1 011113	./- 10 111 0	(if > 5 NTU)
Total volume Pt	urged (gai)				Stabiliza	,	nce Doc. USEPA EC	ASOP-GW 001 Rev	
FIELD ANAL	YSIS					A property of the same of the same of			
TILLD ANAL		12:1	()			04110047	TON OUTON		Manual of
	Time:	41 -					ION CHECK		Mark if
	Temperature:	11.7	deg. C			Standard (conc.)	1		Recalibrated I
Speci	ific Conductance:	1.032	umhos/cm		Specific Cond.:		umh	os/cm	
D	issolved Oxygen:	1.11	mg/L		Dissolved Oxygen:		mg/L		
	pH:	7.08	S.U.		pH:		s.u.		
	ORP:	15.1	mV						
	Turbidity:	.87	NTU						
1	rarbialty.		11.10						
SAMPLE CO	LIECTION	Time:	12:15	1		Sample Dupli	cate ?:	10	
				Ida C		Sample Meth			
Appearance of S	sample:	Clear	, no	dolor		Sample Meur	ou		-
NO (POTTI FC:	CIZE:	TVDE:	FILTERED:		PRESE	RVATIVE:		PARAMETER:	
NO./BOTTLES:	SIZE: 	TYPE:	yes no	None HCL H	NO ₃ , NaOH, H ₂ SO ₄			Sulfolane	
1	125 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		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				
0.41471 :::0 =	and the second sector of the second sections	5	> /	A Reference to engine it will be produced from		THE RESERVE OF THE PERSON NAMED IN COLUMN TWO IS NOT			
SAMPLING F	ERSONNEL		11.	Chain	of Custody No	•			
Name (SIGNA	TURE):	m/		Name	(SIGNATURE):				

9/28/2022, 7:26 AM

CLIENT: Meri	it Energy C	Co.			Monitori	ng Location:		.,,1	
n .						Sample ID:		MW- 14.	S
	laatland Township, Michigan				Well Type: 2" PVC				
	685.2000	iomp, imen	.9			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
		~							
INSPECTION		_ \							_
Label on well?	1	YES NO REMEDIE			Is cement pad in g			YES NO REMEDIE	
Is reference mark visible?	(YES REMEDIE				g locked and in goo		YES NO REMEDIE	
Standing water present?		TES NO REMEDIE				ce and properly sea	aling well?	YES NO REMEDIE	
Indication of surface runoff	in well?	YES NO REMEDIE	D		Is well casing in vi	sibly good repair?	(YES NO REMEDIE	D
Repair Notes:	EVEL I				A				
STATIC WATER L	EVEL				- G12	9/22	- 10	: 39	
					Date: 1/ C	((2-	Time:	, 54	
Top of Casing Elevation	on:	2				-			
Depth to Water:	-	20.75	N	leasured wit	h:	ELECTRONIC TAPE	CHALKED TAPE	OTHER	
Elevation of Water:	-		V	Vell depth ve	rified?	YES NO			
WELL PURGING					0.10	9/22		100 410	
Purge Method: PER	ISTALTIC B	BLADDER C	THER		Date: <u>9/2</u>	9100	Start Time:	100)
	76	, SZ							
Measured Well Depth:	60.	, ,	Screen Length:			Depth to Scree	en Midpoint:		
ivieasured Well Deptil.		_ `	porceri Lerigari.	****	-	200	_		-
	.4==1==1	Drought	Dumnine Date	Tomn	Spec Cond	Diss Oxy	рН	ORP	Turbidity
	iter Level		Pumping Rate	Temp	Spec Cond.	-	(S.U.)		(NTU)
Time	(feet)	(feet)	(ml/min)	(°C)	(umho/cm)	(mg/l) Z: 36	7.01	5-4.4	2.87
	26.60	<u>~ .08</u>		11.2	1.031				
	6.60	- ,08	200	_//-/	1.026	2.32	7.03	50.1	2.61
11:05 2	6.60	- ,08	200	11.2	1.024	2.30	7.05	48.3	2.02
						-			
								-/ 40)/	. / 40.0/
	1	Stabiliza	ation Criteria:	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 Units	+/- 10 mV	+/- 10 %
Total Volume Purged	(gal): <i>[</i>				04-1-11	(if > 0.5 mg/l) ation Criteria Referen	Dee USERA FOA	SOR CW 001 Ray t	(if > 5 NTU)
					Stabiliza	ation Criteria Referen	ce Doc. USEPA EQA	ASOF-GVV 001 Rev #	5, January 19, 2010
FIELD ANALYSIS		11. M.C							
	Time: _	11:05				CALIBRATION	ON CHECK		Mark if
Te	mperature: _	11.2	deg. C			Standard (conc.)	Reading		Recalibrated
Specific Co	nductance:	1.024	umhos/cm		Specific Cond.:		umhos	s/cm	
	ed Oxygen: _	Z.30	mg/L		Dissolved Oxygen:		mg/L	11	
D13301VC	рH:	7.03	S.U.				S.U.		
	ORP:	48.3					o.o.		
	_		mV				MTU		
	Turbidity: _	2.02	NTU		Turbidity:		NIO		
		Control of the same statement	100					10	
SAMPLE COLLEC	CTION	Time:	11:10	-1 -		Sample Duplic		20	
Appearance of Sample	e:	<u> </u>	ear, no	00101		Sample Metho	od: Lo	w Flow	_
								DAD ****	
NO./BOTTLES:	SIZE:	TYPE:	FILTERED:			RVATIVE:		PARAMETER:	
-1 -	ml	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄			Sulfolane	
	ml	glass	yes no	CONTRACTOR OF THE PARTY OF THE	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		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, HI	NO ₃ , NaOH, H ₂ SO ₄	, LIIAU, ISP, DAK	and the largest superior and at the delication of the court of		
SAMPLING PERS	ONNEL		1/2 -	Chain	of Custody No.	•			
Name (SIGNATURE		lin	MAL	Name (SIGNATURE):				
I NAME (SIGNATURE	. 1 .	14	-	THATTIC (JOINT OILL).				

Merit Low Flow Logs (9/28/2022, 7:26 AM

CLIENT: LOCATION:	Merit Energy Co. 13390 Lone Tree Road Hartland Township, Michigan				Monitori	ing Location: Sample ID: Well Type:		MW- /스 /	7
PROJECT:	130685.2000	nomp, mo	gu						
INSPECTION								_	
Label on well? Is reference mark v Standing water pres Indication of surface Repair Notes:	sent?	YES NO REMEDI YES NO REMEDI YES NO REMEDI YES NO REMEDI	ED ED		Is inner cap in pla	good repair? ng locked and in go ce and properly se isibly good repair?		YES NO REMEDIE YES NO REMEDIE YES NO REMEDIE	D D
STATIC WAT	ER LEVEL				0/2	9/22	G	LIL	
Top of Casing E Depth to Water Elevation of Wa	:	20.58		Measured with	n: _		Time:/_		
Later to Burne	1110								
WELL PURG Purge Method:		BLADDER	OTHER		Date: 9/20	9/22	Start Time:	9:45	_
Measured Well	Depth:		Screen Length	:		Depth to Scre	en Midpoint: _		-
Time 10:00 10:05 10:10	Water Level (feet) 70 (a) 70 (b)	Drawdown (feet)0.303	Pumping Rate (ml/min) Zoc ZOC	Temp (°C) //, 4 //, 5	Spec Cond. (umho/cm) . 9 1	Diss Oxy (mg/l) 2.86 2.81 2.78	pH (S.U.) 7.16 7.17	ORP (mV) 47.1 42.3 37.4	Turbidity (NTU) 2.08 2.07
Total Volume Pเ	urged (gal):	ZS ^{Stabiliz}	zation Criteria:	+/- 3%	+/- 3% Stabiliz	+/- 10% (if > 0.5 mg/l) ation Criteria Referen	+/- 0.1 Units	+/- 10 mV	+/- 10 % (if > 5 NTU) #3, January 19, 2010
FIELD ANAL	YSIS	1/5 . 1/	4						
	Time: Temperature: ific Conductance: issolved Oxygen: pH: ORP: Turbidity:	10:10 11.5 -66 2.78 7.17 37.4 2.11	deg. C umhos/cm mg/L S.U. mV	C	Dissolved Oxygen: pH: Eh:	Standard (conc.)	umhc mg/L S.U. mV NTU		Mark if Recalibrated
SAMPLE CO		Time: _	10:15			Sample Dupli	/	<u>~0</u>	
Appearance of S		Clear	no odor			Sample Metho	od:	PARAMETER:	-
NO./BOTTLES:	SIZE: 	glass plastic glass plastic glass plastic glass plastic	yes no yes no	None, HCI, HN None, HCI, HN None, HCI, HN	10 ₃ , NaOH, H ₂ SO ₄ 10 ₃ , NaOH, H ₂ SO ₄ 10 ₃ , NaOH, H ₂ SO ₄ 10 ₃ , NaOH, H ₂ SO ₄	₄ , ZnAc, TSP, BAK ₄ , ZnAc, TSP, BAK		Sulfolane Sulfate	
	ml	glass plastic glass plastic	yes no yes no						
	ml	glass plastic	yes no	None, HCI, HN	IO ₃ , NaOH, H ₂ SO ₂	, ZnAc, TSP, BAK			
	ml	glass plastic	yes no yes no						
	mi	glass plastic glass plastic	yes no	None, HCI, HN	IO ₃ , NaOH, H ₂ SO ₂				
SAMPLING F		2 /	11001	NAME OF TAXABLE PARTY.					
Name (SIGNA		Ju#	WYX		SIGNATURE):				

CLIENT: LOCATION: PROJECT:	Hartland Township, Michigan				Monitori			MW/5 (d
INSPECTION Label on well? Is reference mark v Standing water pres Indication of surface Repair Notes:	isible? sent? e runoff in well?	YES NO REMEDIE: YES NO REMEDIE: YES NO REMEDIE: YES NO REMEDIE	o o		Is inner cap in pla Is well casing in v	ng locked and in go ce and properly se isibly good repair?	aling well?	YES NO REMEDIE YES NO REMEDIE YES NO REMEDIE	ED
Top of Casing E	Elevation:	20.46		Measured wit	Date: $\frac{9/2}{6}$	B/ZZ ELECTRONIC TAP	Time:	S S	
Elevation of Wa	ater:			Well depth ve	erified?	YE NO			
WELL PURG Purge Method:		BLADDER C	OTHER		Date:	8/22	Start Time:	16:00	
Measured Well i	Wo	\sim	Screen Length	:	_	Depth to Scre			_
Time 6:/5 6:20 4:25	Water Level (feet) 20, 49 20, 49 20, 49	Drawdown F	Pumping Rate (ml/min) 200 200 200	Temp (°C) //. 4 //. 4	Spec Cond. (umho/cm) . 78	Diss Oxy (mg/l) 3.67 3.71	pH (S.U.) 7.10 7.13 7.15	ORP (mV) 8 1.4 76.7 73.6	Turbidity (NTU) 3.74 3.61 5.50
Total Volume Pu	urged (gal): 1	Stabiliza	ation Criteria:	+/- 3%	+/- 3%	+/- 10% (if > 0.5 mg/l)	+/- 0.1 Units	+/- 10 mV	+/- 10 % (if > 5 NTU)
FIELD ANAL	YSIS	1/1. 2	~		Stabiliz	ation Criteria Refere	nce Doc. USEPA EC	QASOP-GW 001 Rev	#3, January 19, 2010
		3.71	deg. Cumhos/cmmg/LS.UmVNTU		Dissolved Oxygen: pH: Eh:	Standard (conc.)	umhi mg/L S.U. mV	•	Mark if Recalibrated
SAMPLE CO Appearance of S		Time:	ear, ~	odor	Andrew Britan and Land and Andrew Britanian Britanian Britanian Britanian Britanian Britanian Britanian Britani	Sample Dupli Sample Methor		F	
NO./BOTTLES: 	SIZE: 1000 ml 125 ml — ml — ml	TYPE: glass plastic glass plastic glass plastic glass plastic glass plastic	FILTERED: yes no yes no yes no yes no	None, HCI, H None, HCI, H None, HCI, H	PRESEF NO ₃ , NaOH, H ₂ SO, NO ₃ , NaOH, H ₂ SO,	, ZnAc, TSP, BAK , ZnAc, TSP, BAK , ZnAc, TSP, BAK		Sulfate	
	ml ml ml	glass plastic glass plastic glass plastic glass plastic	yes no yes no yes no yes no	None, HCl, H None, HCl, H None, HCl, H	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 , ZnAc, TSP, BAK			
	ml	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄ NO ₃ , NaOH, H ₂ SO ₄				
SAMPLING P	PERSONNEL		11	Constitution of the section of the s	of Custody No				
Name (SIGNA	TURE):	- M	100	Name	(SIGNATURE):				
		U	0						

Merit Low Flow Logs

CLIENT: Merit Energy Co.	Monitoring Location:
LOCATION: 13390 Lone Tree Road	Sample ID:MW/75
Hartland Township, Michigan	Well Type:2" PVC
PROJECT: 130685.2000	
INSPECTION	
Label on well? YES NO REMEDIED	Is cement pad in good repair? YES NO REMEDIED
Is reference mark visible?	Is protective casing locked and in good repair? Is inner cap in place and properly sealing well? YES NO REMEDIED YES NO REMEDIED
Standing water present? Indication of surface runoff in well? YES NO REMEDIED NO REMEDIED	Is inner cap in place and properly sealing well? Is well casing in visibly good repair? YES NO REMEDIED NO REMEDIED
Indication of surface runoff in well? Repair Notes:	Submig in tiology good repoint
STATIC WATER LEVEL	0/00/07 (2.110
	Date: 9/29/27 Time: 8:49
Top of Casing Elevation:	bate
Depth to Water: 19.43 Measured	with: ELECTRONIC TAPE PHALKED TAPE OTHER
Elevation of Water: Well depth	
Listation of Water.	
WELL PURGING	Classica O.CO
Purge Method: PERISTALTIC BLADDER OTHER	Date: 9/29/22 Start Time: 8:50
ruige Method. PERISTALTIC BLADDER OTTLER	
Measured Well Depth: Screen Length:	Depth to Screen Midpoint:
Ivieasured vveil Deptil Screen Lengtil	
Water Lavel Deputation Dismains Data Tama	Spec Cond. Diss Oxy pH ORP Turbidity
Water Level Drawdown Pumping Rate Temp	
Time (feet) (ml/min) (°C) 705 700 (%3)	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
	7 2 12 224 24 24
9:15 19.48 - 05 200 11.3	<u>.64 3.10 7.19 20.5 1.82</u>
Stabilization Criteria: +/- 3%	+/- 3% +/- 10% +/- 0.1 Units +/- 10 mV +/- 10 %
Total Volume Purged (gal): /, 5	(if > 0.5 mg/l) $(if > 5 NTU)$
EIEL D. ANAL VOIG	Stabilization Criteria Reference Doc. USEPA EQASOP-GW 001 Rev #3, January 19, 2010
FIELD ANALYSIS	
Time: 9:15	CALIBRATION CHECK Mark if
Temperature: deg. C	Standard (conc.) Reading Recalibrated
Specific Conductance:, 64 umhos/cm	Specific Cond.: umhos/cm
Dissolved Oxygen: mg/L	Dissolved Oxygen: mg/L
pH: 7./9 s.u.	pH: S.U.
ORP: 26.5 mv	Eh: mV
Turbidity: 1,8Z NTU	Turbidity: NTU
SAMPLE COLLECTION Time: 4:20	Sample Duplicate ?:
Appearance of Sample: Clear, No odor	Sample Method:
,,,	
NO./BOTTLES: SIZE: TYPE: FILTERED:	PRESERVATIVE: PARAMETER:
	, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK Sulfolane
	I, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAKSulfate
	, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK
	, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK
	, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK
	, HNO3, NaOH, H ₂ SO4, ZNAC, TSP, BAK
	, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK
	, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK
	, HNO ₃ , NaOH, H₂SO ₄ , ZnAc, TSP, BAK
	, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK
	ain of Custody No
Name (SIGNATURE):	e (SIGNATURE):

CLIENT:	Merit Energy	Co.			Monitori	ng Location:			
LOCATION:	13390 Lone T					Sample ID:		_MW/7	4
LOOAHON.	Hartland Tow		inan			Well Type:		2" PVC	
DDO JECT.	130685.2000	nsinp, wiicii	igaii			wen type.			
PROJECT:									
INSPECTION		05							
Label on well?		YES NO REMEDIE	D		Is cement pad in g			ES NO REMEDI	
Is reference mark v		YES TO REMEDIE			Is protective casin			YES NO REMEDI	
Standing water pres		YES NO REMEDIE			Is inner cap in place		aling well?	YES NO REMEDI	
Indication of surface	e runoff in well?	YES NO REMEDIE	D		Is well casing in vi	sibly good repair?		YES NO REMEDI	<u>=</u> U
Repair Notes:	ED LEVEL T					,			
STATIC WAT	EK LEVEL				Date: 4/2	0/22	_ 8	64	
					Date: 110	110	Time:		
Top of Casing E	levation:		— ,				7		
Depth to Water:		20.25		neasured wit		ELECTRONIC TAP	CHALKED TAP	E OTHER	
Elevation of Wa	iter:		V	Vell depth ve	rified?	YES			
WELL PURG	ING				0/20	10-		0.05	-
Purge Method:	PERISTALTIC	BLADDER C	THER		Date: 9/20	1122	Start Time:	8:05	
, ange memori		,							
Measured Well I	Denth: 40	78	Screen Length:			Depth to Scre	en Midpoint:		
ivieasured vveir i	Jeptii. LOR		orcen Length.			Dopan to conc	ap		_
	10/-/	Dec)mnine Dete	Toma	Spec Cond	Diss Oxy	nН	ORP	Turbidity
	Water Level	100 10	Pumping Rate	Temp	Spec Cond.		pH (S.L.)		
Time	(feet)	(feet)	(ml/min)	(°C)	(umho/cm)	(mg/l)	(S.U.)	(mV)	(NTU)
8:20	20.29	-04	200	11.00	. 19	• 91	7.28	28.4	3.41
R: 25	20.29	04	200	11.7	.77	. 9Ce	7.30	36.1	3-35
8:30	20.29	pel	700	115	73	.99	3.31	33.7	3.06
0.30		0-1_	200	11.7					
	,	25 Stabiliza	ation Criteria:	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 Units	+/- 10 mV	+/- 10 %
Total Volume Pเ	ırged (gal): / ·	25				(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	0.20							
	Time:	8 30				CALIBRATI	ON CHECK		Mark if
	Temperature:	11 2	dog C			Standard (conc.)	Reading		Recalibrated
	•	11:5	deg. C		0	18 180		a lam	
	fic Conductance:	. 73	umhos/cm						
Di	ssolved Oxygen:		mg/L)	Dissolved Oxygen:				
	pH:		S.U.		pH:		S.U.		
	ORP:	33.7	mV		Eh:		mV		
	Turbidity:	3.66	NTU				A1000000000000000000000000000000000000		
	raibiaity.	2.00			,				
SAMPLECO	I ECTION I	Time:	8:35	1		Sample Duplic	cate ?	Un	
SAMPLE CO	The second secon			oder		Sample Metho		-	
Appearance of S	sample:	Cle	01,00	ous		Sample Metric	Ju		-
	0.175	T/05	Ell TEDED		PRESER	ν/ΔΤΙ//Ε·		PARAMETER:	
NO./BOTTLES:	SIZE: 1000 ml	TYPE: glass plastic	FILTERED: yes no	None HCI III	PRESER NO ₃ , NaOH, H ₂ SO ₄				
1 1									
1	ml	glass plastic			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		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, HI	NO ₃ , NaOH, H ₂ SO ₄	, ZnAc, TSP, BAK			
SAMPLING P	ERSONNEL		1	Chain	of Custody No.				
		1/1							
Name (SIGNA	TURE):	- /-/		Name (SIGNATURE):				

CLIENT:	Merit Energy	Co.			Monitori	ng Location:			
	13390 Lone T					Sample ID:		_MW18	
	Hartland Tow	nship, Mich	nigan			Well Type:		2" PVC	
	130685.2000	-							
INSPECTION		2						^	
Label on well?		YES NO REMEDI	ED		Is cement pad in g	good repair?		YES NO REMEDIE	D
Is reference mark vis	sible?	YES NO REMEDI	ED			ig locked and in go		YES NO REMEDIE	
Standing water prese		YES NO REMEDI				ce and properly se	aling well?	YES NO REMEDIE	
Indication of surface Repair Notes:	runoff in well?	YES NO REMEDI	ED		is well casing in vi	isibly good repair?	,	TES NO REWIEDIE	
STATIC WATI	ER LEVEL	A Safes of Colors of the Colors		Anna and table a provide all a delications	01-	. /	1.0		
					Date: <u>9/2</u>	8/2=	Time:	:14	
Top of Casing E	levation:					~		•	
Depth to Water:		21-70		Measured witl	h:	ELECTRONIC TAP	CHALKED TAP	E OTHER	
Elevation of Wat	ter:			Well depth ve	rified?	YES			
MELL BUDGE	NO. I				61				
WELL PURGI	-				Date: 4/28	3/27	Start Time:	13:15	_
Purge Method:	PERISTALTIC	BLADDER	OTHER		Date: _ · ·	700	Start Time		
Measured Well D	Depth: 27.	50	Screen Length	:		Depth to Scre	en Midpoint: _		-
				_	0 0 1	D: 0	mI I	OBB	Turbiditu
	Water Level		Pumping Rate	Temp	Spec Cond. (umho/cm)	Diss Oxy	pH (S.U.)	ORP (mV)	Turbidity (NTU)
Time	(feet) 25.76	(feet)	(ml/min) 300	11°C)a	.588	(mg/l) /. 6 0	7.33	127 4	4.17
13: 35	2771.76	06	300	119	. 595	151	7.30	125.7	3.81
13. 33	1.4.7/	- 06	300	11.9	.599	146	727	124.1	376
13.40	2 1/0				. 3 ()				
	7	Stabiliz	zation Criteria:	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 Units	+/- 10 mV	+/- 10 % (if > 5 NTU)
Total Volume Pu	rged (gal):				Stabiliza	(if > 0.5 mg/l) ation Criteria Referer	nce Doc. USEPA EQ	ASOP-GW 001 Rev #	,
FIELD ANALY	rsis I								
	Time:	13:40	3			CALIBRAT	ION CHECK		Mark if
	Temperature:	11.9	deg. C			Standard (conc.)	Reading		Recalibrated
Specif	ic Conductance:	-599	umhos/cm		Specific Cond.:		umho	es/cm	
	ssolved Oxygen:	1.46	mg/L		Dissolved Oxygen:		mg/L		
	pH:	7.27	S.U.		pH:		S.U.		
	ORP:	124-1	mV		Eh:		mV		
	Turbidity:	3.76	NTU		Turbidity:		NTU		
		A STATE OF THE PARTY OF THE PAR	10.114					143	
SAMPLE COL		Time: _	13:45			Sample Duplic	,	NO COF	
Appearance of S	ample:	Clear	, no ode	7.(Sample Metho	oa		-
NO./BOTTLES:	SIZE:	TYPE:	FILTERED:		PRESER	RVATIVE:		PARAMETER:	
	1000 mI	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄				
1	125ml	glass plastic	yes no	The state of the s				Sulfate	
	ml	glass plastic	yes no						
	ml	glass plastic glass plastic	yes no yes no						
	ml	glass plastic	yes no						
	ml	glass plastic	yes no						
	ml	glass plastic	yes no						
	ml	glass plastic	yes no		-				
	ml	glass plastic glass plastic	yes no		NO ₃ , NaOH, H₂SO₄ NO ₃ , NaOH, H₂SO₄				
CAMPLING	AND AND ADDRESS OF THE PARTY OF	3.230 pidotio	- 1/1	Addig Addies from Policy and American Services	of Custody No		The same of the sa		
SAMPLING P		1	1 // //						
Nama (SIGNAT	LIDE).	1/		Name (SIGNATURE):				

CLIENT: Merit Energ LOCATION: 13390 Lone Hartland To PROJECT: 130685.2000	Tree Road wnship, Michigan	Monitoring Location:	
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 NO REMEDIED NO REMEDIED	
STATIC WATER LEVEL		Date: 9/28/27 Time: 12:14	
Top of Casing Elevation: Depth to Water: Elevation of Water:	22.78	Measured with: Well depth verified? Date:	
WELL PURGING		Date: 9/28/27 Start Time: 12:15	
Purge Method: PERISTALTIC	BLADDER OTHER	Date: 7 2 47 Start Time: 7 2 47 S	
Measured Well Depth: <u>30.</u>	27 Screen Length	gth: Depth to Screen Midpoint:	
Water Level / Z: 30 / Z: 35 / Z: 40 / Z: 45 Total Volume Purged (gal): Specific Conductance Dissolved Oxyger	deg. C .: 538 umhos/cm	(°C)	0 % 5 NTU) y 19, 2010
ORF	2	Eh:mV	-
Turbidity	r: <u>(9.40)</u> ntu	Turbidity: NTU	-
SAMPLE COLLECTION	Time:/2:50	Sample Duplicate ?:O	
Appearance of Sample:	Clear, no	odo C Sample Method: LF	
NO/BOTTLES: SIZE: 1	TYPE: yes no yes plastic yes no yes no yes plastic yes no	PRESERVATIVE: PARAMETER: Sulfolane None HCI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK None, HCI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK None, HCI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK None, HCI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK None, HCI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK None, HCI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK None, HCI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK None, HCI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK None, HCI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK None, HCI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK None, HCI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK None, HCI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK None, HCI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK	_
SAMPLING PERSONNEL	11	Chain of Custody No	
Name (SIGNATURE):	-/11/1h	Name (SIGNATURE):	

Merit Low Flow Logs

CLIENT: N	lerit Energy	Co.			Monitori	ing Location:			
	3390 Lone T					Sample ID:		_MW/9c	1
Н	lartland Tow	nship, Mich	igan			Well Type:		2" PVC	
	30685.2000	• /							
INSPECTION							Company of the Compan	,	
Label on well?		YES NO REMEDIE	-n		Is cement pad in g	good repair?		YES NO REMEDIE	D
Is reference mark visib	le?	YES NO REMEDIA			the second of the least of the	ig locked and in go	od repair?	YES NO REMEDIE	D
Standing water present		YES NO REMEDIE	ED		Is inner cap in pla	ce and properly se	aling well?	YES NO REMEDIE	D
Indication of surface ru		YES (NO REMEDIA	ED.		Is well casing in v	isibly good repair?	(YES NO REMEDIE	D
Repair Notes:									
STATIC WATE	R LEVEL				Date: 9/2	0177	1/	170	
					Date: 112	0120	Time:	. 29	
Top of Casing Ele	vation:				_				
Depth to Water:		22.80		Measured with	_	The second secon	E CHALKED TAPE	OTHER	
Elevation of Water	r:		1	Well depth ve	rified?	YES NO			
WELL PURGIN	G				9:Z	a		11:30	
Purge Method:	PERISTALTIC	BLADDER	OTHER		Date:	0	Start Time:	11.50	
	nth: 50.	cr)							
Measured Well De	pth: 50.		Screen Length:	:		Depth to Scre	en Midpoint: _		_
	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)	3.41
11:45	22.87	07	250	11.6	. 8417	1.97	7.24	65.4	5.41
11:50	22-87	07	250	11.3	.852	1.91	7.24	63.4	3.10
11:55	22.87	07	250	11-3	,854	1.86	7.24	61.7	2.60
	0-10-1				-				
	4					- TI 7 TI			
			-						
	-								
								And the second s	
		Stahiliz	ation Criteria:	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 Units	+/- 10 mV	+/- 10 %
Total Volume Purg	ed (gal):	J Stabiliz	ation ontena.	., 0,0	1, 3,0	(if > 0.5 mg/l)	,		(if > 5 NTU)
Total volume i alg	(94.).				Stabiliz	ation Criteria Referer	nce Doc. USEPA EQA	ASOP-GW 001 Rev	#3, January 19, 2010
FIELD ANALYS	SIS								
	Time:	11:5	5			CALIBRAT	ION CHECK		Mark if
	Temperature:	11.3	deg. C			Standard (conc.)			Recalibrated
Specific	Conductance:	854	umhos/cm		Specific Cond.:		ı	s/cm	
Specific	conductance.	1.86	mg/L	r	Dissolved Oxygen:				
Diss	pH:	7711	mg/L S.U.	,					
	ORP:	(01.7	S.U.						
		2.60							
	Turbidity:	2.00	NTU		rurbialty:		I N10		
SAMPLE COLL	ECTION I	Time	12:00			Sample Dupli	cate ?· A	10	
SAMPLE COLL	THE RESERVE AND ADDRESS OF THE PARTY OF THE		ear, no	and ar		Sample Metho	4	, -	
Appearance of Sar	iipie		en, no	W 01		Jampie Welli	·		-
NO./BOTTLES:	SIZE:	TYPE:	FILTERED:		PRESER	RVATIVE:		PARAMETER:	
1 1	1000 ml	glass plastic	yes no	None, HCI, HN	NO ₃ , NaOH, H ₂ SO ₂			Sulfolane	
1	mI	glass plastic	yes no					Sulfate	
	ml	glass plastic	yes no	None, HCI, HN	NO ₃ , NaOH, H ₂ SO ₂	, ZnAc, TSP, BAK			
	ml	glass plastic	yes no						
	ml	glass plastic	yes no						
	ml	glass plastic	yes no						
	ml	glass plastic	yes no						
	ml	glass plastic	yes no		(5)				
	ml	glass plastic	yes no						
	ml	glass plastic glass plastic	yes no yes no						
		giass piastic	yes 110	Section 11) 1 per ser 1270 de la Reigne de processe de			Name of the Owner		
SAMPLING PE	RSONNEL	4.1		Chain	of Custody No	·			
Name (SIGNATU	JRE):	14 /4		Name (SIGNATURE):				

Merit Low Flow Logs 9/28/2022, 7:26 AM

CLIENT: Merit Energy	Co.	Monitoring Location:				
LOCATION: 13390 Lone T		Sample ID:	NW202			
	nship, Michigan	Well Type:	2" PVC			
PROJECT: 130685.2000	,					
INSPECTION						
	VED NO BENEDIED	Is cement pad in good repair?	YES NO REMEDIED			
Label on well?	YES NO REMEDIED YES NO REMEDIED	Is protective casing locked and in good repair?	YES NO REMEDIED			
Is reference mark visible? Standing water present?	YES NO REMEDIED 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		0170127	111:00			
		Date: 9/28/22 Time: _	14.09			
Top of Casing Elevation:						
Depth to Water:	ZZ.16 Measured wi	ith: ELECTRONIC TAPE CHALKE	ED TAPE OTHER			
Elevation of Water:	Well depth v	rerified? YES NO				
	•					
WELL PURGING		9/701-	1/1, 10			
Purge Method: (PERISTALTIC)	BLADDER OTHER	Date: 9/28/22 Start Tir	_{ne:_} 14:10			
Measured Well Depth: 25.	Screen Length:	Depth to Screen Midpo	pint:			
ivicasured Well Deptil.						
Water Lovel	Drawdown Pumping Rate Temp	Spec Cond. Diss Oxy ph	I ORP Turbidity			
Water Level		(umho/cm) (mg/l) (S.L				
Time (feet)	(feet) (ml/min) (°C)	.69 /3.4 7.4				
14.147 ==		-64 11.9 7.4				
14:23/775	5	11 127 76				
14:30 7 25	08 200 11.5		5 40.3 5.03			
14:35 /						
		_				
,	Stabilization Criteria: +/- 3%	+/- 3% +/- 10% +/- 0.1 L	Jnits +/- 10 mV +/- 10 %			
Total Volume Purged (gal):/-	2	(if > 0.5 mg/I)	(if > 5 NTU)			
		Stabilization Criteria Reference Doc. USI	EPA EQASOP-GW 001 Rev #3, January 19, 2010			
FIELD ANALYSIS	111:36					
Time:	14:3S	CALIBRATION CHEC	K Mark if			
Temperature:	//.3 deg. C	Standard (conc.) Read	ing Recalibrated			
Specific Conductance:	7.1	Specific Cond.:	umhos/cm			
Dissolved Oxygen:	17-	Dissolved Oxygen:				
pH:	7. 53 s.u.	pH:				
	11/ 7	1	mV			
ORP:	7 34	Eh:	NTU			
Turbidity: _	NTU	Turbidity:	_NIO			
CAMPLE COLLECTION T	Time: 1/15/16	Sample Duplicate 2:	ΔIA			
SAMPLE COLLECTION	Time: 14:40	Sample Duplicate ?:	1.5			
Appearance of Sample:	Clear, no oder	Sample Method:				
NO./BOTTLES: SIZE:	TYPE: FILTERED:	PRESERVATIVE:	PARAMETER:			
NO./BOTTLES: SIZE: 1		HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK	N 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2			
1125ml		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		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, HCl, H	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, HCl, F	HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK				
SAMPLING PERSONNEL	Chai	n of Custody No				
	11/6/1					
Name (SIGNATURE):	Name	(SIGNATURE):				

CLIENT:	Merit Energy	Co.	to an officer from the state of	The same of the sa	Monitori	ng Location:			
LOCATION:	13390 Lone T					Sample ID:		MW20	9
LOOAHON.	Hartland Tow		iaan					2" PVC	_
DDO IECT.		riisilip, wiici	ilgali			well Type.			
PROJECT:	130685.2000								
INSPECTION								À	
Label on well?		YES NO REMEDII	ED		Is cement pad in g	100		YES NO REMEDIE	
Is reference mark v	isible?	YES NO REMEDI	ED		Is protective casin			YES NO REMEDIE	
Standing water pres		YES NO REMEDII			Is inner cap in pla			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	:0
Repair Notes:	ED LEVEL							•	
STATIC WAT	EK LEVEL				Date: 9/2	0/77	Time: 14	1:50	
					Date: 110	0100	Time: [. 50	-
Top of Casing E	Elevation:	21 04							
Depth to Water		21.98		Measured wit		The same of the sa	E CHALKED TAPE	OTHER	
Elevation of Wa	ater:			Well depth ve	erified?	YES NO			
								same Satisfic Propherosco	
WELL PURG	ING				Date: 9/2	0/22		15:00	A
Purge Method:	PERISTALTIC)	BLADDER	OTHER		Date: 7/6	8126	Start Time:	15.00)
	-	-A'							
Measured Well	Depth: 35 -	70	Screen Length	1:		Depth to Scre	en Midpoint: _		_
Wedsured Well	Dopuii		oureur zerigi.		-				
	Water Lovel	Drawdown	Pumping Rate	Temp	Spec Cond.	Diss Oxy	рН	ORP	Turbidity
	Water Level	100							(NTU)
Time	7 ^(feet)	(feet)	(ml/min)	(°C)	(umho/cm)	(mg/l) / Z. Z	7.41	63.7	3.62
15.15	22.61	05	200	11.5	.84	1 4 1	7.71		3.51
15:20	22.01	- 05	200	11.4	. 79	10.1	1.45	<u>coo.l</u>	
15:25	22.01	- 03	200	11.3	.77	9.2	7. 45	59.1	3.26
13		10				-			
	-								
		Stahiliz	ation Criteria:	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 Units	+/- 10 mV	+/- 10 %
Total Volume Pu	urged (gal):	Otabiliz	ation ontona.	7 070	. 0,0	(if > 0.5 mg/l)			(if > 5 NTU)
Total Volumo I C	, goa (ga.)				Stabiliza	ation Criteria Refere	nce Doc. USEPA EQA	ASOP-GW 001 Rev	#3, January 19, 2010
FIELD ANAL	YSIS				te la presenta grapa de la la companya de la compa	aging states are a selected at the selected and a selected at the selected at			
1122074012		15:	25			CALIBRAT	ION CHECK		Mark if
	Time:								
	Temperature:	11.3	deg. C			Standard (conc.)	Reading		Recalibrated
Speci	fic Conductance:	.77	umhos/cm		Specific Cond.:		umho:	s/cm	
D	issolved Oxygen:	9.Z	mg/L		Dissolved Oxygen:		mg/L		
	pH:	aret	S.U.		pH:		S.U.		
	ORP:	58.1	mV		,				
1		3.26	NTU						
	Turbidity:	<u> </u>	NIU		rurbidity.		. 1		l
CAMPI F CC	LLECTION	-	100. 20			Sample Dupli	cato 2:	NO	
SAMPLE CO			15:30	1.1				_	
Appearance of S	Sample:	Clean	1, NO	dor		Sample Meth	oa:	./-	-
	0.75	T/DE	Ell TEDED		DDESE	ο\/ΔΤΙ\/⊏·		PARAMETER:	
NO./BOTTLES:	SIZE:	TYPE:	FILTERED:	None House	PRESEF NO₃, NaOH, H₂SO₄	RVATIVE:			
1 1	ml		yes no	The same of the sa					
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				
	ml	glass plastic	yes no		NO ₃ , NaOH, H ₂ SO ₄				
	mi	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	None, HCI, H	NO ₃ , NaOH, H ₂ SO ₄	, ZnAc, TSP, BAK			
SAMPLING F	ERSONNEL	- 1		Chain	of Custody No				
		Tu M	11						
Name (SIGNA	TURE):	101	0/	Name (SIGNATURE):				