

QUARTERLY PROJECT UPDATE REPORT **3rd QUARTER 2020**

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

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December 17, 2020

ECT No. 130685-2000

DOCUMENT REVIEW

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1.0 INTRODUCTION

This Quarterly Project Update Report was compiled by Environmental Consulting & Technology, Inc. (ECT), on behalf of Lambda Energy Resources, LLC (LER) and details remediation system operations and performance monitoring through the 3rd Quarter 2020 (July 1, 2020 through September 30, 2020) for 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 Northeast 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

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, µg/L). The maximum sulfolane concentration reported from a monitor well at the Site was 11,000 micrograms per liter (µg/L) from MW-20D on the June 19-21, 2017 sampling event. Refer to the Groundwater Characterization Report dated July 3, 2017 for a detailed summary of groundwater characterization and assessment activities.

A biosparging pilot study was conducted at the Site from May 1, 2017 through June 16, 2017. The pilot study included three tests to evaluate the effectiveness of biosparging to enhance bioremediation of sulfolane dissolved in groundwater at the Site. Data obtained from the pilot study indicates biosparging is an effective remedial alternative for the Site. Concentrations of sulfolane were reduced by 100% within five feet of the biosparge point and 97% to 99% at a distance of 20 feet from the biosparge point. Dissolved oxygen (DO) influence of 4.2-10 milligrams per liter (mg/L) was observed at monitoring locations situated 40 feet from the biosparge point. Refer to the Technical Memorandum – Biosparging Pilot Study dated July 28, 2017 for a summary of pilot study activities and results.

Information obtained from the pilot study was utilized to compile the Remediation System Design Plan dated August 11, 2017. The Remediation System Design Plan presented the biosparge point (BSP) array, remediation system equipment, anticipated remediation system operation and maintenance (O&M), and performance monitoring activities. Biosparge system installation activities commenced at the Site on August 21, 2017 and concluded with startup of the remediation system on November 16, 2017. Remediation system equipment and components were generally consistent with

details and specifications provided in the Remediation System Design Plan and included 41 biosparge points (BSPs). Refer to the Quarterly Project Update Report – 1st Quarter 2018 dated April 24, 2018 for a summary of remediation system installation activities, O&M, and results of performance monitoring events completed through the 1st Quarter 2018.

Performance monitoring results from the 2nd Quarter 2020 indicate the remediation system continues to mitigate concentrations of sulfolane in groundwater with all ten of the monitor wells that reported a concentration of sulfolane above the cleanup goal from the pre-startup sampling event reporting sulfolane non-detect from the monitoring event completed June 1-2, 2020. A supplemental performance monitoring event was completed on April 2, 2020 and included collecting groundwater samples from MW7D, MW-13D, MW-14D, and MW-19D. Concentrations of sulfolane were reported above the cleanup goal from MW-7D (330 µg/L) and MW-13D (16 µg/L) and non-detect from MW-14D and MW-19D for the supplemental monitoring event. The remediation system was shut down on February 17, 2020 and has not operated since. Refer to the Quarterly Project Update Report – 2nd Quarter 2020 dated September 10, 2020 for a summary of remediation system O&M and results of performance monitoring events completed through the 2nd Quarter 2020.

5.0 REMEDIATION SYSTEM OPERATION AND MAINTENANCE

The remediation system was shut down on February 17, 2020 for scheduled maintenance of the air sparge compressor skid. The remediation system has remained shut down since February 17, 2020.

6.0 PERFORMANCE MONITORING SUMMARY

The following sections detail performance monitoring activities completed at the Site in the 3rd Quarter 2020.

6.1 PERFORMANCE MONITORING EVENTS

Personnel from ECT completed the following performance monitoring event at the Site in the 3rd Quarter 2020:

- September 9-10, 2020 – 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 September 9-10, 2020 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, including QA/QC samples, were collected and analyzed in general accordance with currently applicable EGLE-RRD guidance documents.

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

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

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

6.3 CLEANUP GOALS

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

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

6.4 GROUNDWATER ANALYTICAL SUMMARY & CLEANUP CRITERIA COMPARISON

The following presents a summary and comparison of groundwater analytical results to the cleanup goal for sulfolane through the quarterly groundwater sampling event completed September 9-10, 2020.

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

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

- The following monitor wells reported sulfolane non-detect from all associated sampling events:
 - MW-1, MW-2, MW-2D, MW-3, MW-3D, MW-4, MW-5, MW-8, MW-9, MW-10, MW-11, MW-15, MW-16, MW-16D, MW-22D, and MW-23D
- The following monitor wells previously reported sulfolane above the cleanup goal prior to the pre-remediation system startup event, below the cleanup goal at the pre-remediation system startup event, and currently report sulfolane non-detect:
 - MW-19S and MW-20S
- The following monitor wells previously reported sulfolane above the cleanup goal prior to the pre-remediation system startup event and non-detect at and subsequent to the pre-remediation system startup event:
 - MW-7 and MW-13
- The following presents percent reductions to the concentration of sulfolane (relative to the highest concentration from/after the pre-remediation system startup sampling event) for monitor wells that reported sulfolane above the cleanup goal from the pre-remediation system startup sampling event:
 - September 9-10, 2020:
 - MW-7D, MW-13D, MW-14S, MW-14D, MW-15D, MW-17D, MW-18, MW-19D, and MW-20D: Non-detect – 100%
 - MW-17S: 190 µg/L – 93.9%
- Prior to the 2nd Quarter 2020 monitoring event, MW-13D was the only monitor well at the Site that reported concentrations of sulfate above the cleanup goal (250 mg/L). MW-17D has reported sulfate above the cleanup goal since the 2nd Quarter 2020 monitoring event. Sulfate concentrations were reported at 510 mg/L for MW-13D and 290 mg/L for MW-17D from the 3rd Quarter 2020 monitoring event. As noted in the Technical Memorandum – Biosparging Pilot Study dated July 28, 2017, natural attenuation/biodegradation (i.e sulfate reduction) of sulfate is expected once biosparging has ceased. In consideration of the remediation system being shut down since mid-February 2020, natural attenuation/biodegradation appears to be occurring as supported by the decrease to the concentration of sulfate at MW-13D from the peak concentration of 920 µg/L reported from the 1st Quarter 2020 monitoring event.

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. The cleanup goal for sulfolane has been updated on Table 1 and Table 2.

7.0 CONCLUSIONS AND RECOMMENDATIONS

As supported by the data presented herein, the remediation system has been effective at reducing concentrations of sulfolane after approximately three years (34 months) of operation. 13 of the 14 monitor wells that previously reported a concentration of sulfolane above the cleanup goal were reported non-detect at the September 9-10, 2020 monitoring event. Sulfolane was reported above the cleanup goal from MW-17S for the first time since the 3rd Quarter 2018 monitoring event.

The concentration of sulfate reported from MW-13D and MW-17D remains above the cleanup goal. However, the concentration of sulfate at MW-13D decreased to 510 µg/L from 920 µg/L from the 1st Quarter 2020 monitoring event, thus indicating natural attenuation/biodegradation (i.e sulfate reduction) of sulfate is likely occurring. Prior to the 2nd Quarter 2020 monitoring event, MW-13D was the only monitor well to have reported a concentration of sulfate above the cleanup goal. In addition to MW-13D, MW-17D reported sulfate above the cleanup goal for the two most recent monitoring events.

As a result of the concentration of sulfolane reported from MW-17S, a groundwater sample will be collected from MW-17S in October 2020. Pending the laboratory result, consideration will be given to operate select biosparge points in the immediate vicinity of MW-17S during the 4th Quarter 2020.

Per recommendations presented in the Quarterly Project Update Report – 3rd Quarter 2018 dated October 26, 2018, and correspondence with EGLE-OGMD staff, three performance monitoring events per year were to include the 14 monitor wells with current/previous detections of sulfolane and one performance monitoring event per year was to include all (37) monitor wells. As a result of sulfolane reported non-detect from two of the 2020 quarterly sampling events, thus indicating that the majority of the plume has been remediated and minimal concerns remain, sampling the remaining 23 monitor wells is no longer warranted.

8.0 SCHEDULE

The following schedule of activities is proposed/anticipated for the 4th Quarter 2020:

- The following performance monitoring events are proposed to be completed during the 4th Quarter 2020:
 - Supplemental monitoring event in October 2020 at MW-17S.
 - Quarterly monitoring event in December 2020 to include the 14 monitor wells with current/previous detections of sulfolane.
- The remediation system continues to be shut down pending the result for MW-17S from the October 2020 monitoring event.
- A quarterly project update report will be submitted subsequent to receipt of analytical data from the December 2020 monitoring event.

APPENDIX A

FIGURES

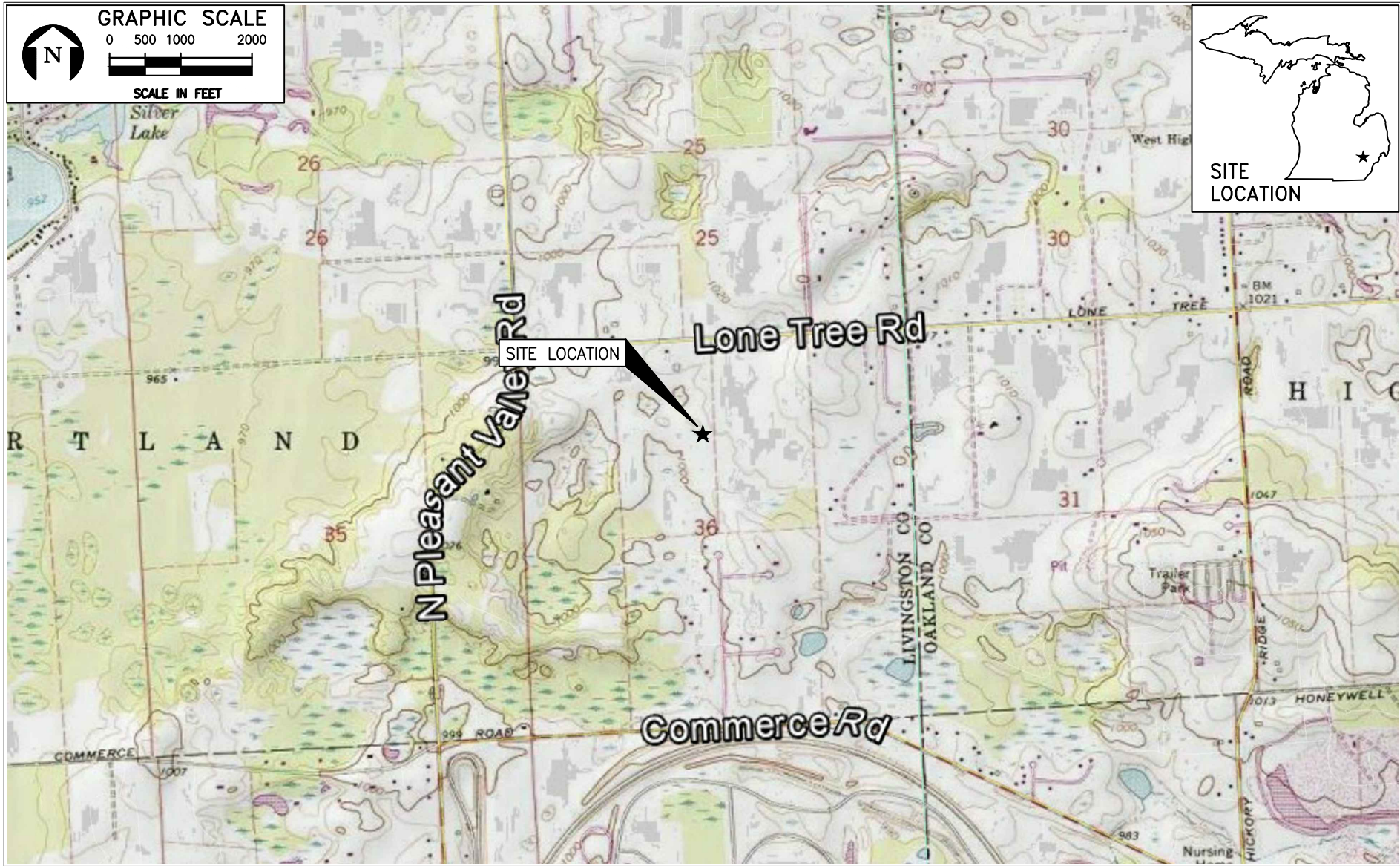
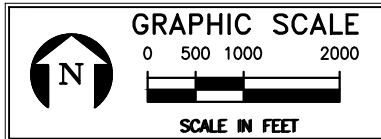


FIGURE 1
SITE LOCATION MAP
HARTLAND 36 GAS PLANT
PORTION OF E 1/2 OF NE 1/4 OF SECTION 36, T03N-R06E
HARTLAND TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN
Source: USGS QUad: Kent Lake, 2015; West Highland, 2015; ECT, 2016.



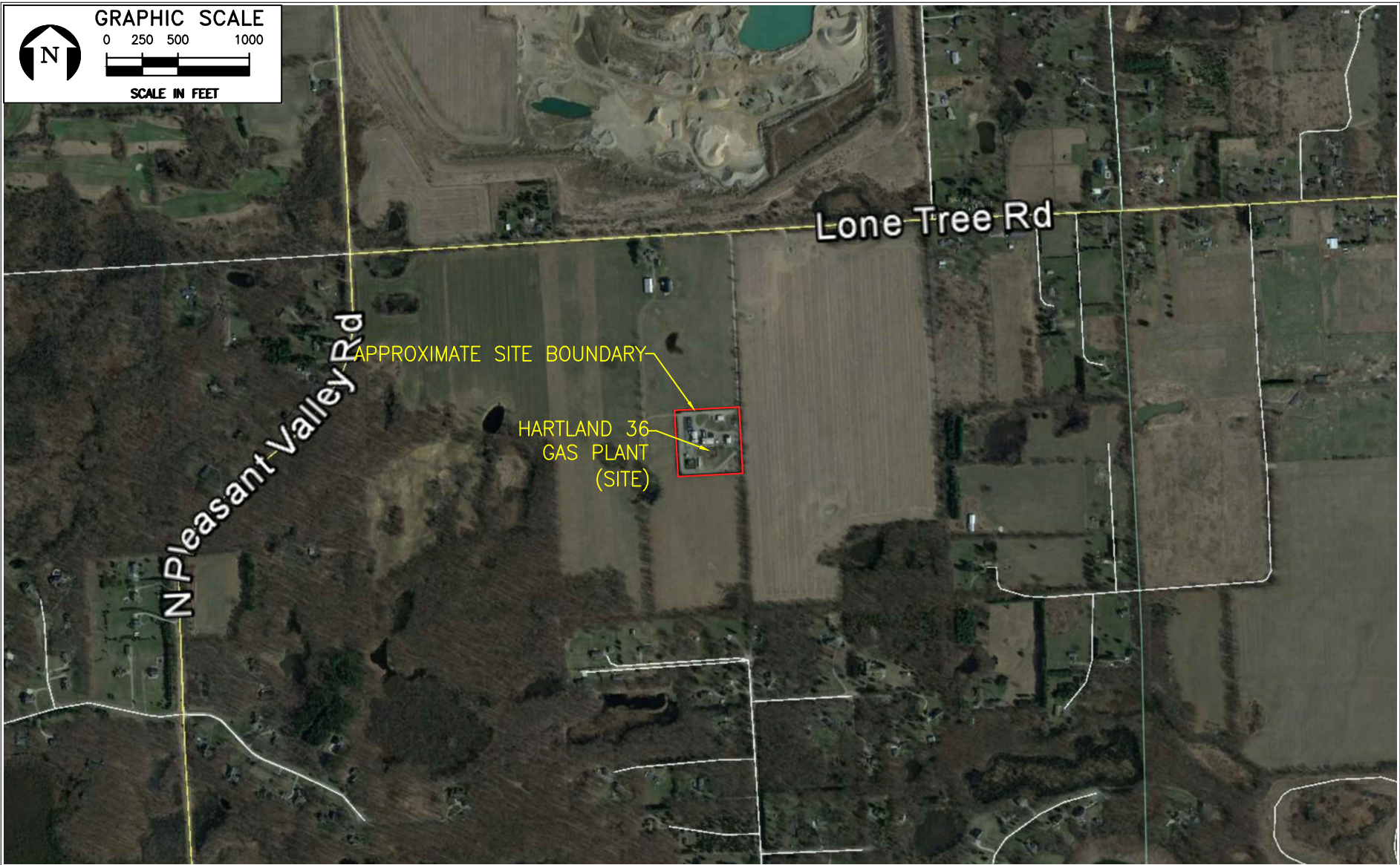


FIGURE 2
SITE AND SURROUNDING PROPERTIES MAP
HARTLAND 36 GAS PLANT
PORTION OF E 1/2 OF NE 1/4 OF SECTION 36, T03N-R06E
HARTLAND TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN
Source: Google Earth, 2016; ECT, 2016.



Legend

- Monitor Well
- Temporary Monitor Well
- Soil Boring
- Excavation Boundary
- Fenceline (former)
- BSP Location
- ND**
Not Detected at the Reporting Limit
Sulfolane concentrations (in $\mu\text{g/L}$) from the
September 2020 sampling event.



HARTLAND 36 GAS PLANT

FIGURE ADAPTED FROM SURVEY PERFORMED BY:



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

130685 - 2000
ECT PROJECT NUMBER

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

SHEET TITLE

SITE PLAN

SCALE: 1" = 50' @ 11x17



FIGURE
3

APPENDIX B

TABLES

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

| Date | MW-1 | | | MW-2 | | | MW-2D | | | MW-3 | | | MW-3D | | | MW-4 | | | MW-5 | | | MW-6 | | | MW-6D | | | MW-7 | | |
|----------------------------|------------------|-------|---------|-----------|-------|---------|-----------|-------|---------|-----------|-------|---------|-----------|------|---------|-----------|-------|---------|-----------|-------|---------|-----------|-------|---------|-----------|-------|---------|-----------|-------|---------|
| | Sulfolane | DO | Sulfate | Sulfolane | DO | Sulfate | Sulfolane | DO | Sulfate | Sulfolane | DO | Sulfate | Sulfolane | DO | Sulfate | Sulfolane | DO | Sulfate | Sulfolane | DO | Sulfate | Sulfolane | DO | Sulfate | Sulfolane | DO | Sulfate | Sulfolane | DO | Sulfate |
| 9/11-13/17 | ND | 8.08 | --- | ND | 4.14 | --- | ND | 5.36 | --- | ND | 6.96 | --- | ND | 1.03 | --- | ND | 7.75 | --- | ND | 7.31 | --- | ND | 2.77 | --- | ND | 5.90 | --- | ND | 1.55 | --- |
| 9/21/17 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 12/19-20/17 | ND | 8.83 | 6.4 | ND | 8.76 | 16 | ND | 5.02 | 21 | ND | 9.81 | 41 | ND | 1.90 | 27 | ND | 7.10 | 24 | ND | 6.85 | 24 | ND | 2.99 | 42 | ND | 9.26 | 19 | ND | 10.07 | 46 |
| 1/25/18 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2/27/18 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3/28-29/18 | ND | 7.87 | 5.0 | ND | 7.79 | 14 | ND | 4.05 | 17 | ND | 11.53 | 26 | ND | 1.31 | 30 | ND | 9.77 | 29 | ND | 6.31 | 24 | ND | 3.22 | 41 | ND | 6.92 | 20 | ND | 9.75 | 31 |
| 6/19-21/18 | ND | 15.96 | 9.3 | ND | 10.66 | 15 | ND | 7.87 | 18 | ND | 8.43 | 11 | ND | 1.06 | 28 | ND | 9.86 | 21 | ND | 12.49 | 28 | ND | 10.58 | 56 | ND | 10.91 | 10 | ND | 10.49 | 17 |
| 9/18-20/18 | ND | 9.98 | 8.5 | ND | 12.08 | 15 | ND | 10.21 | 21 | ND | 9.56 | 16 | ND | 1.87 | 34 | ND | 11.86 | 23 | ND | 11.26 | 25 | ND | 5.56 | 57 | ND | 8.27 | 22 | ND | 13.67 | 24 |
| 12/17-18/18 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3/25-26/19 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 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 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 12/3-4/19 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1/2/20 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2/13/20 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3/5-6/20 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4/2/20 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 6/1-2/20 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 9/9-10/20 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| % Decrease | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sulfolane Criterion (µg/L) | Non-detect - <10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sulfate Criterion (mg/L) | 250 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Date | MW-7D | | | MW-8 | | | MW-9 | | | MW-10 | | | MW-11 | | | MW-12S | | | MW-12D | | | MW-13 | | | MW-13D | | | | |
|----------------------------|------------------|-------|---------|-----------|-------|---------|-----------|------|---------|-----------|-------|---------|-----------|-------|---------|-----------|------|---------|-----------|------|---------|-----------|-------|---------|-----------|------|---------|-----|-----|
| | 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 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |
| 2/27/18 | 1.200 | 1.47 | 96 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |
| 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 | 9.90 | 210 | | |
| 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 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |
| 3/25-26/19 | 1.700 | 0.19 | 53 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 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 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 12/3-4/19 | 1.200 | 4.02 | 48 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1/2/20 | 2.400 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2/13/20 | 1.500 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3/5-6/20 | ND | 12.14 | 32 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4/2/20 | 330 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 6/1-2/20 | ND | 15.88 | 30 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 9/9-10/20 | ND | 12.56 | 27 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| % Decrease | 100% | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sulfolane Criterion (µg/L) | Non-detect - <10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sulfate Criterion (mg/L) | 250 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Notes

- 1) Concentrations of sulfolane reported in micrograms per liter (µg/L), equivalent to parts per billion (ppb).
- 2) DO - dissolved oxygen.
- 3) Concentrations of dissolved oxygen and sulfate reported in milligrams per liter (mg/L), equivalent to parts per million (ppm).
- 4) (---) - Not sampled.
- 5) ND - Concentration not detected above reporting limit.
- 6) Concentrations shown in parenthesis are from duplicate sample.
- 7) % Decrease of sulfolane is the most recent sampling event relative to highest reported concentration since the pre-system startup event (9/11-13/17).
- 8) Sulfolane criterion established by EGLE-Oil, Gas, and Minerals Division (EGLE-OGMD).
- 9) Sulfate criterion - Part 201 Residential Generic Cleanup Criteria and Screening Levels (Part 201 Residential GCCSLs), dated January 10, 2018, per R299.44 (Table 1) of the Michigan Administrative Code.
- 10) Concentrations that are shaded yellow 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,
ECT Project #13-0685-2000

| Date | MW-14S | | | MW-14D | | | MW-15 | | | MW-15D | | | MW-15DD | | | MW-16 | | | MW-16D | | | MW-17S | | | MW-17D | | | |
|----------------------------|------------------|-------|---------|---------------|-------|---------|-----------|-------|----------|-----------|------|---------|-----------|-------|---------|-----------|-------|---------|-----------|------|---------|-----------|-------|---------|-----------|-------|---------|-----|
| | Sulfolane | DO | Sulfate | Sulfolane | DO | Sulfate | Sulfolane | DO | Sulfate | Sulfolane | DO | Sulfate | Sulfolane | DO | Sulfate | Sulfolane | DO | Sulfate | Sulfolane | DO | Sulfate | Sulfolane | DO | Sulfate | Sulfolane | DO | Sulfate | |
| 9/11-13/17 | 120 | 0.85 | --- | 7,700 | 0.22 | --- | ND | 4.39 | --- | 230 | 0.22 | --- | 33 | 0.23 | --- | ND | 3.31 | --- | ND | 0.29 | --- | 3,100 | 0.25 | --- | 390 | 0.36 | --- | |
| 9/21/17 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 48 | 0.64 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| 12/19-20/17 | 100 | 2.05 | 91 | 7,100 | 0.45 | 39 | ND | 11.02 | 14 | ND | 4.22 | 46 | ND | 0.56 | 37 | ND | 8.42 | 16 | ND | 5.99 | 24 | 2,400 | 0.88 | 49 | 51 | 8.10 | 33 | |
| 1/25/18 | 85 | 3.35 | 56 | 5,400 | 0.43 | 44 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| 2/27/18 | ND | 9.63 | 110 | 4,000 | 0.50 | 48 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| 3/28-29/18 | ND | 8.61 | 120 | 3,600 (5,100) | 0.22 | 50 (51) | ND | 7.96 | 16 | ND | 6.86 | 29 | ND | 0.54 | 37 | ND | 8.73 | 19 | ND | 3.88 | 25 | 52 (52) | 3.28 | 64 | ND | 9.68 | 36 | |
| 6/19-21/18 | 52 | 0.28 | 67 | 2,600 (2,800) | 0.09 | 77 (77) | ND | 7.98 | 39 | ND | 3.80 | 27 | ND | 0.53 | 42 | ND | 16.43 | 43 | ND | 8.12 | 24 | 55 | 8.61 | 68 | ND (ND) | 10.63 | 42 (41) | |
| 9/18-20/18 | ND | 4.90 | 140 | 680 | 2.89 | 110 | ND | 8.25 | 32 | ND | 7.45 | 20 | ND | 0.60 | 41 | ND | 8.12 | 21 | ND | 2.08 | 22 | 32 | 3.07 | 65 | ND | 3.83 | 49 | |
| 12/17-18/18 | ND | 9.20 | 220 | 290 | 3.49 | 120 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| 3/25-26/19 | ND | 11.08 | 180 | ND | 5.71 | 120 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| 6/24-26/19 | ND | 9.88 | 160 | 110 | 5.82 | 120 | ND | 8.58 | 55 | ND | 5.65 | 28 | ND | 0.53 | 65 | ND | 11.24 | 23 | ND | 6.78 | 33 | ND | 1.43 | 69 | ND | 10.93 | 65 | |
| 9/23-24/19 | ND | 5.96 | 100 | 71 | 2.83 | 150 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| 12/3-4/19 | ND | 8.66 | 93 | 71 | 10.21 | 150 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| 1/2/20 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2/13/20 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3/5-6/20 | ND | 8.44 | 100 | ND | 11.39 | 130 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| 4/2/20 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 6/1-2/20 | ND | 5.62 | 120 | ND | 7.50 | 110 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| 9/9-10/20 | ND | 17.85 | 88 | ND | 10.57 | 100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| % Decrease | 100% | --- | --- | 100% | --- | --- | --- | --- | --- | --- | --- | --- | 100% | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| Sulfolane Criterion (µg/L) | Non-detect - <10 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sulfate Criterion (mg/L) | 250 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Date | MW-18 | | | MW-19S | | | MW-19D | | | MW-19DD | | | MW-20S | | | MW-20D | | | MW-21D | | | MW-22D | | | MW-23D | | | |
| | Sulfolane | DO | Sulfate | Sulfolane | DO | Sulfate | Sulfolane | DO | Sulfate | Sulfolane | DO | Sulfate | Sulfolane | DO | Sulfate | Sulfolane | DO | Sulfate | Sulfolane | DO | Sulfate | Sulfolane | DO | Sulfate | Sulfolane | DO | Sulfate | |
| 9/11-13/17 | 2,200 | 1.16 | --- | 29 | 1.64 | --- | 5,900 | 0.60 | --- | ND | 3.82 | --- | 63 | 1.50 | --- | 12,000 | 0.45 | --- | ND | 6.08 | --- | ND | 7.76 | --- | ND | 2.87 | --- | |
| 9/21/17 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| 12/19-20/17 | 660 | 0.67 | 37 | ND | 10.32 | 44 | 3,200 | 0.38 | 73 | ND | 7.16 | 22 | 49 | 4.04 | 45 | 10,000 | 0.52 | 43 | ND | 7.58 | 22 | ND | 5.74 | 12 | ND | 2.48 | 20 | |
| 1/25/18 | 2,300 | 0.74 | 34 | --- | --- | --- | ND | 0.77 | 74 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| 2/27/18 | 2,000 | 0.39 | 33 | --- | --- | --- | ND | 0.57 | 51 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| 3/28-29/18 | 980 | 0.71 | 34 | ND | 9.45 | 43 | 290 | 0.47 | 54 | ND | 6.27 | 26 | --- | 2.03 | 57 (58) | 10,000 | 2.00 | 51 | --- | 4.13 | 22 | ND | 5.32 | 9.4 | ND | 3.03 | 19 | |
| 6/19-21/18 | 14 | 3.13 | 39 | ND | 11.14 | 36 | 750 | 1.08 | 63 | ND | 5.25 | 23 | ND | 4.80 | 56 | 6,600 | 3.99 | 58 | ND | 4.22 | 21 | ND | 12.97 | 8.0 | ND | 5.72 | 20 | |
| 9/18-20/18 | ND (ND) | 0.67 | 49 (49) | ND | 12.84 | 44 | 170 (150) | 0.86 | 77 (77) | ND | 6.89 | 20 | ND | 9.28 | 63 | 22 (34) | 5.37 | 80 (81) | ND | 5.77 | 21 | ND | 7.65 | 6.8 | ND | 3.12 | 21 | |
| 12/17-18/18 | ND | 2.28 | 53 | ND | 8.95 | 47 | 440 | 3.02 | 83 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| 3/25-26/19 | ND | 1.09 | 47 | ND | 14.18 | 47 | 350 | 0.24 | 88 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| 6/24-26/19 | ND (ND) | 0.97 | 45 (44) | ND | 10.42 | 62 | 98 (73) | 0.17 | 100 (94) | ND | 7.27 | 23 | ND | 20.73 | 72 | ND (ND) | 10.88 | 94 (94) | ND | 5.66 | 24 | ND | 9.20 | 8.3 | ND | 6.39 | 30 | |
| 9/23-24/19 | ND | 1.60 | 43 | ND | 9.79 | 58 | ND | 8.39 | 110 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| 12/3-4/19 | ND | 0.93 | 49 | ND | 11.40 | 62 | 92 | 0.57 | 92 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| 1/2/20 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2/13/20 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3/5-6/20 | ND | 7.25 | 71 | ND | 13.19 | 68 | ND | 9.24 | 100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| 4/2/20 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 6/1-2/20 | ND | 6.08 | 61 | ND | 11.36 | 72 | ND | 15.02 | 92 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| 9/9-10/20 | ND | 0.56 | 50 | ND | 10.46 | 72 | ND | 13.48 | 84 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| % Decrease | 100% | --- | --- | 100% | --- | --- | 100% | --- | --- | --- | --- | --- | 100% | --- | --- | 100% | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| Sulfolane Criterion (µg/L) | Non-detect - <10 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sulfate Criterion (mg/L) | 250 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Notes

- Concentrations of sulfolane reported in micrograms per liter (µg/L), equivalent to parts per billion (ppb).
- DO - dissolved oxygen.
- Concentrations of dissolved oxygen and sulfate reported in milligrams per liter (mg/L), equivalent to parts per million (ppm).
- (---) - Not sampled.
- ND - Concentration not detected above reporting limit.
- Concentrations shown in parenthesis are from duplicate sample.
- % Decrease of sulfolane is the most recent sampling event relative to highest reported concentration since the pre-system startup event (9/11-13/17).
- Sulfolane criterion established by EGLE-Oil, Gas, and Minerals Division (EGLE-OGMD).
- 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.
- Concentrations that are shaded and bold exceed cleanup criteria.

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

| Sample Location | Screened Interval (ft bgs) | Sulfolane Concentrations (µg/L) | | | | | | | | | | | | | | | | | | |
|----------------------------|----------------------------|---------------------------------|-----------|----------|----------|------------|----------|---------|---------|-------------|---------|--------------|-----------------|-----------|------------|------------|------------|-----------|---------------|----|
| | | 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 | |
| MW-1 | 20.1 - 25.1 | ND | ND | ND | --- | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-2 | 19.1 - 24.1 | ND | ND | ND | --- | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-2D | 27.7 - 29.7 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-3 | 22.0 - 27.0 | ND | --- | ND | --- | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-3D | 30.0 - 32.0 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-4 | 23.1 - 28.1 | ND | ND | ND | ND | ND | ND | ND | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-5 | 18.0 - 23.0 | ND | ND | ND | --- | ND | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-6 | 25.4 - 30.4 | ND | ND | ND | ND | ND | ND | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-6D | 39.4 - 44.4 | --- | --- | --- | --- | ND | ND | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-7 | 25.2 - 30.2 | 880 | 44 | 510 | ND | 210 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 12 | --- | --- | |
| MW-7D | 39.2 - 44.2 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-8 | 24.6 - 29.6 | --- | --- | --- | --- | ND | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-9 | 23.6 - 28.6 | --- | --- | --- | --- | ND | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-10 | 21.2 - 26.2 | --- | --- | --- | --- | ND | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-11 | 21.7 - 26.7 | --- | --- | --- | --- | ND | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-12S | 20.5 - 25.5 | --- | --- | --- | --- | ND | ND | ND | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-12D | 39.7 - 44.7 | --- | --- | --- | --- | ND | ND | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-13 | 19.1 - 24.1 | --- | --- | --- | --- | 6,600 | 8,800 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-13D | 27.7 - 29.7 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-14S | 18.6 - 23.6 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-14D | 36.7 - 41.7 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-15 | 19.3 - 24.3 | --- | --- | --- | --- | ND | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-15D | 37.9 - 42.9 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-15DD | 50 - 55 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-16 | 19.5 - 24.5 | --- | --- | --- | --- | ND | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-16D | 31.4 - 33.4 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-17S | 19.9 - 24.9 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-17D | 35.4 - 37.4 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-18 | 19.9 - 24.9 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-19S | 22.6 - 27.6 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-19D | 43.0 - 48.0 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-19DD | 57 - 62 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-20S | 17.8 - 22.8 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-20D | 31.0 - 33.0 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-21D | 52.3 - 57.3 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-22D | 36.4 - 41.4 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| MW-23D | 28.1 - 30.1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| EGLE-OGMD Cleanup Criteria | | Non-detect - <10 µg/L | | | | | | | | | | | | | | | | | | |
| Collection Method | | LF | Bailer/PP | | | | | | | | | | | | | | | | | LF |

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



TABLE 2
SULFOLANE GROUNDWATER ANALYTICAL SUMMARY & CLEANUP CRITERIA COMPARISON

Hartland 36 Gas Plant
 SE/NE/NW Section 36, T03N-R06E,
 Hartland Township, Livingston County, Michigan
 ECT Project #13-0685-2000

| Sample Location | Screened Interval (ft bgs) | 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 | 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 |
|-----------------------------------|----------------------------|---------------------------------|--------------|---------------|--------------|--------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|------------|------------|------------|-------------|
| MW-1 | 20.1 - 25.1 | --- | --- | ND | ND | ND | --- | --- | ND | --- | --- | --- | --- | --- | --- | --- | --- |
| MW-2 | 19.1 - 24.1 | --- | --- | ND | ND | ND | --- | --- | ND | --- | --- | --- | --- | --- | --- | --- | --- |
| MW-2D | 27.7 - 29.7 | --- | --- | ND | ND | ND | --- | --- | ND | --- | --- | --- | --- | --- | --- | --- | --- |
| MW-3 | 22.0 - 27.0 | --- | --- | ND | ND | ND | --- | --- | ND | --- | --- | --- | --- | --- | --- | --- | --- |
| MW-3D | 30.0 - 32.0 | --- | --- | ND | ND | ND | --- | --- | ND | --- | --- | --- | --- | --- | --- | --- | --- |
| MW-4 | 23.1 - 28.1 | --- | --- | ND | ND | ND | --- | --- | ND | --- | --- | --- | --- | --- | --- | --- | --- |
| MW-5 | 18.0 - 23.0 | --- | --- | ND | ND | ND | --- | --- | ND | --- | --- | --- | --- | --- | --- | --- | --- |
| MW-6 | 25.4 - 30.4 | --- | --- | ND | ND | ND | --- | --- | ND | --- | --- | --- | --- | --- | --- | --- | --- |
| MW-6D | 39.4 - 44.4 | --- | --- | ND | ND | ND | --- | --- | ND | --- | --- | --- | --- | --- | --- | --- | --- |
| MW-7 | 25.2 - 30.2 | --- | --- | ND | ND | ND | ND | ND | ND | ND | ND | --- | --- | ND | --- | ND | ND |
| MW-7D | 39.2 - 44.2 | --- | 1,200 | 820 | 180 | 170 | 300 | 1,700 | 510 | 140 | 1,200 | 2,400 | 1,500 | ND | 330 | ND | ND |
| MW-8 | 24.6 - 29.6 | --- | --- | ND | ND | ND | --- | --- | ND | --- | --- | --- | --- | --- | --- | --- | --- |
| MW-9 | 23.6 - 28.6 | --- | --- | ND | ND | ND | --- | --- | ND | --- | --- | --- | --- | --- | --- | --- | --- |
| MW-10 | 21.2 - 26.2 | --- | --- | ND | ND | ND | --- | --- | ND | --- | --- | --- | --- | --- | --- | --- | --- |
| MW-11 | 21.7 - 26.7 | --- | --- | ND | ND | ND | --- | --- | ND | --- | --- | --- | --- | --- | --- | --- | --- |
| MW-12S | 20.5 - 25.5 | --- | --- | ND | ND | ND | --- | --- | ND | --- | --- | --- | --- | --- | --- | --- | --- |
| MW-12D | 39.7 - 44.7 | --- | --- | ND | ND | ND | --- | --- | ND | --- | --- | --- | --- | --- | --- | --- | --- |
| MW-13 | 19.1 - 24.1 | --- | --- | ND | ND | ND | ND | ND | ND | ND | ND | --- | --- | ND | --- | ND | ND |
| MW-13D | 27.7 - 29.7 | 400 | ND | ND | 180 | ND | ND | 16 | 19 | ND | 37 | --- | --- | ND | 16 | ND | ND |
| MW-14S | 18.6 - 23.6 | 85 | ND | ND | 52 | ND | ND | ND | ND | ND | ND | --- | --- | ND | --- | ND | ND |
| MW-14D | 36.7 - 41.7 | 5,400 | 4,000 | 5,100 | 2,800 | 680 | 290 | ND | 110 | 71 | 71 | --- | --- | ND | ND | ND | ND |
| MW-15 | 19.3 - 24.3 | --- | --- | ND | ND | ND | --- | --- | ND | --- | --- | --- | --- | --- | --- | --- | --- |
| MW-15D | 37.9 - 42.9 | --- | --- | ND | ND | ND | ND | ND | ND | ND | ND | --- | --- | ND | --- | ND | ND |
| MW-15DD | 50 - 55 | --- | --- | ND | ND | ND | --- | --- | ND | --- | --- | --- | --- | --- | --- | --- | --- |
| MW-16 | 19.5 - 24.5 | --- | --- | ND | ND | ND | --- | --- | ND | --- | --- | --- | --- | --- | --- | --- | --- |
| MW-16D | 31.4 - 33.4 | --- | --- | ND | ND | ND | --- | --- | ND | --- | --- | --- | --- | --- | --- | --- | --- |
| MW-17S | 19.9 - 24.9 | 510 | 460 | 52 | 55 | 32 | ND | ND | ND | ND | ND | --- | --- | ND | --- | ND | 190 |
| MW-17D | 35.4 - 37.4 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | --- | --- | ND | --- | ND | ND |
| MW-18 | 19.9 - 24.9 | 2,300 | 2,000 | 980 | 14 | 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 |
| MW-19D | 43.0 - 48.0 | ND | ND | 290 | 750 | 170 | 440 | 350 | 98 | ND | 92 | --- | --- | ND | ND | ND | ND |
| MW-19DD | 57 - 62 | --- | --- | ND | ND | ND | --- | --- | ND | --- | --- | --- | --- | --- | --- | --- | --- |
| MW-20S | 17.8 - 22.8 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | --- | --- | ND | --- | ND | ND |
| MW-20D | 31.0 - 33.0 | 10,000 | 9,300 | 10,000 | 6,600 | 34 | 19 | ND | ND | ND | ND | --- | --- | ND | --- | ND | ND |
| MW-21D | 52.3 - 57.3 | --- | --- | ND | ND | ND | --- | --- | ND | --- | --- | --- | --- | --- | --- | --- | --- |
| MW-22D | 36.4 - 41.4 | --- | --- | ND | ND | ND | --- | --- | ND | --- | --- | --- | --- | --- | --- | --- | --- |
| MW-23D | 28.1 - 30.1 | --- | --- | ND | ND | ND | --- | --- | ND | --- | --- | --- | --- | --- | --- | --- | --- |
| EGLE-OGMD Cleanup Criteria | | Non-detect - <10 µg/L | | | | | | | | | | | | | | | |
| Collection Method | | LF | | | | | | | | | | Bailer | | LF | Bailer | | LF |

Notes

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

APPENDIX C

LABORATORY ANALYTICAL REPORTS



18-Sep-2020

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

Re: **Lambda (Hartland 36 Gas Plant)**

Work Order: **20090803**

Dear Nick,

ALS Environmental received 13 samples on 10-Sep-2020 10:00 AM 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 24.

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

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

Sincerely,

Gary Byar

Electronically approved by: Gary Byar

Gary Byar
Project Manager

Report of Laboratory Analysis

Certificate No: MI: 0022

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

Environmental 

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant)
Work Order: 20090803

Work Order Sample Summary

| <u>Lab Samp ID</u> | <u>Client Sample ID</u> | <u>Matrix</u> | <u>Tag Number</u> | <u>Collection Date</u> | <u>Date Received</u> | <u>Hold</u> |
|--------------------|-------------------------|---------------|-------------------|------------------------|----------------------|--------------------------|
| 20090803-01 | MW-7S | Groundwater | | 9/9/2020 10:25 | 9/10/2020 10:00 | <input type="checkbox"/> |
| 20090803-02 | MW-15D | Groundwater | | 9/9/2020 10:45 | 9/10/2020 10:00 | <input type="checkbox"/> |
| 20090803-03 | MW-7D | Groundwater | | 9/9/2020 11:05 | 9/10/2020 10:00 | <input type="checkbox"/> |
| 20090803-04 | MW-19S | Groundwater | | 9/9/2020 11:55 | 9/10/2020 10:00 | <input type="checkbox"/> |
| 20090803-05 | MW-19D | Groundwater | | 9/9/2020 12:35 | 9/10/2020 10:00 | <input type="checkbox"/> |
| 20090803-06 | MW-20S | Groundwater | | 9/9/2020 11:47 | 9/10/2020 10:00 | <input type="checkbox"/> |
| 20090803-07 | MW-20D | Groundwater | | 9/9/2020 12:30 | 9/10/2020 10:00 | <input type="checkbox"/> |
| 20090803-08 | MW-18 | Groundwater | | 9/9/2020 13:20 | 9/10/2020 10:00 | <input type="checkbox"/> |
| 20090803-09 | MW-DUPE | Groundwater | | 9/9/2020 | 9/10/2020 10:00 | <input type="checkbox"/> |
| 20090803-10 | MW-17S | Groundwater | | 9/9/2020 14:35 | 9/10/2020 10:00 | <input type="checkbox"/> |
| 20090803-11 | MW-17D | Groundwater | | 9/9/2020 13:55 | 9/10/2020 10:00 | <input type="checkbox"/> |
| 20090803-12 | MW-13D | Groundwater | | 9/9/2020 14:20 | 9/10/2020 10:00 | <input type="checkbox"/> |
| 20090803-13 | MW-13S | Groundwater | | 9/9/2020 15:05 | 9/10/2020 10:00 | <input type="checkbox"/> |

ALS Group, USA

Date: 18-Sep-20

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant)
Sample ID: MW-7S
Collection Date: 9/9/2020 10:25 AM

Work Order: 20090803
Lab ID: 20090803-01
Matrix: GROUNDWATER

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|--|--------|------|-----------------------|----------------------------|-----------------|---------------------|
| SEMI-VOLATILE ORGANIC COMPOUNDS | | | SW846 8270D | Prep: SW3510 9/15/20 17:12 | | Analyst: EE |
| Sulfolane | ND | | 10 | µg/L | 1 | 9/15/2020 09:16 PM |
| Surr: 2-Fluorobiphenyl | 51.4 | | 26-79 | %REC | 1 | 9/15/2020 09:16 PM |
| Surr: 4-Terphenyl-d14 | 74.8 | | 43-106 | %REC | 1 | 9/15/2020 09:16 PM |
| Surr: Nitrobenzene-d5 | 50.1 | | 29-80 | %REC | 1 | 9/15/2020 09:16 PM |
| SULFATE | | | A4500-SO4 E-11 | | | Analyst: JDR |
| Sulfate | 21 | | 1.0 | mg/L | 1 | 9/10/2020 04:43 PM |

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

ALS Group, USA

Date: 18-Sep-20

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant)
Sample ID: MW-15D
Collection Date: 9/9/2020 10:45 AM

Work Order: 20090803
Lab ID: 20090803-02
Matrix: GROUNDWATER

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|--|--------|------|-----------------------|--------------|-----------------|---------------------|
| SEMI-VOLATILE ORGANIC COMPOUNDS | | | SW846 8270D | Prep: SW3510 | 9/15/20 17:12 | Analyst: EE |
| Sulfolane | ND | | 10 | µg/L | 1 | 9/15/2020 09:37 PM |
| Surr: 2-Fluorobiphenyl | 54.3 | | 26-79 | %REC | 1 | 9/15/2020 09:37 PM |
| Surr: 4-Terphenyl-d14 | 79.3 | | 43-106 | %REC | 1 | 9/15/2020 09:37 PM |
| Surr: Nitrobenzene-d5 | 53.3 | | 29-80 | %REC | 1 | 9/15/2020 09:37 PM |
| SULFATE | | | A4500-SO4 E-11 | | | Analyst: JDR |
| Sulfate | 21 | | 1.0 | mg/L | 1 | 9/10/2020 04:43 PM |

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

ALS Group, USA

Date: 18-Sep-20

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant)
Sample ID: MW-7D
Collection Date: 9/9/2020 11:05 AM

Work Order: 20090803
Lab ID: 20090803-03
Matrix: GROUNDWATER

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|--|--------|------|-----------------------|--------------|-----------------|---------------------|
| SEMI-VOLATILE ORGANIC COMPOUNDS | | | SW846 8270D | Prep: SW3510 | 9/15/20 17:12 | Analyst: EE |
| Sulfolane | ND | | 10 | µg/L | 1 | 9/15/2020 09:59 PM |
| Surr: 2-Fluorobiphenyl | 57.7 | | 26-79 | %REC | 1 | 9/15/2020 09:59 PM |
| Surr: 4-Terphenyl-d14 | 83.6 | | 43-106 | %REC | 1 | 9/15/2020 09:59 PM |
| Surr: Nitrobenzene-d5 | 56.0 | | 29-80 | %REC | 1 | 9/15/2020 09:59 PM |
| SULFATE | | | A4500-SO4 E-11 | | | Analyst: JDR |
| Sulfate | 27 | | 1.0 | mg/L | 1 | 9/10/2020 04:43 PM |

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

ALS Group, USA

Date: 18-Sep-20

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant)
Sample ID: MW-19S
Collection Date: 9/9/2020 11:55 AM

Work Order: 20090803
Lab ID: 20090803-04
Matrix: GROUNDWATER

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|--|--------|------|-----------------------|--------------|-----------------|---------------------|
| SEMI-VOLATILE ORGANIC COMPOUNDS | | | SW846 8270D | Prep: SW3510 | 9/15/20 17:12 | Analyst: EE |
| Sulfolane | ND | | 10 | µg/L | 1 | 9/15/2020 10:20 PM |
| Surr: 2-Fluorobiphenyl | 57.5 | | 26-79 | %REC | 1 | 9/15/2020 10:20 PM |
| Surr: 4-Terphenyl-d14 | 83.4 | | 43-106 | %REC | 1 | 9/15/2020 10:20 PM |
| Surr: Nitrobenzene-d5 | 55.3 | | 29-80 | %REC | 1 | 9/15/2020 10:20 PM |
| SULFATE | | | A4500-SO4 E-11 | | | Analyst: JDR |
| Sulfate | 72 | | 1.0 | mg/L | 1 | 9/10/2020 04:43 PM |

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

ALS Group, USA

Date: 18-Sep-20

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant)
Sample ID: MW-19D
Collection Date: 9/9/2020 12:35 PM

Work Order: 20090803
Lab ID: 20090803-05
Matrix: GROUNDWATER

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|--|--------|------|-----------------------|--------------|-----------------|---------------------|
| SEMI-VOLATILE ORGANIC COMPOUNDS | | | SW846 8270D | Prep: SW3510 | 9/15/20 17:12 | Analyst: EE |
| Sulfolane | ND | | 10 | µg/L | 1 | 9/15/2020 10:41 PM |
| Surr: 2-Fluorobiphenyl | 52.3 | | 26-79 | %REC | 1 | 9/15/2020 10:41 PM |
| Surr: 4-Terphenyl-d14 | 82.8 | | 43-106 | %REC | 1 | 9/15/2020 10:41 PM |
| Surr: Nitrobenzene-d5 | 49.3 | | 29-80 | %REC | 1 | 9/15/2020 10:41 PM |
| SULFATE | | | A4500-SO4 E-11 | | | Analyst: JDR |
| Sulfate | 84 | | 1.0 | mg/L | 1 | 9/10/2020 04:43 PM |

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

ALS Group, USA

Date: 18-Sep-20

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant)
Sample ID: MW-20S
Collection Date: 9/9/2020 11:47 AM

Work Order: 20090803
Lab ID: 20090803-06
Matrix: GROUNDWATER

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|--|--------|------|-----------------------|----------------------------|-----------------|---------------------|
| SEMI-VOLATILE ORGANIC COMPOUNDS | | | SW846 8270D | Prep: SW3510 9/15/20 17:12 | | Analyst: EE |
| Sulfolane | ND | | 10 | µg/L | 1 | 9/15/2020 11:03 PM |
| Surr: 2-Fluorobiphenyl | 63.6 | | 26-79 | %REC | 1 | 9/15/2020 11:03 PM |
| Surr: 4-Terphenyl-d14 | 86.2 | | 43-106 | %REC | 1 | 9/15/2020 11:03 PM |
| Surr: Nitrobenzene-d5 | 60.4 | | 29-80 | %REC | 1 | 9/15/2020 11:03 PM |
| SULFATE | | | A4500-SO4 E-11 | | | Analyst: JDR |
| Sulfate | 110 | | 4.0 | mg/L | 4 | 9/10/2020 04:43 PM |

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

ALS Group, USA

Date: 18-Sep-20

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant)
Sample ID: MW-20D
Collection Date: 9/9/2020 12:30 PM

Work Order: 20090803
Lab ID: 20090803-07
Matrix: GROUNDWATER

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|--|--------|------|-----------------------|--------------|-----------------|---------------------|
| SEMI-VOLATILE ORGANIC COMPOUNDS | | | SW846 8270D | Prep: SW3510 | 9/15/20 17:12 | Analyst: EE |
| Sulfolane | ND | | 10 | µg/L | 1 | 9/15/2020 11:24 PM |
| Surr: 2-Fluorobiphenyl | 55.1 | | 26-79 | %REC | 1 | 9/15/2020 11:24 PM |
| Surr: 4-Terphenyl-d14 | 90.0 | | 43-106 | %REC | 1 | 9/15/2020 11:24 PM |
| Surr: Nitrobenzene-d5 | 50.1 | | 29-80 | %REC | 1 | 9/15/2020 11:24 PM |
| SULFATE | | | A4500-SO4 E-11 | | | Analyst: JDR |
| Sulfate | 83 | | 1.0 | mg/L | 1 | 9/10/2020 04:43 PM |

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

ALS Group, USA

Date: 18-Sep-20

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant)
Sample ID: MW-18
Collection Date: 9/9/2020 01:20 PM

Work Order: 20090803
Lab ID: 20090803-08
Matrix: GROUNDWATER

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|--|--------|------|-----------------------|----------------------------|-----------------|---------------------|
| SEMI-VOLATILE ORGANIC COMPOUNDS | | | SW846 8270D | Prep: SW3510 9/15/20 17:12 | | Analyst: EE |
| Sulfolane | ND | | 20 | µg/L | 1 | 9/15/2020 08:55 PM |
| Surr: 2-Fluorobiphenyl | 46.0 | | 26-79 | %REC | 1 | 9/15/2020 08:55 PM |
| Surr: 4-Terphenyl-d14 | 77.4 | | 43-106 | %REC | 1 | 9/15/2020 08:55 PM |
| Surr: Nitrobenzene-d5 | 43.5 | | 29-80 | %REC | 1 | 9/15/2020 08:55 PM |
| SULFATE | | | A4500-SO4 E-11 | | | Analyst: JDR |
| Sulfate | 50 | | 1.0 | mg/L | 1 | 9/10/2020 04:43 PM |

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

ALS Group, USA

Date: 18-Sep-20

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant)
Sample ID: MW-DUPE
Collection Date: 9/9/2020

Work Order: 20090803
Lab ID: 20090803-09
Matrix: GROUNDWATER

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|--|--------|------|-----------------------|----------------------------|-----------------|---------------------|
| SEMI-VOLATILE ORGANIC COMPOUNDS | | | SW846 8270D | Prep: SW3510 9/15/20 17:12 | | Analyst: EE |
| Sulfolane | ND | | 10 | µg/L | 1 | 9/15/2020 11:46 PM |
| Surr: 2-Fluorobiphenyl | 63.4 | | 26-79 | %REC | 1 | 9/15/2020 11:46 PM |
| Surr: 4-Terphenyl-d14 | 87.2 | | 43-106 | %REC | 1 | 9/15/2020 11:46 PM |
| Surr: Nitrobenzene-d5 | 59.0 | | 29-80 | %REC | 1 | 9/15/2020 11:46 PM |
| SULFATE | | | A4500-SO4 E-11 | | | Analyst: JDR |
| Sulfate | 80 | | 1.0 | mg/L | 1 | 9/10/2020 04:43 PM |

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

ALS Group, USA

Date: 18-Sep-20

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant)
Sample ID: MW-17S
Collection Date: 9/9/2020 02:35 PM

Work Order: 20090803
Lab ID: 20090803-10
Matrix: GROUNDWATER

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|--|------------|------|-----------------------|----------------------------|-----------------|---------------------|
| SEMI-VOLATILE ORGANIC COMPOUNDS | | | SW846 8270D | Prep: SW3510 9/15/20 17:12 | | Analyst: EE |
| Sulfolane | 190 | | 10 | µg/L | 1 | 9/16/2020 12:07 AM |
| Surr: 2-Fluorobiphenyl | 53.0 | | 26-79 | %REC | 1 | 9/16/2020 12:07 AM |
| Surr: 4-Terphenyl-d14 | 83.5 | | 43-106 | %REC | 1 | 9/16/2020 12:07 AM |
| Surr: Nitrobenzene-d5 | 50.3 | | 29-80 | %REC | 1 | 9/16/2020 12:07 AM |
| SULFATE | | | A4500-SO4 E-11 | | | Analyst: JDR |
| Sulfate | 67 | | 1.0 | mg/L | 1 | 9/10/2020 04:43 PM |

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

ALS Group, USA

Date: 18-Sep-20

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant)
Sample ID: MW-17D
Collection Date: 9/9/2020 01:55 PM

Work Order: 20090803
Lab ID: 20090803-11
Matrix: GROUNDWATER

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|--|--------|------|-----------------------|----------------------------|-----------------|---------------------|
| SEMI-VOLATILE ORGANIC COMPOUNDS | | | SW846 8270D | Prep: SW3510 9/15/20 17:12 | | Analyst: EE |
| Sulfolane | ND | | 10 | µg/L | 1 | 9/16/2020 12:28 AM |
| Surr: 2-Fluorobiphenyl | 54.4 | | 26-79 | %REC | 1 | 9/16/2020 12:28 AM |
| Surr: 4-Terphenyl-d14 | 81.6 | | 43-106 | %REC | 1 | 9/16/2020 12:28 AM |
| Surr: Nitrobenzene-d5 | 51.8 | | 29-80 | %REC | 1 | 9/16/2020 12:28 AM |
| SULFATE | | | A4500-SO4 E-11 | | | Analyst: JDR |
| Sulfate | 290 | | 4.0 | mg/L | 4 | 9/10/2020 04:43 PM |

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

ALS Group, USA

Date: 18-Sep-20

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant)
Sample ID: MW-13D
Collection Date: 9/9/2020 02:20 PM

Work Order: 20090803
Lab ID: 20090803-12
Matrix: GROUNDWATER

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|--|--------|------|-----------------------|----------------------------|-----------------|---------------------|
| SEMI-VOLATILE ORGANIC COMPOUNDS | | | SW846 8270D | Prep: SW3510 9/15/20 17:12 | | Analyst: EE |
| Sulfolane | ND | | 10 | µg/L | 1 | 9/16/2020 12:49 AM |
| Surr: 2-Fluorobiphenyl | 56.0 | | 26-79 | %REC | 1 | 9/16/2020 12:49 AM |
| Surr: 4-Terphenyl-d14 | 91.5 | | 43-106 | %REC | 1 | 9/16/2020 12:49 AM |
| Surr: Nitrobenzene-d5 | 51.2 | | 29-80 | %REC | 1 | 9/16/2020 12:49 AM |
| SULFATE | | | A4500-SO4 E-11 | | | Analyst: JDR |
| Sulfate | 510 | | 10 | mg/L | 10 | 9/10/2020 04:43 PM |

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

ALS Group, USA

Date: 18-Sep-20

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant)
Sample ID: MW-13S
Collection Date: 9/9/2020 03:05 PM

Work Order: 20090803
Lab ID: 20090803-13
Matrix: GROUNDWATER

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|--|--------|------|-----------------------|----------------------------|-----------------|---------------------|
| SEMI-VOLATILE ORGANIC COMPOUNDS | | | SW846 8270D | Prep: SW3510 9/15/20 17:12 | | Analyst: EE |
| Sulfolane | ND | | 10 | µg/L | 1 | 9/16/2020 01:11 AM |
| Surr: 2-Fluorobiphenyl | 53.0 | | 26-79 | %REC | 1 | 9/16/2020 01:11 AM |
| Surr: 4-Terphenyl-d14 | 79.8 | | 43-106 | %REC | 1 | 9/16/2020 01:11 AM |
| Surr: Nitrobenzene-d5 | 49.2 | | 29-80 | %REC | 1 | 9/16/2020 01:11 AM |
| SULFATE | | | A4500-SO4 E-11 | | | Analyst: JDR |
| Sulfate | 92 | | 1.0 | mg/L | 1 | 9/10/2020 04:43 PM |

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

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant)
Work Order: 20090803

Case Narrative

Batch R297857 The MS/MSD recovery for Sulfate was below the lower control limit. The corresponding result in the parent sample may be biased low for this analyte. Client Sample ID: MW-18

Client: Lambda Energy Resources
Work Order: 20090803
Project: Lambda (Hartland 36 Gas Plant)

QC BATCH REPORT

Batch ID: **164244** Instrument ID **SVMS8** Method: **SW846 8270D**

| MBLK | | Sample ID: SBLKW1-164244-164244 | | | | Units: µg/L | | Analysis Date: 9/15/2020 06:46 PM | | | |
|------------------------|--------|--|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|--|
| Client ID: | | Run ID: SVMS8_200915A | | | | SeqNo: 6710325 | | Prep Date: 9/15/2020 | | DF: 1 | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual | |
| Sulfolane | ND | 10 | | | | | | | | | |
| Surr: 2-Fluorobiphenyl | 32.04 | 0 | 50 | 0 | 64.1 | 26-79 | 0 | | | | |
| Surr: 4-Terphenyl-d14 | 42.88 | 0 | 50 | 0 | 85.8 | 43-106 | 0 | | | | |
| Surr: Nitrobenzene-d5 | 30.65 | 0 | 50 | 0 | 61.3 | 29-80 | 0 | | | | |

| LCS | | Sample ID: SLCSW1-164244-164244 | | | | Units: µg/L | | Analysis Date: 9/15/2020 07:08 PM | | | |
|------------------------|--------|--|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|--|
| Client ID: | | Run ID: SVMS8_200915A | | | | SeqNo: 6710326 | | Prep Date: 9/15/2020 | | DF: 1 | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual | |
| Sulfolane | 72.18 | 10 | 100 | 0 | 72.2 | 30-100 | 0 | | | | |
| Surr: 2-Fluorobiphenyl | 33.65 | 0 | 50 | 0 | 67.3 | 26-79 | 0 | | | | |
| Surr: 4-Terphenyl-d14 | 35.92 | 0 | 50 | 0 | 71.8 | 43-106 | 0 | | | | |
| Surr: Nitrobenzene-d5 | 31.75 | 0 | 50 | 0 | 63.5 | 29-80 | 0 | | | | |

| MS | | Sample ID: 20090803-08A MS | | | | Units: µg/L | | Analysis Date: 9/15/2020 08:12 PM | | | |
|-------------------------|--------|-----------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|--|
| Client ID: MW-18 | | Run ID: SVMS8_200915A | | | | SeqNo: 6710327 | | Prep Date: 9/15/2020 | | DF: 1 | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual | |
| Sulfolane | 171.3 | 20 | 200 | 0 | 85.6 | 30-100 | 0 | | | | |
| Surr: 2-Fluorobiphenyl | 64.8 | 0 | 100 | 0 | 64.8 | 26-79 | 0 | | | | |
| Surr: 4-Terphenyl-d14 | 90.38 | 0 | 100 | 0 | 90.4 | 43-106 | 0 | | | | |
| Surr: Nitrobenzene-d5 | 60.74 | 0 | 100 | 0 | 60.7 | 29-80 | 0 | | | | |

| MSD | | Sample ID: 20090803-08A MSD | | | | Units: µg/L | | Analysis Date: 9/15/2020 08:33 PM | | | |
|-------------------------|--------|------------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|--|
| Client ID: MW-18 | | Run ID: SVMS8_200915A | | | | SeqNo: 6710328 | | Prep Date: 9/15/2020 | | DF: 1 | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual | |
| Sulfolane | 163.2 | 20 | 200 | 0 | 81.6 | 30-100 | 171.3 | 4.83 | 30 | | |
| Surr: 2-Fluorobiphenyl | 61.8 | 0 | 100 | 0 | 61.8 | 26-79 | 64.8 | 4.74 | 40 | | |
| Surr: 4-Terphenyl-d14 | 85.4 | 0 | 100 | 0 | 85.4 | 43-106 | 90.38 | 5.67 | 40 | | |
| Surr: Nitrobenzene-d5 | 59.08 | 0 | 100 | 0 | 59.1 | 29-80 | 60.74 | 2.77 | 40 | | |

The following samples were analyzed in this batch:

| | | |
|--------------|--------------|--------------|
| 20090803-01A | 20090803-02A | 20090803-03A |
| 20090803-04A | 20090803-05A | 20090803-06A |
| 20090803-07A | 20090803-08A | 20090803-09A |
| 20090803-10A | 20090803-11A | 20090803-12A |
| 20090803-13A | | |

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

Client: Lambda Energy Resources
 Work Order: 20090803
 Project: Lambda (Hartland 36 Gas Plant)

QC BATCH REPORT

Batch ID: **R297857** Instrument ID **GALLERY** Method: **A4500-SO4 E-11**

| MBLK | | Sample ID: MB-R297857-R297857 | | | | Units: mg/L | | Analysis Date: 9/10/2020 04:43 PM | | | |
|------------|--------|--------------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|--|
| Client ID: | | Run ID: GALLERY_200910A | | | | SeqNo: 6697158 | | Prep Date: | | DF: 1 | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual | |
| Sulfate | ND | 1.0 | | | | | | | | | |

| MS | | Sample ID: 20090803-08BMS | | | | Units: mg/L | | Analysis Date: 9/10/2020 04:43 PM | | | |
|-------------------------|--------|----------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|--|
| Client ID: MW-18 | | Run ID: GALLERY_200910A | | | | SeqNo: 6697174 | | Prep Date: | | DF: 1 | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual | |
| Sulfate | 91.63 | 1.0 | 50 | 50.18 | 82.9 | 95-118 | 0 | | | S | |

| MSD | | Sample ID: 20090803-08BMSD | | | | Units: mg/L | | Analysis Date: 9/10/2020 04:43 PM | | | |
|-------------------------|--------|-----------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|--|
| Client ID: MW-18 | | Run ID: GALLERY_200910A | | | | SeqNo: 6697175 | | Prep Date: | | DF: 1 | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual | |
| Sulfate | 92.49 | 1.0 | 50 | 50.18 | 84.6 | 95-118 | 91.63 | 0.934 | 10 | S | |

| LCS1 | | Sample ID: LCS1-R297857 | | | | Units: mg/L | | Analysis Date: 9/10/2020 04:43 PM | | | |
|------------|--------|--------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|--|
| Client ID: | | Run ID: GALLERY_200910A | | | | SeqNo: 6697159 | | Prep Date: | | DF: 1 | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual | |
| Sulfate | 10.54 | 1.0 | 10 | 0 | 105 | 90-119 | 0 | | | | |

| LCS2 | | Sample ID: LCS2-R297857 | | | | Units: mg/L | | Analysis Date: 9/10/2020 04:43 PM | | | |
|------------|--------|--------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|--|
| Client ID: | | Run ID: GALLERY_200910A | | | | SeqNo: 6697181 | | Prep Date: | | DF: 1 | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual | |
| Sulfate | 51.88 | 1.0 | 50 | 0 | 104 | 95-118 | 0 | | | | |

The following samples were analyzed in this batch:

- | | | |
|--------------|--------------|--------------|
| 20090803-01B | 20090803-02B | 20090803-03B |
| 20090803-04B | 20090803-05B | 20090803-06B |
| 20090803-07B | 20090803-08B | 20090803-09B |
| 20090803-10B | 20090803-11B | 20090803-12B |
| 20090803-13B | | |

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

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant)
WorkOrder: 20090803

**QUALIFIERS,
ACRONYMS, UNITS**

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

| <u>Acronym</u> | <u>Description</u> |
|----------------|-------------------------------------|
| 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 |

| <u>Units Reported</u> | <u>Description</u> |
|-----------------------|----------------------|
| µg/L | Micrograms per Liter |
| mg/L | Milligrams per Liter |

Sample Receipt Checklist

Client Name: LAMBDA-KAL

Date/Time Received: 10-Sep-20 10:00

Work Order: 20090803

Received by: DS

Checklist completed by Diane Shaw 10-Sep-20
eSignature Date

Reviewed by: Gary Byar 10-Sep-20
eSignature Date

Matrices: Groundwater

Carrier name: UPS

Shipping container/cooler in good condition? Yes No Not Present

Custody seals intact on shipping container/cooler? Yes No Not Present

Custody seals intact on sample bottles? Yes No Not Present

Chain of custody present? Yes No

Chain of custody signed when relinquished and received? Yes No

Chain of custody agrees with sample labels? Yes No

Samples in proper container/bottle? Yes No

Sample containers intact? Yes No

Sufficient sample volume for indicated test? Yes No

All samples received within holding time? Yes No

Container/Temp Blank temperature in compliance? Yes No

Sample(s) received on ice? Yes No

Temperature(s)/Thermometer(s): 4.4/4.4, 3.6/3.6 c IR1

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage: 9/10/2020 11:04:43 AM

Water - VOA vials have zero headspace? Yes No No VOA vials submitted

Water - pH acceptable upon receipt? Yes No N/A

pH adjusted? Yes No N/A

pH adjusted by:

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:



Cincinnati, OH
+1 513 733 5336

Fort Collins, CO
+1 970 490 1511

Everett, WA
+1 425 356 2600

Holland, MI
+1 616 399 6070

Chain of Custody Form

Page 1 of 2

COC ID: 38437

Houston, TX
+1 281 530 5656

Spring City, PA
+1 610 948 4903

South Charleston, WV
+1 304 356 3168

Middletown, PA
+1 717 944 5541

Salt Lake City, UT
+1 801 266 7700

York, PA
+1 717 505 5280

ALS Project Manager:

ALS Work Order #: 20090803

| Customer Information | | Project Information | | Parameter/Method Request for Analysis | | | | | | | | | | | | |
|----------------------|--------------------------------|---------------------|--|---------------------------------------|------------------|-------------------------|--|--|--|--|--|--|--|--|--|--|
| Purchase Order | | Project Name | <u>HARTLAND 36 GWS plant</u> | A | <u>Sulfonane</u> | <u>(1) random liter</u> | | | | | | | | | | |
| Work Order | | Project Number | | B | <u>Sulfate</u> | <u>(1) 125 poly</u> | | | | | | | | | | |
| Company Name | <u>ECT, INC</u> | Bill To Company | <u>Lambda ENERGY</u> | C | | | | | | | | | | | | |
| Send Report To | <u>Jeremy Lowandowski</u> | Invoice Attn | <u>Nick Summerland</u> | D | | | | | | | | | | | | |
| Address | <u>3399 Veterans</u> | Address | <u>1510 Thomas</u> | E | | | | | | | | | | | | |
| | | | | F | | | | | | | | | | | | |
| City/State/Zip | <u>Traverse City, MI 49684</u> | City/State/Zip | <u>Kalkaska, MI 49646</u> | G | | | | | | | | | | | | |
| Phone | <u>231-946-8200</u> | Phone | <u>231-258-6411</u> | H | | | | | | | | | | | | |
| Fax | <u>231-946-8208</u> | Fax | | I | | | | | | | | | | | | |
| e-Mail Address | <u>jlowandowski@ectinc.com</u> | e-Mail Address | <u>michigan-invoices@lambdaenergyllc.com</u> | J | | | | | | | | | | | | |

| No. | Sample Description | Date | Time | Matrix | Pres. | # Bottles | A | B | C | D | E | F | G | H | I | J | Hold |
|-----|---------------------|-----------------|--------------|-----------|-------|-----------|----------|----------|---|---|---|---|---|---|---|---|------|
| 1 | <u>MW-75</u> | <u>9/9/2020</u> | <u>10:25</u> | <u>GW</u> | | <u>2</u> | <u>X</u> | <u>X</u> | | | | | | | | | |
| 2 | <u>MW-15D</u> | <u>9/9/2020</u> | <u>10:45</u> | <u>GW</u> | | <u>2</u> | <u>X</u> | <u>X</u> | | | | | | | | | |
| 3 | <u>MW-7D</u> | <u>9/9/2020</u> | <u>11:05</u> | <u>GW</u> | | <u>2</u> | <u>X</u> | <u>X</u> | | | | | | | | | |
| 4 | <u>MW-19s</u> | <u>9/9/2020</u> | <u>11:55</u> | <u>GW</u> | | <u>2</u> | <u>X</u> | <u>X</u> | | | | | | | | | |
| 5 | <u>MW-19D</u> | <u>9/9/2020</u> | <u>12:35</u> | <u>GW</u> | | <u>2</u> | <u>X</u> | <u>X</u> | | | | | | | | | |
| 6 | <u>MW-20S</u> | <u>9/9/2020</u> | <u>11:47</u> | <u>GW</u> | | <u>2</u> | <u>X</u> | <u>X</u> | | | | | | | | | |
| 7 | <u>MW-20D</u> | <u>9/9/2020</u> | <u>12:30</u> | <u>GW</u> | | <u>2</u> | <u>X</u> | <u>X</u> | | | | | | | | | |
| 8 | <u>MW-18</u> | <u>9/9/2020</u> | <u>13:20</u> | <u>GW</u> | | <u>2</u> | <u>X</u> | <u>X</u> | | | | | | | | | |
| 8 | <u>MW-18 MS/MSD</u> | <u>9/9/2020</u> | <u>13:20</u> | <u>GW</u> | | <u>2</u> | <u>X</u> | <u>X</u> | | | | | | | | | |
| 9 | <u>MW-DUPE</u> | <u>9/9/2020</u> | <u>---</u> | <u>GW</u> | | <u>2</u> | <u>X</u> | <u>X</u> | | | | | | | | | |

| | | | | | | | | | | | |
|--|--------------------------|--------------------------------------|---|--|-------------------------|-----------------------------|---|---|--|--|--|
| Sampler(s) Please Print & Sign <u>Tom Knapp</u> | | Shipment Method <u>UPS ground</u> | | Turnaround Time in Business Days (BD) <input type="checkbox"/> 10 BD <input checked="" type="checkbox"/> 5 BD <input type="checkbox"/> 3 BD <input type="checkbox"/> 2 BD <input type="checkbox"/> 1 BD | | | | Results Due Date: | | | |
| Relinquished by: <u>Joey Knapp</u> | Date: <u>9/9/2020</u> | Time: <u>16:00</u> | Received by: <u>GRS</u> | | Notes: | | | | | | |
| Relinquished by: <u>UPS</u> | Date: <u>9/10/20</u> | Time: <u>1000</u> | Received by (Laboratory): <u>[Signature]</u> | | Cooler ID <u>IR1</u> | Cooler Temp <u>4.4°C</u> | QC Package: (Check One Box Below) | | | | |
| Logged by (Laboratory): <u>DFS</u> | Date: <u>9/10/20</u> | Time: <u>1100</u> | Checked by (Laboratory): <u>GRS</u> | | <u>PH22</u> | <u>3.6°C</u> | <input checked="" type="checkbox"/> Level II Std QC | <input type="checkbox"/> TRRP Checklist | | | |
| Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-5035 | | | | | | | <input type="checkbox"/> Level III Std QC/Raw Date | | | <input type="checkbox"/> TRRP Level IV | |
| | | | | | | | <input type="checkbox"/> Level IV SW846/CLP | | | <input type="checkbox"/> Other | |



ALS Environmental
781 Industrial Cir, Ste 3
Traverse City, Michigan 49686
(Tel) 231.421.3204
(Cell) 231.944.3459

Chain of Custody Form

Page 2 of 2

38437A



RETURN SAMPLES TO:
ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
(Tel) 616.399.6070
(Fax) 616.399.6185

ALS Project Manager: Gary Byar ALS Work Order #: 20090803

| Customer Information | | Project Information | | Parameter/Method Request for Analysis | | | | | | | | | | | |
|----------------------|-------------------------|---------------------|---------------------------------------|---------------------------------------|---------------------------|--|--|--|--|--|--|--|--|--|--|
| Purchase Order | | Project Name | Hartland 36 Gas Plant | A | Sulfolane (1) Amber Liter | | | | | | | | | | |
| Work Order | | Project Number | | B | Sulfate (1) 125 p | | | | | | | | | | |
| Company Name | ECT, Inc. | Bill To Company | Lambda Energy | C | | | | | | | | | | | |
| Send Report To | Jeremy Lewandowski | Invoice Attn. | Nick Summerland | D | | | | | | | | | | | |
| Address | 3399 Veterans Dr. | Address | 1510 Thomas Rd | E | | | | | | | | | | | |
| | | | | F | | | | | | | | | | | |
| City/State/Zip | Traverse City, MI 49684 | City/State/Zip | Kalkaska, MI 49646 | G | | | | | | | | | | | |
| Phone | 231-946-8200 | Phone | 231-258-6411 | H | | | | | | | | | | | |
| Fax | 231-946-8208 | Fax | | I | | | | | | | | | | | |
| e-Mail Address | jlewandowski@ectinc.com | | michigan.invoices@lambdaenergyllc.com | J | | | | | | | | | | | |

| No. | Sample Description | Date | Time | Matrix | Pres. Key Numbers | # Bottles | A | B | C | D | E | F | G | H | I | J | Hold |
|-----|--------------------|----------|-------|--------|-------------------|-----------|---|---|---|---|---|---|---|---|---|---|------|
| 10 | MW-173 | 9/9/2020 | 1435 | GW | | 2 | X | X | | | | | | | | | |
| 11 | MW-17D | 9/9/2020 | 1355 | GW | | 2 | X | X | | | | | | | | | |
| 12 | MW-13D | 9/9/2020 | 1420 | GW | | 2 | X | X | | | | | | | | | |
| 13 | MW-133 | 9/9/2020 | 15:05 | GW | | 2 | X | X | | | | | | | | | |

| | | | | | | | | | | | |
|---|-------------------|--------------------------------|---|---|-------|---|-----------------------------|---|--|--|--|
| Sampler(s): Please Print & Sign <i>Tom K... Dorey...</i> | | Shipment Method: UPS Ground | | Required Turnaround Time: (Check Box) <input type="checkbox"/> 10 Wk Days <input checked="" type="checkbox"/> 5-7 Wk Days <input type="checkbox"/> 3 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour | | | | Results Due Date: | | | |
| Relinquished by: <i>Dorey</i> | Date: 9/6/2020 | Time: 16:00 | Received by: <i>UPS</i> | Date: | Time: | Notes: ALS Project: MERITENERGY - Misc | | | | | |
| Relinquished by: <i>UPS</i> | Date: 9/10/20 | Time: 1000 | Received by (Laboratory): <i>[Signature]</i> | Date: | Time: | ALS Cooler ID: <i>121</i> | Cooler Temp: <i>4.4c</i> | QC Package: (Check Box Below) <input checked="" type="checkbox"/> Level II: Standard QC <input type="checkbox"/> Level III: Raw Data <input type="checkbox"/> TRRP LRC <input type="checkbox"/> TRRP Level IV <input type="checkbox"/> Level IV: SW846 Methods/CLP like <input type="checkbox"/> Other: | | | |
| Logged by (Laboratory): <i>DFS</i> | Date: 9/10/20 | Time: 1100 | Checked by (Laboratory): <i>[Signature]</i> | | | | | | | | |

Preservative Key: 1-HCl 2-HNO₃ 3-H₂SO₄ 4-NaOH 5-Na₂S₂O₃ 6-NaHSO₄ 7-Other 8-4°C Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS.

50 LBS

1 OF 1

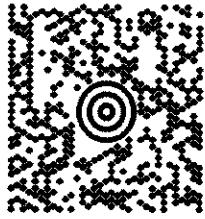
FROM:
LISA ZUBER
(517) 272-9200
ECT, INC.
3125 SOVEREIGN DRIVE
LANSING MI 48911-4240

SHIP TO:

**SAMPLE RECEIVING
(616) 399-6070
ALS ENVIRONMENTAL
3352 128TH AVENUE
HOLLAND MI 49424-9263**

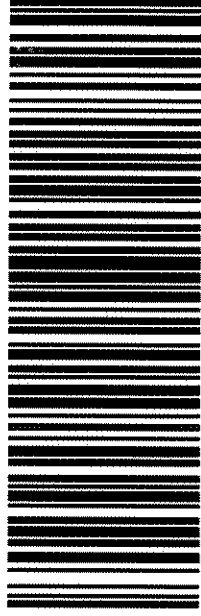
REF 1:130685, 2000

MI 495 9-04



UPS NEXT DAY AIR 1

TRACKING #: 1Z V54 9W4 01 5001 0004



BILLING: 3RD PARTY

WS 22.0.17 KONICA MINOLTA 31.0A.07/2020

Fold here and place in label pouch

Custody Seal

<http://www.alsglobal.com>

ALS Environmental
3352 128th Avenue
Holland, Michigan 49424-9263

Company: ECT
Phone: 616-399-6070

Attr. Sample Receiving

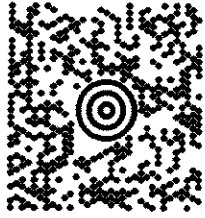
Date: 7/27/20

FROM:
LISA ZUBER
(517) 272-9200
ECT, INC.
3125 SOVEREIGN DRIVE
LANSING MI 48911-4240

1 OF 1

50 LBS

MI 495 9-04



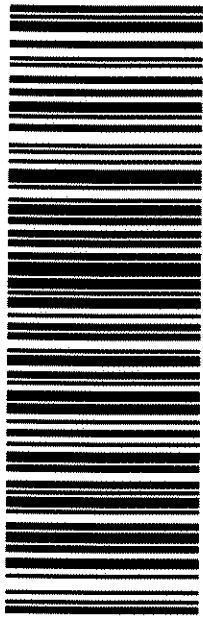
SHIP TO:

**SAMPLE RECEIVING
(616) 399-6070
ALS ENVIRONMENTAL
3352 128TH AVENUE
HOLLAND MI 49424-9263**

UPS NEXT DAY AIR

1

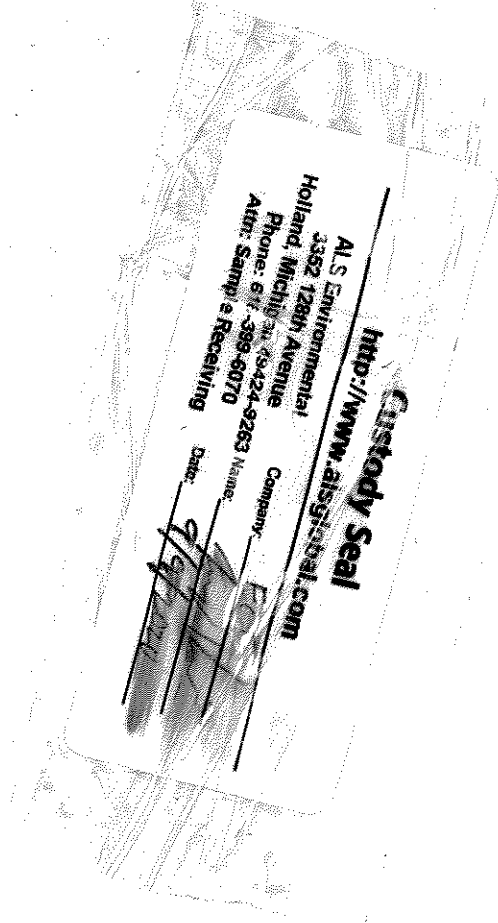
TRACKING #: 1Z V54 9W4 01 5183 6415



REF 1:130685, 2000

BILLING: 3RD PARTY

Fold here and place in label pouch





18-Sep-2020

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

Re: **Lambda (Hartland 36 Gas Plant)**

Work Order: **20090904**

Dear Nick,

ALS Environmental received 2 samples on 11-Sep-2020 10:30 AM 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 11.

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

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

Sincerely,

Gary Byar

Electronically approved by: Gary Byar

Gary Byar
Project Manager

Report of Laboratory Analysis

Certificate No: MI: 0022

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

Environmental 

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RIGHT SOLUTIONS RIGHT PARTNER

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant)
Work Order: 20090904

Work Order Sample Summary

| <u>Lab Samp ID</u> | <u>Client Sample ID</u> | <u>Matrix</u> | <u>Tag Number</u> | <u>Collection Date</u> | <u>Date Received</u> | <u>Hold</u> |
|--------------------|-------------------------|---------------|-------------------|------------------------|----------------------|--------------------------|
| 20090904-01 | MW-14S | Groundwater | | 9/10/2020 09:40 | 9/11/2020 10:30 | <input type="checkbox"/> |
| 20090904-02 | MW-14D | Groundwater | | 9/10/2020 10:25 | 9/11/2020 10:30 | <input type="checkbox"/> |

ALS Group, USA

Date: 18-Sep-20

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant)
Sample ID: MW-14S
Collection Date: 9/10/2020 09:40 AM

Work Order: 20090904
Lab ID: 20090904-01
Matrix: GROUNDWATER

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|--|--------|------|-----------------------|----------------------------|-----------------|---------------------|
| SEMI-VOLATILE ORGANIC COMPOUNDS | | | SW846 8270D | Prep: SW3510 9/15/20 17:12 | | Analyst: EE |
| Sulfolane | ND | | 10 | µg/L | 1 | 9/16/2020 01:32 AM |
| Surr: 2-Fluorobiphenyl | 55.6 | | 26-79 | %REC | 1 | 9/16/2020 01:32 AM |
| Surr: 4-Terphenyl-d14 | 83.2 | | 43-106 | %REC | 1 | 9/16/2020 01:32 AM |
| Surr: Nitrobenzene-d5 | 52.8 | | 29-80 | %REC | 1 | 9/16/2020 01:32 AM |
| SULFATE | | | A4500-SO4 E-11 | | | Analyst: JDR |
| Sulfate | 88 | | 2.0 | mg/L | 2 | 9/16/2020 02:59 PM |

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

ALS Group, USA

Date: 18-Sep-20

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant)
Sample ID: MW-14D
Collection Date: 9/10/2020 10:25 AM

Work Order: 20090904
Lab ID: 20090904-02
Matrix: GROUNDWATER

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|--|--------|------|-----------------------|----------------------------|-----------------|---------------------|
| SEMI-VOLATILE ORGANIC COMPOUNDS | | | SW846 8270D | Prep: SW3510 9/15/20 17:12 | | Analyst: EE |
| Sulfolane | ND | | 10 | µg/L | 1 | 9/16/2020 01:53 AM |
| Surr: 2-Fluorobiphenyl | 53.6 | | 26-79 | %REC | 1 | 9/16/2020 01:53 AM |
| Surr: 4-Terphenyl-d14 | 79.8 | | 43-106 | %REC | 1 | 9/16/2020 01:53 AM |
| Surr: Nitrobenzene-d5 | 49.6 | | 29-80 | %REC | 1 | 9/16/2020 01:53 AM |
| SULFATE | | | A4500-SO4 E-11 | | | Analyst: JDR |
| Sulfate | 100 | | 2.0 | mg/L | 2 | 9/16/2020 02:59 PM |

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

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant)
Work Order: 20090904

Case Narrative

Batch R298294 The MS/MSD data for Sulfate is not related to this project. No qualification is needed.

Client: Lambda Energy Resources
Work Order: 20090904
Project: Lambda (Hartland 36 Gas Plant)

QC BATCH REPORT

Batch ID: **164244** Instrument ID **SVMS8** Method: **SW846 8270D**

| MBLK | | Sample ID: SBLKW1-164244-164244 | | | | Units: µg/L | | Analysis Date: 9/15/2020 06:46 PM | | | |
|-------------------------------|--------|--|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|--|
| Client ID: | | Run ID: SVMS8_200915A | | | | SeqNo: 6710325 | | Prep Date: 9/15/2020 | | DF: 1 | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual | |
| Sulfolane | ND | 10 | | | | | | | | | |
| <i>Surr: 2-Fluorobiphenyl</i> | 32.04 | 0 | 50 | 0 | 64.1 | 26-79 | 0 | | | | |
| <i>Surr: 4-Terphenyl-d14</i> | 42.88 | 0 | 50 | 0 | 85.8 | 43-106 | 0 | | | | |
| <i>Surr: Nitrobenzene-d5</i> | 30.65 | 0 | 50 | 0 | 61.3 | 29-80 | 0 | | | | |

| LCS | | Sample ID: SLCSW1-164244-164244 | | | | Units: µg/L | | Analysis Date: 9/15/2020 07:08 PM | | | |
|-------------------------------|--------|--|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|--|
| Client ID: | | Run ID: SVMS8_200915A | | | | SeqNo: 6710326 | | Prep Date: 9/15/2020 | | DF: 1 | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual | |
| Sulfolane | 72.18 | 10 | 100 | 0 | 72.2 | 30-100 | 0 | | | | |
| <i>Surr: 2-Fluorobiphenyl</i> | 33.65 | 0 | 50 | 0 | 67.3 | 26-79 | 0 | | | | |
| <i>Surr: 4-Terphenyl-d14</i> | 35.92 | 0 | 50 | 0 | 71.8 | 43-106 | 0 | | | | |
| <i>Surr: Nitrobenzene-d5</i> | 31.75 | 0 | 50 | 0 | 63.5 | 29-80 | 0 | | | | |

| MS | | Sample ID: 20090803-08A MS | | | | Units: µg/L | | Analysis Date: 9/15/2020 08:12 PM | | | |
|-------------------------------|--------|-----------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|--|
| Client ID: | | Run ID: SVMS8_200915A | | | | SeqNo: 6710327 | | Prep Date: 9/15/2020 | | DF: 1 | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual | |
| Sulfolane | 171.3 | 20 | 200 | 0 | 85.6 | 30-100 | 0 | | | | |
| <i>Surr: 2-Fluorobiphenyl</i> | 64.8 | 0 | 100 | 0 | 64.8 | 26-79 | 0 | | | | |
| <i>Surr: 4-Terphenyl-d14</i> | 90.38 | 0 | 100 | 0 | 90.4 | 43-106 | 0 | | | | |
| <i>Surr: Nitrobenzene-d5</i> | 60.74 | 0 | 100 | 0 | 60.7 | 29-80 | 0 | | | | |

| MSD | | Sample ID: 20090803-08A MSD | | | | Units: µg/L | | Analysis Date: 9/15/2020 08:33 PM | | | |
|-------------------------------|--------|------------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|--|
| Client ID: | | Run ID: SVMS8_200915A | | | | SeqNo: 6710328 | | Prep Date: 9/15/2020 | | DF: 1 | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual | |
| Sulfolane | 163.2 | 20 | 200 | 0 | 81.6 | 30-100 | 171.3 | 4.83 | 30 | | |
| <i>Surr: 2-Fluorobiphenyl</i> | 61.8 | 0 | 100 | 0 | 61.8 | 26-79 | 64.8 | 4.74 | 40 | | |
| <i>Surr: 4-Terphenyl-d14</i> | 85.4 | 0 | 100 | 0 | 85.4 | 43-106 | 90.38 | 5.67 | 40 | | |
| <i>Surr: Nitrobenzene-d5</i> | 59.08 | 0 | 100 | 0 | 59.1 | 29-80 | 60.74 | 2.77 | 40 | | |

The following samples were analyzed in this batch:

20090904-01A 20090904-02A

Client: Lambda Energy Resources
 Work Order: 20090904
 Project: Lambda (Hartland 36 Gas Plant)

QC BATCH REPORT

Batch ID: **R298294** Instrument ID **GALLERY** Method: **A4500-SO4 E-11**

| MBLK | | Sample ID: MB-R298294-R298294 | | | | Units: mg/L | | Analysis Date: 9/16/2020 02:59 PM | | | |
|------------|--------|--------------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|--|
| Client ID: | | Run ID: GALLERY_200916A | | | | SeqNo: 6714142 | | Prep Date: | | DF: 1 | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual | |
| Sulfate | ND | 1.0 | | | | | | | | | |

| MS | | Sample ID: 20090850-02AMS | | | | Units: mg/L | | Analysis Date: 9/16/2020 02:59 PM | | | |
|------------|--------|----------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|--|
| Client ID: | | Run ID: GALLERY_200916A | | | | SeqNo: 6714146 | | Prep Date: | | DF: 4 | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual | |
| Sulfate | 227.1 | 4.0 | 50 | 213.1 | 28.1 | 95-118 | 0 | | | SO | |

| MSD | | Sample ID: 20090850-02AMSD | | | | Units: mg/L | | Analysis Date: 9/16/2020 02:59 PM | | | |
|------------|--------|-----------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|--|
| Client ID: | | Run ID: GALLERY_200916A | | | | SeqNo: 6714147 | | Prep Date: | | DF: 4 | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual | |
| Sulfate | 231.4 | 4.0 | 50 | 213.1 | 36.7 | 95-118 | 227.1 | 1.89 | 10 | SO | |

| LCS1 | | Sample ID: LCS1-R298294 | | | | Units: mg/L | | Analysis Date: 9/16/2020 02:59 PM | | | |
|------------|--------|--------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|--|
| Client ID: | | Run ID: GALLERY_200916A | | | | SeqNo: 6714143 | | Prep Date: | | DF: 1 | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual | |
| Sulfate | 10.21 | 1.0 | 10 | 0 | 102 | 90-119 | 0 | | | | |

| LCS2 | | Sample ID: LCS2-R298294 | | | | Units: mg/L | | Analysis Date: 9/16/2020 02:59 PM | | | |
|------------|--------|--------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|--|
| Client ID: | | Run ID: GALLERY_200916A | | | | SeqNo: 6714162 | | Prep Date: | | DF: 1 | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual | |
| Sulfate | 53.72 | 1.0 | 50 | 0 | 107 | 95-118 | 0 | | | | |

The following samples were analyzed in this batch:

| | |
|--------------|--------------|
| 20090904-01B | 20090904-02B |
|--------------|--------------|

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

Client: Lambda Energy Resources
Project: Lambda (Hartland 36 Gas Plant)
WorkOrder: 20090904

**QUALIFIERS,
ACRONYMS, UNITS**

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

| <u>Acronym</u> | <u>Description</u> |
|----------------|-------------------------------------|
| 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 |

| <u>Units Reported</u> | <u>Description</u> |
|-----------------------|----------------------|
| µg/L | Micrograms per Liter |
| mg/L | Milligrams per Liter |

Sample Receipt Checklist

Client Name: LAMBDA-KAL

Date/Time Received: 11-Sep-20 10:30

Work Order: 20090904

Received by: DS

Checklist completed by Diane Shaw 11-Sep-20
eSignature Date

Reviewed by: Nathan Williams 11-Sep-20
eSignature Date

Matrices: Groundwater

Carrier name: UPS

Shipping container/cooler in good condition? Yes No Not Present

Custody seals intact on shipping container/cooler? Yes No Not Present

Custody seals intact on sample bottles? Yes No Not Present

Chain of custody present? Yes No

Chain of custody signed when relinquished and received? Yes No

Chain of custody agrees with sample labels? Yes No

Samples in proper container/bottle? Yes No

Sample containers intact? Yes No

Sufficient sample volume for indicated test? Yes No

All samples received within holding time? Yes No

Container/Temp Blank temperature in compliance? Yes No

Sample(s) received on ice? Yes No

Temperature(s)/Thermometer(s): 3.0/3.0 c IR1

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage: 9/11/2020 10:57:54 AM

Water - VOA vials have zero headspace? Yes No No VOA vials submitted

Water - pH acceptable upon receipt? Yes No N/A

pH adjusted? Yes No N/A

pH adjusted by:

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:



Environmental

Cincinnati, OH
+1 513 733 5336

Everett, WA
+1 425 356 2600

Fort Collins, CO
+1 970 490 1511

Holland, MI
+1 616 399 6070

Chain of Custody Form

Page 1 of 1

COC ID: 37034

Houston, TX
+1 281 530 5656

Middletown, PA
+1 717 944 5541

Spring City, PA
+1 610 948 4903

Salt Lake City, UT
+1 801 266 7700

South Charleston, WV
+1 304 356 3168

York, PA
+1 717 505 5280

ALS Project Manager: _____ ALS Work Order #: 20090904

| Customer Information | | Project Information | | Parameter/Method Request for Analysis | | | | | | | | | | | | |
|----------------------|-------------------------|---------------------|---------------------------------------|---------------------------------------|-------------------------|--|--|--|--|--|--|--|--|--|--|--|
| Purchase Order | | Project Name | HAYLAND 36 GAS PLANT | A | Sulfate (1) amber liter | | | | | | | | | | | |
| Work Order | | Project Number | | B | Sulfonate (1) 125 poly | | | | | | | | | | | |
| Company Name | ECT, INC. | Bill To Company | LAMBDA ENERGY | C | | | | | | | | | | | | |
| Send Report To | Jenmy Lewandowski | Invoice Attn | NICK SUMMELLAND | D | | | | | | | | | | | | |
| Address | 3399 Veterans Dr. | Address | 1510 Thomas Rd | E | | | | | | | | | | | | |
| | | | | F | | | | | | | | | | | | |
| City/State/Zip | Traverse City, MI 49684 | City/State/Zip | Kalkaska, MI 49646 | G | | | | | | | | | | | | |
| Phone | 231-946-8200 | Phone | 231-258-6411 | H | | | | | | | | | | | | |
| Fax | 231-946-8208 | Fax | | I | | | | | | | | | | | | |
| e-Mail Address | jlewandowski@ectinc.com | e-Mail Address | michigan.invoices@lambdaenergyllc.com | | | | | | | | | | | | | |

| No. | Sample Description | Date | Time | Matrix | Pres. | # Bottles | A | B | C | D | E | F | G | H | I | J | Hold |
|-----|--------------------|-----------|-------|--------|-------|-----------|---|---|---|---|---|---|---|---|---|---|------|
| 1 | MW-143 | 9/10/2020 | 9:40 | GW | | 2 | X | X | | | | | | | | | |
| 2 | MW-14D | 9/10/2020 | 10:25 | GW | | 2 | X | X | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | |
|--|--------------------|-------------------------------|---------------------------|--|--|---|---|-------------------|--|--|--|
| Sampler(s) Please Print & Sign | | Shipment Method UPS Ground | | Turnaround Time in Business Days (BD) <input type="checkbox"/> 10 BD <input checked="" type="checkbox"/> 5 BD <input type="checkbox"/> 3 BD <input type="checkbox"/> 2 BD <input type="checkbox"/> 1 BD | | | | Results Due Date: | | | |
| Relinquished by: Joey Kusch ECT | Date: 9/10/2020 | Time: 11:00 | Received by: UPS | Notes: | | | | | | | |
| Relinquished by: VPS | Date: 9/11/20 | Time: 1030 | Received by (Laboratory): | Cooler ID | Cooler Temp | QC Package: (Check One Box Below) | | | | | |
| Logged by (Laboratory): DES | Date: 9/11/20 | Time: 1100 | Checked by (Laboratory): | IR1 | 30C | <input checked="" type="checkbox"/> Level II Std QC | <input type="checkbox"/> TRRP Checklist | | | | |
| Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4 C 9-5035 | | | | <input type="checkbox"/> Level III Std QC/Raw Date | <input type="checkbox"/> TRRP Level IV | | | | | | |
| | | | | <input type="checkbox"/> Level IV SW846/CLP | | | | | | | |
| | | | | <input type="checkbox"/> Other | | | | | | | |

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
 2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
 3. The Chain of Custody is a legal document. All information must be completed accurately.

50 LBS

1 OF 1

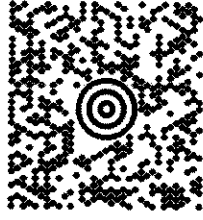
FROM:

LISA ZUBER
(517) 272-9200
ECT, INC.
3125 SOVEREIGN DRIVE
LANSING MI 48911-4240

SHIP TO:

SAMPLE RECEIVING
(616) 399-6070
ALS ENVIRONMENTAL
3352 128TH AVENUE
HOLLAND MI 49424-9263

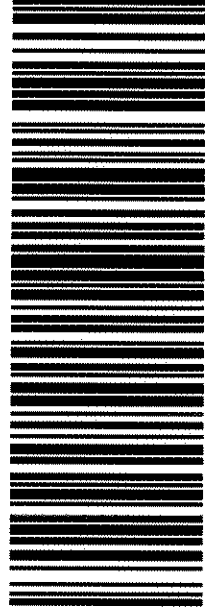
MI 495 9-04



UPS NEXT DAY AIR

1

TRACKING #: 1Z V54 9W4 01 5087 7623



REF 1:130685, 2000

BILLING: 3RD PARTY

WS 22.0.17 KONICA MINOLTA 31.0A 072020

Fold here and place in label pouch

Custody Seal

Rel AK
Rcvd ED

APPENDIX D

LOW-FLOW SAMPLING FIELD FORMS

CLIENT: **Lambda Energy** Monitoring Location: Hartland #36
 LOCATION: **13390 Lone Tree Road** Sample ID: MW- 2
Hartland Township, Michigan Well Type: 2" PVC
 PROJECT: **130685.2000**

INSPECTION

| | |
|---|--|
| Label on well? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> REMEDIED | Is cement pad in good repair? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> REMEDIED |
| Is reference mark visible? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> REMEDIED | Is protective casing locked and in good repair? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> REMEDIED |
| Standing water present? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> REMEDIED | Is inner cap in place and properly sealing well? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> REMEDIED |
| Indication of surface runoff in well? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> REMEDIED | Is well casing in visibly good repair? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> REMEDIED |

Repair Notes:

STATIC WATER LEVEL

Date: 9/9/20 Time: 9:52

Top of Casing Elevation: _____
 Depth to Water: 23.65
 Elevation of Water: _____

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

WELL PURGING

Purge Method: PERISTALTIC BLADDER OTHER _____ Date: 9/9/20 Start Time: 9:54

Measured Well Depth: 33.00 Screen Length: 5' Depth to Screen Midpoint: _____

| Time | Water Level (feet) | Drawdown (feet) | Pumping Rate (ml/mjn) | Temp (°C) | Spec Cond. (umho/cm) | Diss Oxy (mg/l) | pH (S.U.) | ORP (mV) | Turbidity (NTU) |
|-------|--------------------|-----------------|-----------------------|-----------|----------------------|-----------------|-----------|----------|-----------------|
| 10:10 | 23.72 | 0.07 | 250 | 11.6 | 5390 | 7.82 | 7.51 | 348.7 | 0.32 |
| 10:15 | 23.72 | 0.07 | 250 | 11.6 | 539 | 7.87 | 7.39 | 341.9 | 0.02 |
| 10:20 | 23.72 | 0.07 | 250 | 11.9 | 538 | 8.50 | 7.38 | 340.3 | 0.20 |
| Final | 23.72 | | | | | | | | |

Total Volume Purged (gal): 2 gal Stabilization Criteria: +/- 3% +/- 3% +/- 10% (if > 0.5 mg/l) +/- 0.1 Units +/- 10 mV +/- 10% (if > 5 NTU)

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

FIELD ANALYSIS

Time: 10:20
 Temperature: 11.9 deg. C
 Specific Conductance: 538 umhos/cm
 Dissolved Oxygen: 8.50 mg/L
 pH: 7.38 S.U.
 ORP: 340.3 mV
 Turbidity: 0.20 NTU

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

SAMPLE COLLECTION

Time: 10:25 Sample Duplicate?: No
 Appearance of Sample: Clear, no color Sample Method: Low Flow

| NO./BOTTLES: | SIZE: | TYPE: | FILTERED: | PRESERVATIVE: | PARAMETER: |
|--------------|---------|---------------|-----------|--|------------|
| 1 | 1000 ml | glass plastic | yes no | None HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | Sulfolane |
| 1 | 125 ml | glass plastic | yes no | None HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | Sulfate |
| | | glass plastic | yes no | None HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |

SAMPLING PERSONNEL

Name (SIGNATURE): _____ Chain of Custody No. _____
 Name (SIGNATURE): _____

CLIENT: **Lambda Energy** Monitoring Location: _____ Hartland #36
 LOCATION: **13390 Lone Tree Road** Sample ID: _____ MW- 15D
Hartland Township, Michigan Well Type: _____ 2" PVC
 PROJECT: **130685.2000**

INSPECTION

| | |
|---|--|
| Label on well? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> REMEDIED | Is cement pad in good repair? <input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> REMEDIED <i>A/A</i> |
| Is reference mark visible? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> REMEDIED | Is protective casing locked and in good repair? <input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> REMEDIED |
| Standing water present? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> REMEDIED | Is inner cap in place and properly sealing well? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> REMEDIED |
| Indication of surface runoff in well? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> REMEDIED | Is well casing in visibly good repair? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> REMEDIED |

Repair Notes: _____

STATIC WATER LEVEL

Date: 9/9/2020 Time: 10:03

Top of Casing Elevation: _____
 Depth to Water: 19.25'
 Elevation of Water: _____

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

WELL PURGING

Purge Method: PERISTALTIC BLADDER OTHER _____ Date: 9/9/2020 Start Time: 10:05

Measured Well Depth: 46.0' (soft) Screen Length: _____ Depth to Screen Midpoint: _____

| Time | Water Level (feet) | Drawdown (feet) | Pumping Rate (ml/min) | Temp (°C) | Spec Cond. (umho/cm) | Diss Oxy (mg/l) | pH (S.U.) | ORP (mV) | Turbidity (NTU) |
|----------------|--------------------|-----------------|-----------------------|--------------|----------------------|-----------------|-------------|--------------|-----------------|
| <i>initial</i> | <u>19.25'</u> | | | | | | | | |
| <u>10:10</u> | <u>19.31</u> | <u>0.06'</u> | <u>200</u> | <u>10.12</u> | <u>503</u> | <u>12.73</u> | <u>5.00</u> | <u>144.1</u> | <u>2.02</u> |
| <u>10:15</u> | <u>19.31</u> | <u>0.06'</u> | <u>200</u> | <u>10.02</u> | <u>502</u> | <u>12.40</u> | <u>5.03</u> | <u>144.7</u> | <u>1.74</u> |
| <u>10:20</u> | <u>19.31</u> | <u>0.06'</u> | <u>200</u> | <u>9.85</u> | <u>495</u> | <u>9.70</u> | <u>5.32</u> | <u>129.7</u> | <u>1.86</u> |
| <u>10:25</u> | <u>19.31</u> | <u>0.06'</u> | <u>200</u> | <u>9.84</u> | <u>494</u> | <u>9.22</u> | <u>5.47</u> | <u>123.0</u> | <u>1.99</u> |
| <u>10:30</u> | <u>19.32</u> | <u>0.07'</u> | <u>200</u> | <u>9.82</u> | <u>493</u> | <u>8.54</u> | <u>5.72</u> | <u>110.8</u> | <u>2.49</u> |
| <u>10:35</u> | <u>19.32</u> | <u>0.07'</u> | <u>200</u> | <u>9.83</u> | <u>492</u> | <u>8.34</u> | <u>5.88</u> | <u>107.4</u> | <u>1.89</u> |
| <u>10:40</u> | <u>19.32</u> | <u>0.07'</u> | <u>200</u> | <u>9.86</u> | <u>494</u> | <u>8.40</u> | <u>5.95</u> | <u>100.0</u> | <u>1.72</u> |

Total Volume Purged (gal): 1.8 Stabilization Criteria: +/- 3% +/- 3% +/- 10% +/- 0.1 Units +/- 10 mV +/- 10%
clean, no obs. particulates @ purge start (if > 0.5 mg/l) (if > 5 NTU)
 Stabilization Criteria Reference Doc. USEPA EQASOP-GW 001 Rev #3, January 19, 2010

FIELD ANALYSIS

Time: 1046

| | | | |
|---|-------------------------|----------|--------------|
| Temperature: <u>9.85</u> deg. C | CALIBRATION CHECK | | Mark if |
| Specific Conductance: <u>493</u> umhos/cm | Standard (conc.) | Reading | Recalibrated |
| Dissolved Oxygen: <u>8.34</u> mg/L | Specific Cond.: _____ | umhos/cm | _____ |
| pH: <u>5.98</u> S.U. | Dissolved Oxygen: _____ | mg/L | _____ |
| ORP: <u>99.1</u> mV | pH: _____ | S.U. | _____ |
| Turbidity: <u>1.59</u> NTU | Eh: _____ | mV | _____ |
| | Turbidity: _____ | NTU | _____ |

SAMPLE COLLECTION

Appearance of Sample: clear Time: 1045 Sample Duplicate?: No
 Sample Method: LOW FLOW

| NO./BOTTLES: | SIZE: | TYPE: | FILTERED: | PRESERVATIVE: | PARAMETER: |
|--------------|----------------|--|---|---|------------------|
| <u>1</u> | <u>1000</u> ml | <input checked="" type="checkbox"/> glass <input type="checkbox"/> plastic | yes <input type="checkbox"/> no <input checked="" type="checkbox"/> | <u>None</u> , HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | <u>Sulfolane</u> |
| <u>1</u> | <u>125</u> ml | <input checked="" type="checkbox"/> glass <input type="checkbox"/> plastic | yes <input type="checkbox"/> no <input checked="" type="checkbox"/> | <u>None</u> , HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | <u>Sulfate</u> |
| _____ | _____ ml | _____ glass _____ plastic | yes _____ no _____ | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | _____ glass _____ plastic | yes _____ no _____ | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | _____ glass _____ plastic | yes _____ no _____ | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | _____ glass _____ plastic | yes _____ no _____ | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | _____ glass _____ plastic | yes _____ no _____ | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | _____ glass _____ plastic | yes _____ no _____ | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | _____ glass _____ plastic | yes _____ no _____ | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | _____ glass _____ plastic | yes _____ no _____ | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | _____ glass _____ plastic | yes _____ no _____ | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |

SAMPLING PERSONNEL

Name (SIGNATURE): Jessica... Chain of Custody No. _____
 Name (SIGNATURE): _____

** poly tubing jostled*

CLIENT: **Lambda Energy**
 LOCATION: **13390 Lone Tree Road**
Hartland Township, Michigan
 PROJECT: **130685.2000**

Monitoring Location: _____ Hartland #36
 Sample ID: _____ MW- **7d**
 Well Type: _____ 2" PVC

INSPECTION

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

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

STATIC WATER LEVEL

Top of Casing Elevation: _____
 Depth to Water: 24.14
 Elevation of Water: _____

Date: 9/20 Time: 10:32

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

WELL PURGING

Purge Method: PERISTALTIC BLADDER OTHER _____

Date: 9/20 Start Time: 10:36

Measured Well Depth: 48.50 Screen Length: _____ Depth to Screen Midpoint: _____

| Time | Water Level (feet) | Drawdown (feet) | Pumping Rate (ml/min) | Temp (°C) | Spec Cond. (umho/cm) | Diss Oxy (mg/l) | pH (S.U.) | ORP (mV) | Turbidity (NTU) |
|-------|--------------------|-----------------|-----------------------|-----------|----------------------|-----------------|-----------|----------|-----------------|
| 10:50 | 24.17 | 0.03 | 300 | 11.1 | 445 | 13.17 | 7.41 | 350.0 | 5.42 |
| 10:55 | 24.17 | 0.03 | 300 | 11.1 | 460 | 12.89 | 7.39 | 352.9 | 4.97 |
| 11:00 | 24.17 | 0.03 | 300 | 11.0 | 463 | 12.56 | 7.45 | 351.4 | 4.50 |
| Final | 24.17 | | | | | | | | |

Total Volume Purged (gal): 2 gal Stabilization Criteria: +/- 3% +/- 3% +/- 10% (if > 0.5 mg/l) +/- 0.1 Units +/- 10 mV +/- 10% (if > 5 NTU)

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

FIELD ANALYSIS

Time: 11:00
 Temperature: 11.0 deg. C
 Specific Conductance: 463 umhos/cm
 Dissolved Oxygen: 12.56 mg/L
 pH: 7.45 S.U.
 ORP: 357.4 mV
 Turbidity: 4.50 NTU

| CALIBRATION CHECK | | Mark if |
|-------------------------|----------|--------------------------|
| Standard (conc.) | Reading | Recalibrated |
| Specific Cond.: _____ | umhos/cm | <input type="checkbox"/> |
| Dissolved Oxygen: _____ | mg/L | <input type="checkbox"/> |
| pH: _____ | S.U. | <input type="checkbox"/> |
| Eh: _____ | mV | <input type="checkbox"/> |
| Turbidity: _____ | NTU | <input type="checkbox"/> |

SAMPLE COLLECTION

Appearance of Sample: Clear, no odor

Time: 11:05 Sample Duplicate?: NO
 Sample Method: Low Flow

| NO./BOTTLES: | SIZE: | TYPE: | FILTERED: | PRESERVATIVE: | PARAMETER: |
|--------------|---------|---------------|-----------|--|------------|
| 1 | 1000 ml | glass plastic | yes no | None HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | Sulfolane |
| 1 | 125 ml | glass plastic | yes no | None HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | Sulfate |
| | | glass plastic | yes no | None HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |

SAMPLING PERSONNEL

Name (SIGNATURE): _____

Chain of Custody No. _____
 Name (SIGNATURE): _____

CLIENT: **Lambda Energy** Monitoring Location: **Hartland #36**
 LOCATION: **13390 Lone Tree Road** Sample ID: **MW- 205**
Hartland Township, Michigan Well Type: **2" PVC**
 PROJECT: **130685.2000**

INSPECTION

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

STATIC WATER LEVEL

Date: 9/9/2020 Time: 20.96
 Top of Casing Elevation: _____
 Depth to Water: 20.96 Measured with: ELECTRONIC TAPE CHALKED TAPE OTHER
 Elevation of Water: _____ Well depth verified? YES NO

WELL PURGING

Purge Method: PERISTALTIC BLADDER OTHER _____ Date: 9/9/2020 Start Time: 11:15
 Measured Well Depth: 25.19' Screen Length: _____ Depth to Screen Midpoint: _____

| Time | Water Level (feet) | Drawdown (feet) | Pumping Rate (ml/min) | Temp (°C) | Spec Cond. (umho/cm) | Diss Oxy (mg/l) | pH (S.U.) | ORP (mV) | Turbidity (NTU) |
|----------------|--------------------|-----------------|-----------------------|--------------|----------------------|-----------------|-------------|-------------|-----------------|
| <i>initial</i> | <u>20.96</u> | | | | | | | | |
| <u>11:20</u> | <u>21.01</u> | <u>0.05</u> | <u>150</u> | <u>11.33</u> | <u>579</u> | <u>24.08</u> | <u>6.84</u> | <u>68.9</u> | <u>8.78</u> |
| <u>11:25</u> | <u>21.01</u> | <u>0.05</u> | <u>150</u> | <u>11.24</u> | <u>578</u> | <u>15.14</u> | <u>6.70</u> | <u>74.9</u> | <u>8.31</u> |
| <u>11:30</u> | <u>21.03</u> | <u>0.07</u> | <u>150</u> | <u>11.06</u> | <u>569</u> | <u>8.92</u> | <u>6.78</u> | <u>68.6</u> | <u>8.03</u> |
| <u>11:35</u> | <u>21.03</u> | <u>0.07</u> | <u>150</u> | <u>11.05</u> | <u>566</u> | <u>8.55</u> | <u>6.82</u> | <u>66.8</u> | <u>7.56</u> |
| <u>11:40</u> | <u>21.03</u> | <u>0.07</u> | <u>150</u> | <u>11.03</u> | <u>561</u> | <u>8.43</u> | <u>6.95</u> | <u>61.9</u> | <u>6.30</u> |

Total Volume Purged (gal): 21.0 Stabilization Criteria: +/- 3% +/- 3% +/- 10% +/- 0.1 Units +/- 10 mV +/- 10%
Clean, trace obs. particulates @ start (if > 0.5 mg/l) (if > 5 NTU)
 Stabilization Criteria Reference Doc. USEPA EQASOP-GW 001 Rev #3, January 19, 2010

FIELD ANALYSIS

Time: 11:45 CALIBRATION CHECK Mark if Recalibrated
 Temperature: 11.09 deg. C Standard (conc.) Reading
 Specific Conductance: 559 umhos/cm Specific Cond.: _____ umhos/cm
 Dissolved Oxygen: 7.91 mg/L Dissolved Oxygen: _____ mg/L
 pH: 6.99 S.U. pH: _____ S.U.
 ORP: 60.1 mV Eh: _____ mV
 Turbidity: 6.49 NTU Turbidity: _____ NTU

SAMPLE COLLECTION

Time: 11:47 Sample Duplicate?: No
 Appearance of Sample: clean, no obs. particulates Sample Method: Low Flow

| NO./BOTTLES: | SIZE: | TYPE: | FILTERED: | PRESERVATIVE: | PARAMETER: |
|--------------|----------------|--|---|---|------------------|
| <u>1</u> | <u>1000</u> ml | <input checked="" type="checkbox"/> glass <input type="checkbox"/> plastic | yes <input type="checkbox"/> no <input checked="" type="checkbox"/> | <u>None</u> HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | <u>Sulfolane</u> |
| <u>1</u> | <u>125</u> ml | <input checked="" type="checkbox"/> glass <input type="checkbox"/> plastic | yes <input type="checkbox"/> no <input checked="" type="checkbox"/> | <u>None</u> HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | <u>Sulfate</u> |
| _____ | _____ ml | _____ glass _____ plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | _____ glass _____ plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | _____ glass _____ plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | _____ glass _____ plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | _____ glass _____ plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | _____ glass _____ plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | _____ glass _____ plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | _____ glass _____ plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | _____ glass _____ plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | _____ glass _____ plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |

SAMPLING PERSONNEL

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

CLIENT: **Lambda Energy**
 LOCATION: **13390 Lone Tree Road**
Hartland Township, Michigan
 PROJECT: **130685.2000**

Monitoring Location: _____ **Hartland #36**
 Sample ID: _____ **MW- 195**
 Well Type: _____ **2" PVC**

INSPECTION

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

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

STATIC WATER LEVEL

Top of Casing Elevation: _____
 Depth to Water: 21.67
 Elevation of Water: _____

Date: 9/9/20 Time: 11:17
 Measured with: ELECTRONIC TAPE CHALKED TAPE OTHER
 Well depth verified? YES NO

WELL PURGING

Purge Method: PERISTALTIC BLADDER OTHER _____

Date: 9/9/20 Start Time: 11:19

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

| Time | Water Level (feet) | Drawdown (feet) | Pumping Rate (ml/min) | Temp (°C) | Spec Cond. (umho/cm) | Diss Oxy (mg/l) | pH (S.U.) | ORP (mV) | Turbidity (NTU) |
|-------|--------------------|-----------------|-----------------------|-----------|----------------------|-----------------|-----------|----------|-----------------|
| 11:35 | 21.87 | 0.20 | 250 | 11.6 | 443 | 10.75 | 7.50 | 344.9 | 8.32 |
| 11:40 | 21.87 | 0.20 | 250 | 11.6 | 444 | 10.71 | 7.61 | 341.0 | 4.74 |
| 11:45 | 21.87 | 0.20 | 250 | 11.6 | 445 | 10.59 | 7.60 | 342.3 | 3.93 |
| 11:50 | 21.87 | 0.20 | 250 | 11.7 | 445 | 10.46 | 7.60 | 341.6 | 2.58 |
| Final | 21.47 | | | | | | | | |

Total Volume Purged (gal): 1.75 gal Stabilization Criteria: +/- 3% +/- 3% +/- 10% (if > 0.5 mg/l) +/- 0.1 Units +/- 10 mV +/- 10% (if > 5 NTU)

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

FIELD ANALYSIS

Time: 11:50
 Temperature: 11.9 deg. C
 Specific Conductance: 445 umhos/cm
 Dissolved Oxygen: 10.46 mg/L
 pH: 7.60 S.U.
 ORP: 341.6 mV
 Turbidity: 2.58 NTU

| CALIBRATION CHECK | | Mark if Recalibrated |
|-------------------|----------|-------------------------------------|
| Standard (conc.) | Reading | |
| Specific Cond.: | umhos/cm | <input checked="" type="checkbox"/> |
| Dissolved Oxygen: | mg/L | <input checked="" type="checkbox"/> |
| pH: | S.U. | <input checked="" type="checkbox"/> |
| Oh: | mV | <input checked="" type="checkbox"/> |
| Turbidity: | NTU | <input checked="" type="checkbox"/> |

SAMPLE COLLECTION

Appearance of Sample: Clear, no odor

Time: 11:55 Sample Duplicate?: NO
 Sample Method: Low Flow

| NO./BOTTLES: | SIZE: | TYPE: | FILTERED: | PRESERVATIVE: | PARAMETER: |
|--------------|---------|---------------|-----------|---|------------|
| 1 | 1000 ml | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | Sulfolane |
| 1 | 125 ml | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | Sulfate |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |

SAMPLING PERSONNEL

Name (SIGNATURE): _____ Chain of Custody No. _____
 Name (SIGNATURE): _____

CLIENT: **Lambda Energy** Monitoring Location: Hartland #36
 LOCATION: **13390 Lone Tree Road** Sample ID: MW-20D + MW-DUPE
Hartland Township, Michigan Well Type: 2" PVC
 PROJECT: **130685.2000**

INSPECTION

Label on well? YES NO REMEDIATED
 Is reference mark visible? YES NO REMEDIATED
 Standing water present? YES NO REMEDIATED
 Indication of surface runoff in well? YES NO REMEDIATED
 Repair Notes: _____
 Is cement pad in good repair? YES NO REMEDIATED N/A
 Is protective casing ~~locked~~ in good repair? YES NO REMEDIATED
 Is inner cap in place and properly sealing well? YES NO REMEDIATED
 Is well casing in visibly good repair? YES NO REMEDIATED

STATIC WATER LEVEL

Date: 9/9/2020 Time: 12:02
 Top of Casing Elevation: _____
 Depth to Water: 20.81 Measured with: ELECTRONIC TAPE CHALKED TAPE OTHER _____
 Elevation of Water: _____ Well depth verified? YES NO

WELL PURGING

Purge Method: PERISTALTIC BLADDER OTHER _____ Date: 9/9/2020 Start Time: 12:05
Recorded
 Measured Well Depth: 35.28' Screen Length: _____ Depth to Screen Midpoint: _____

| Time | Water Level (feet) | Drawdown (feet) | Pumping Rate (ml/min) | Temp (°C) | Spec Cond. (umho/cm) | Diss Oxy (mg/l) | pH (S.U.) | ORP (mV) | Turbidity (NTU) |
|----------------|--------------------|-----------------|-----------------------|--------------|----------------------|-----------------|-------------|-------------|-----------------|
| <i>initial</i> | <u>20.81</u> | | | | | | | | |
| <u>12:10</u> | <u>21.85</u> | <u>1.04</u> | <u>150</u> | <u>10.85</u> | <u>596</u> | <u>3.46</u> | <u>7.10</u> | <u>52.8</u> | <u>NR</u> |
| <u>12:15</u> | <u>21.85</u> | <u>1.04</u> | <u>150</u> | <u>10.82</u> | <u>597</u> | <u>3.29</u> | <u>6.93</u> | <u>59.7</u> | <u>23.1</u> |
| <u>12:20</u> | <u>21.85</u> | <u>1.04</u> | <u>150</u> | <u>10.65</u> | <u>598</u> | <u>2.92</u> | <u>6.83</u> | <u>61.4</u> | <u>22.9</u> |
| <u>12:25</u> | <u>21.85</u> | <u>1.04</u> | <u>150</u> | <u>10.57</u> | <u>600</u> | <u>2.96</u> | <u>6.93</u> | <u>55.0</u> | <u>21.7</u> |

Total Volume Purged (gal): 1.0 Stabilization Criteria: +/- 3% +/- 3% +/- 10% +/- 0.1 Units +/- 10 mV +/- 10%
gray tint / slightly @
purge start
 Stabilization Criteria Reference Doc. USEPA EQASOP-GW 001 Rev #3, January 19, 2010

FIELD ANALYSIS

Time: 12:27
 Temperature: 10.53 deg. C
 Specific Conductance: 601 umhos/cm
 Dissolved Oxygen: 2.79 mg/L
 pH: 6.95 S.U.
 ORP: 53.8 mV
 Turbidity: 21.5 NTU
 CALIBRATION CHECK
 Standard (conc.) Reading Mark if Recalibrated
 Specific Cond.: _____ umhos/cm
 Dissolved Oxygen: _____ mg/L
 pH: _____ S.U.
 Eh: _____ mV
 Turbidity: _____ NTU

SAMPLE COLLECTION

Time: 12:30 Sample Duplicate?: Yes MW-DUPE
 Appearance of Sample: grayish brown, less color and obs. particulates Sample Method: Low Flow

| NO./BOTTLES: | SIZE: | TYPE: | FILTERED: | PRESERVATIVE: | PARAMETER: |
|----------------------|----------------|--|---|---|----------------------------|
| <u>2</u> <u>(JA)</u> | <u>1000</u> ml | <input checked="" type="checkbox"/> glass <input type="checkbox"/> plastic | <input checked="" type="checkbox"/> yes <input type="checkbox"/> no | <u>None</u> HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | <u>Sulfolane + MW-DUPE</u> |
| <u>2</u> <u>(JA)</u> | <u>125</u> ml | <input checked="" type="checkbox"/> glass <input type="checkbox"/> plastic | <input checked="" type="checkbox"/> yes <input type="checkbox"/> no | <u>None</u> HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | <u>Sulfate + MW-DUPE</u> |
| _____ | _____ ml | _____ glass plastic | _____ yes no | _____ None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | _____ glass plastic | _____ yes no | _____ None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | _____ glass plastic | _____ yes no | _____ None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | _____ glass plastic | _____ yes no | _____ None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | _____ glass plastic | _____ yes no | _____ None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | _____ glass plastic | _____ yes no | _____ None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | _____ glass plastic | _____ yes no | _____ None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | _____ glass plastic | _____ yes no | _____ None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | _____ glass plastic | _____ yes no | _____ None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |

SAMPLING PERSONNEL

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

CLIENT: **Lambda Energy**
 LOCATION: **13390 Lone Tree Road**
Hartland Township, Michigan
 PROJECT: **130685.2000**

Monitoring Location: _____ **Hartland #36**
 Sample ID: _____ **MW-17D**
 Well Type: _____ **2" PVC**

INSPECTION

| | |
|---|--|
| Label on well? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> REMEDIED | Is cement pad in good repair? <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> REMEDIED NA |
| Is reference mark visible? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> REMEDIED | Is protective casing locked and in good repair? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> REMEDIED |
| Standing water present? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> REMEDIED | Is inner cap in place and properly sealing well? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> REMEDIED |
| Indication of surface runoff in well? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> REMEDIED | Is well casing in visibly good repair? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> REMEDIED |

Repair Notes: _____

STATIC WATER LEVEL

Date: 9/9/2020 Time: 12:12

Top of Casing Elevation: _____
 Depth to Water: 19.11 Measured with: ELECTRONIC TAPE CHALKED TAPE OTHER
 Elevation of Water: _____ Well depth verified? YES NO

WELL PURGING

Purge Method: PERISTALTIC BLADDER OTHER _____ Date: 9/9/2020 Start Time: 13:15

Measured Well Depth: 40.75 Screen Length: _____ Depth to Screen Midpoint: _____

| Time | Water Level (feet) | Drawdown (feet) | Pumping Rate (ml/min) | Temp (°C) | Spec Cond. (umho/cm) | Diss Oxy (mg/l) | pH (S.U.) | ORP (mV) | Turbidity (NTU) |
|----------------|--------------------|-----------------|-----------------------|--------------|----------------------|-----------------|-------------|-------------|-----------------|
| <i>initial</i> | <u>19.11</u> | — | — | — | — | — | — | — | — |
| <u>12:20</u> | <u>19.31</u> | <u>0.2'</u> | <u>200</u> | <u>10.62</u> | <u>925</u> | <u>3.60</u> | <u>6.91</u> | <u>63.9</u> | <u>NR</u> |
| <u>12:25</u> | <u>19.31</u> | <u>0.2'</u> | <u>200</u> | <u>10.49</u> | <u>947</u> | <u>2.21</u> | <u>6.52</u> | <u>78.7</u> | <u>33.0</u> |
| <u>12:30</u> | <u>19.31</u> | <u>0.2'</u> | <u>200</u> | <u>10.26</u> | <u>972</u> | <u>1.57</u> | <u>6.56</u> | <u>72.0</u> | <u>29.4</u> |
| <u>12:35</u> | <u>19.31</u> | <u>0.2'</u> | <u>200</u> | <u>10.27</u> | <u>976</u> | <u>1.52</u> | <u>6.59</u> | <u>69.7</u> | <u>8.55</u> |
| <u>12:40</u> | <u>19.31</u> | <u>0.2'</u> | <u>200</u> | <u>10.11</u> | <u>982</u> | <u>1.32</u> | <u>6.72</u> | <u>60.1</u> | <u>7.28</u> |
| <u>12:45</u> | <u>19.31</u> | <u>0.2'</u> | <u>200</u> | <u>10.10</u> | <u>983</u> | <u>1.30</u> | <u>6.76</u> | <u>57.9</u> | <u>7.07</u> |
| <u>12:50</u> | <u>19.31</u> | <u>0.2'</u> | <u>200</u> | <u>10.12</u> | <u>984</u> | <u>1.26</u> | <u>6.80</u> | <u>54.9</u> | <u>7.03</u> |

Total Volume Purged (gal): 1.8 Stabilization Criteria: +/- 3% ✓ +/- 3% ✓ +/- 10% ✓ +/- 0.1 Units ✓ +/- 10 mV ✓ +/- 10% ✓
slight gray tint @ purge start; trace bubbles (if > 0.5 mg/l) (if > 5 NTU)
 Stabilization Criteria Reference Doc. USEPA EQASOP-GW 001 Rev #3, January 19, 2010

FIELD ANALYSIS

| | | |
|---|--------------------------------|--------------|
| Time: <u>1353</u> | CALIBRATION CHECK | Mark if |
| Temperature: <u>10.11</u> deg. C | Standard (conc.) | Recalibrated |
| Specific Conductance: <u>984</u> umhos/cm | Specific Cond.: _____ umhos/cm | _____ |
| Dissolved Oxygen: <u>1.25</u> mg/L | Dissolved Oxygen: _____ mg/L | _____ |
| pH: <u>6.81</u> S.U. | pH: _____ S.U. | _____ |
| ORP: <u>54.9</u> mV | Eh: _____ mV | _____ |
| Turbidity: <u>7.20</u> NTU | Turbidity: _____ NTU | _____ |

SAMPLE COLLECTION

Appearance of Sample: clean; slight gray tint Time: 1355 Sample Duplicate?: No
 Sample Method: Low Flow

| NO./BOTTLES: | SIZE: | TYPE: | FILTERED: | PRESERVATIVE: | PARAMETER: |
|--------------|----------|---------------|-----------|---|------------|
| 1 | 1000 ml | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | Sulfolane |
| 1 | 125 ml | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | Sulfate |
| _____ | _____ ml | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |

SAMPLING PERSONNEL

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

changed time from 1200 hrs to 1300 hrs JK

CLIENT: **Lambda Energy**
 LOCATION: **13390 Lone Tree Road**
Hartland Township, Michigan
 PROJECT: **130685.2000**

Monitoring Location: _____ **Hartland #36**
 Sample ID: _____ **MW- 13D**
 Well Type: _____ **2" PVC**

INSPECTION

| | |
|---|--|
| Label on well? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> REMEDIED | Is cement pad in good repair? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> REMEDIED |
| Is reference mark visible? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> REMEDIED | Is protective casing locked and in good repair? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> REMEDIED |
| Standing water present? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> REMEDIED | Is inner cap in place and properly sealing well? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> REMEDIED |
| Indication of surface runoff in well? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> REMEDIED | Is well casing in visibly good repair? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> REMEDIED |

STATIC WATER LEVEL

Date: 9/9/20 Time: 13:34
 Top of Casing Elevation: _____
 Depth to Water: 19.60 Measured with: ELECTRONIC TAPE CHALKED TAPE OTHER
 Elevation of Water: _____ Well depth verified? YES NO

WELL PURGING

Purge Method: PERISTALTIC BLADDER OTHER _____ Date: 9/9/20 Start Time: 13:36
 Measured Well Depth: 32.20 Screen Length: 5' Depth to Screen Midpoint: _____

| Time | Water Level (feet) | Drawdown (feet) | Pumping Rate (ml/min) | Temp (°C) | Spec Cond. (umho/cm) | Diss Oxy (mg/l) | pH (S.U.) | ORP (mV) | Turbidity (NTU) |
|-------|--------------------|-----------------|-----------------------|-----------|----------------------|-----------------|-----------|----------|-----------------|
| 13:50 | 20.00 | 0.20 | 250 | 12.4 | 1290 | 3.52 | 7.33 | 255.2 | 14.0 |
| 13:55 | 20.00 | 0.20 | 250 | 12.4 | 1290 | 3.36 | 7.34 | 261.6 | 9.93 |
| 14:00 | 20.00 | 0.20 | 250 | 12.2 | 1300 | 3.41 | 7.32 | 266.0 | 5.96 |
| 14:05 | 20.01 | 0.21 | 250 | 12.4 | 1300 | 3.25 | 7.31 | 266.8 | 2.77 |
| 14:10 | 20.01 | 0.21 | 250 | 12.3 | 1300 | 3.10 | 7.30 | 264.3 | 1.01 |
| 14:15 | 20.02 | 0.22 | 250 | 12.7 | 1300 | 2.92 | 7.30 | 257.8 | 0.02 |
| Final | 20.03 | | | | | | | | |

Total Volume Purged (gal): 2.5 gal Stabilization Criteria: +/- 3% +/- 3% +/- 10% +/- 0.1 Units +/- 10 mV +/- 10%
(if > 0.5 mg/l) (if > 5 NTU)
 Stabilization Criteria Reference Doc. USEPA EQASOP-GW 001 Rev #3, January 19, 2010

FIELD ANALYSIS

Time: 14:15
 Temperature: 12.3 deg. C
 Specific Conductance: 1300 umhos/cm
 Dissolved Oxygen: 2.92 mg/L
 pH: 7.30 S.U.
 ORP: 266.8 257.8 mV
 Turbidity: 0.02 NTU

| CALIBRATION CHECK | | Mark if Recalibrated |
|-------------------|----------|-------------------------------------|
| Standard (conc.) | Reading | |
| Specific Cond.: | umhos/cm | <input checked="" type="checkbox"/> |
| Dissolved Oxygen: | mg/L | <input checked="" type="checkbox"/> |
| pH: | S.U. | <input checked="" type="checkbox"/> |
| Oh: | mV | <input checked="" type="checkbox"/> |
| Turbidity: | NTU | <input checked="" type="checkbox"/> |

SAMPLE COLLECTION

Time: 14:20 Sample Duplicate?: NO
 Appearance of Sample: Clear, no odor Sample Method: Low Flow

| NO./BOTTLES: | SIZE: | TYPE: | FILTERED: | PRESERVATIVE: | PARAMETER: |
|--------------|---------|---------------|-----------|---|------------|
| 1 | 1000 ml | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | Sulfolane |
| 1 | 125 ml | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | Sulfate |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |

SAMPLING PERSONNEL

Name (SIGNATURE): _____ Chain of Custody No. _____
 Name (SIGNATURE): _____

CLIENT: **Lambda Energy**
 LOCATION: **13390 Lone Tree Road**
Hartland Township, Michigan
 PROJECT: **130685.2000**

Monitoring Location: Hartland #36
 Sample ID: MW-175
 Well Type: 2" PVC

INSPECTION

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

Is cement pad in good repair? YES NO REMEDIED N/A
 Is protective casing ~~locked~~ in good repair? YES NO REMEDIED
 Is inner cap in place and properly sealing well? YES NO REMEDIED
 Is well casing in visibly good repair? YES NO REMEDIED

STATIC WATER LEVEL

Date: 9/9/2020 Time: 1402
 Top of Casing Elevation: _____
 Depth to Water: 18.26 Measured with: ELECTRONIC TAPE CHALKED TAPE OTHER
 Elevation of Water: _____ Well depth verified? YES NO

WELL PURGING

Purge Method: PERISTALTIC BLADDER OTHER _____ Date: 9/9/2020 Start Time: 1405
 Measured Well Depth: 27.1 Screen Length: _____ Depth to Screen Midpoint: _____

| Time | Water Level (feet) | Drawdown (feet) | Pumping Rate (ml/min) | Temp (°C) | Spec Cond. (umho/cm) | Diss Oxy (mg/l) | pH (S.U.) | ORP (mV) | Turbidity (NTU) |
|----------------|--------------------|-----------------|-----------------------|--------------|----------------------|-----------------|-------------|-------------|-----------------|
| <i>initial</i> | <u>18.26</u> | | | | | | | | |
| <u>1410</u> | <u>18.32</u> | <u>0.06</u> | <u>200</u> | <u>11.18</u> | <u>747</u> | <u>2.01</u> | <u>7.30</u> | <u>27.1</u> | <u>2.16</u> |
| <u>1415</u> | <u>18.32</u> | <u>0.06</u> | <u>250</u> | <u>11.05</u> | <u>746</u> | <u>1.78</u> | <u>6.97</u> | <u>35.5</u> | <u>1.25</u> |
| <u>1420</u> | <u>18.32</u> | <u>0.06</u> | <u>250</u> | <u>10.83</u> | <u>743</u> | <u>1.03</u> | <u>6.78</u> | <u>49.0</u> | <u>0.93</u> |
| <u>1425</u> | <u>18.32</u> | <u>0.06</u> | <u>250</u> | <u>10.83</u> | <u>739</u> | <u>0.97</u> | <u>6.80</u> | <u>45.5</u> | <u>0.86</u> |
| <u>1430</u> | <u>18.33</u> | <u>0.07</u> | <u>250</u> | <u>10.82</u> | <u>740</u> | <u>1.00</u> | <u>6.83</u> | <u>44.0</u> | <u>0.60</u> |

Total Volume Purged (gal): 21.6 Stabilization Criteria: +/- 3% +/- 3% +/- 10% +/- 0.1 Units +/- 10 mV +/- 10%
Clean @ purge start (if > 0.5 mg/l) (if > 5 NTU)
 Stabilization Criteria Reference Doc. USEPA EQASOP-GW 001 Rev #3, January 19, 2010

FIELD ANALYSIS

Time: 1436 CALIBRATION CHECK Mark if Recalibrated
 Temperature: 10.83 deg. C Standard (conc.) Reading
 Specific Conductance: 740 umhos/cm Specific Cond.: _____ umhos/cm
 Dissolved Oxygen: 1.09 mg/L Dissolved Oxygen: _____ mg/L
 pH: 6.86 S.U. pH: _____ S.U.
 ORP: 42.4 mV Eh: _____ mV
 Turbidity: 0.44 NTU Turbidity: _____ NTU

SAMPLE COLLECTION

Appearance of Sample: clear Time: 1435 Sample Duplicate?: No
 Sample Method: low flow

| NO./BOTTLES: | SIZE: | TYPE: | FILTERED: | PRESERVATIVE: | PARAMETER: |
|--------------|----------------|-----------------------------|---|---|------------------|
| <u>1</u> | <u>1000</u> ml | <u>glass</u> <u>plastic</u> | yes <input type="checkbox"/> no <input checked="" type="checkbox"/> | <u>None</u> , HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | <u>Sulfolane</u> |
| <u>1</u> | <u>125</u> ml | <u>glass</u> <u>plastic</u> | yes <input type="checkbox"/> no <input checked="" type="checkbox"/> | <u>None</u> , HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | <u>Sulfate</u> |
| _____ | _____ ml | _____ glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | _____ glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | _____ glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | _____ glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | _____ glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | _____ glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | _____ glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | _____ glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |
| _____ | _____ ml | _____ glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | _____ |

SAMPLING PERSONNEL

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

CLIENT: **Lambda Energy**
 LOCATION: **13390 Lone Tree Road**
Hartland Township, Michigan
 PROJECT: **130685.2000**

Monitoring Location: _____ **Hartland #36**
 Sample ID: _____ **MW- 133**
 Well Type: _____ **2" PVC**

INSPECTION

| | |
|---|--|
| Label on well? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> REMEDIED | Is cement pad in good repair? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> REMEDIED |
| Is reference mark visible? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> REMEDIED | Is protective casing locked and in good repair? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> REMEDIED |
| Standing water present? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> REMEDIED | Is inner cap in place and properly sealing well? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> REMEDIED |
| Indication of surface runoff in well? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> REMEDIED | Is well casing in visibly good repair? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> REMEDIED |

Repair Notes: _____

STATIC WATER LEVEL

Date: 9/9/20 Time: 14:30
 Top of Casing Elevation: _____
 Depth to Water: 20.45 Measured with: ELECTRONIC TAPE CHALKED TAPE OTHER
 Elevation of Water: _____ Well depth verified? YES NO

WELL PURGING

Purge Method: PERISTALTIC BLADDER OTHER _____ Date: 9/9/20 Start Time: 14:32
 Measured Well Depth: 30.30 Screen Length: _____ Depth to Screen Midpoint: _____

| Time | Water Level (feet) | Drawdown (feet) | Pumping Rate (ml/min) | Temp (°C) | Spec Cond. (umhos/cm) | Diss Oxy (mg/l) | pH (S.U.) | ORP (mV) | Turbidity (NTU) |
|-------|--------------------|-----------------|-----------------------|-----------|-----------------------|-----------------|-----------|----------|-----------------|
| 14:50 | 20.56 | 0.11 | 250 | 12.9 | 830 | 3.51 | 7.36 | 302.2 | 0.50 |
| 14:55 | 20.56 | 0.11 | 250 | 12.6 | 830 | 3.57 | 7.36 | 304.3 | 0.36 |
| 15:00 | 20.52 | 0.12 | 250 | 12.9 | 830 | 3.70 | 7.37 | 306.0 | 0.02 |
| Final | 20.56 | | | | | | | | |

Total Volume Purged (gal): 2 gal Stabilization Criteria: +/- 3% +/- 3% +/- 10% (if > 0.5 mg/l) +/- 0.1 Units +/- 10 mV +/- 10% (if > 5 NTU)

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

FIELD ANALYSIS

Time: 15:00
 Temperature: 12.9 deg. C
 Specific Conductance: 830 umhos/cm
 Dissolved Oxygen: 3.70 mg/L
 pH: 7.37 S.U.
 ORP: 306.0 mV
 Turbidity: 0.02 NTU

| CALIBRATION CHECK | | Mark if Recalibrated |
|-------------------|----------|--------------------------|
| Standard (conc.) | Reading | |
| Specific Cond.: | umhos/cm | <input type="checkbox"/> |
| Dissolved Oxygen: | mg/L | <input type="checkbox"/> |
| pH: | S.U. | <input type="checkbox"/> |
| Oh: | mV | <input type="checkbox"/> |
| Turbidity: | NTU | <input type="checkbox"/> |

SAMPLE COLLECTION

Appearance of Sample: Clear, no odor Time: 15:05 Sample Duplicate?: NO
 Sample Method: Low Flow

| NO./BOTTLES: | SIZE: | TYPE: | FILTERED: | PRESERVATIVE: | PARAMETER: |
|--------------|---------|---------------|-----------|---|------------|
| 1 | 1000 ml | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | Sulfolane |
| 1 | 125 ml | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | Sulfate |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |

SAMPLING PERSONNEL

Name (SIGNATURE): _____ Chain of Custody No. _____
 Name (SIGNATURE): _____

CLIENT: **Lambda Energy** Monitoring Location: Hartland #36
 LOCATION: **13390 Lone Tree Road** Sample ID: MW- 145
Hartland Township, Michigan Well Type: 2" PVC
 PROJECT: **130685.2000**

INSPECTION

| | |
|--|---|
| Label on well? <input checked="" type="radio"/> YES <input type="radio"/> NO <input type="radio"/> REMEDIED | Is cement pad in good repair? <input checked="" type="radio"/> YES <input type="radio"/> NO <input type="radio"/> REMEDIED |
| Is reference mark visible? <input checked="" type="radio"/> YES <input type="radio"/> NO <input type="radio"/> REMEDIED | Is protective casing locked and in good repair? <input checked="" type="radio"/> YES <input type="radio"/> NO <input type="radio"/> REMEDIED |
| Standing water present? <input checked="" type="radio"/> YES <input type="radio"/> NO <input type="radio"/> REMEDIED | Is inner cap in place and properly sealing well? <input checked="" type="radio"/> YES <input type="radio"/> NO <input type="radio"/> REMEDIED |
| Indication of surface runoff in well? <input checked="" type="radio"/> YES <input type="radio"/> NO <input type="radio"/> REMEDIED | Is well casing in visibly good repair? <input checked="" type="radio"/> YES <input type="radio"/> NO <input type="radio"/> REMEDIED |

Repair Notes:

STATIC WATER LEVEL

Date: 9/10/20 Time: 9:05

Top of Casing Elevation: _____
 Depth to Water: 19.55
 Elevation of Water: _____

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

WELL PURGING

Purge Method: PERISTALTIC BLADDER OTHER _____ Date: 9/10/20 Start Time: 9:08

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

| Time | Water Level (feet) | Drawdown (feet) | Pumping Rate (ml/min) | Temp (°C) | Spec Cond. (umho/cm) | Diss Oxy (mg/l) | pH (S.U.) | ORP (mV) | Turbidity (NTU) |
|-------|--------------------|-----------------|-----------------------|-----------|----------------------|-----------------|-----------|----------|-----------------|
| 9:25 | 19.64 | 0.09 | 250 | 10.50 | 980 | 21.90 | 6.39 | 66.5 | 1.03 |
| 9:30 | 19.64 | 0.09 | 250 | 10.48 | 983 | 19.56 | 6.46 | 61.1 | 0.93 |
| 9:35 | 19.64 | 0.09 | 250 | 10.51 | 984 | 17.85 | 6.49 | 56.3 | 1.31 |
| Final | 19.64 | | | | | | | | |

Total Volume Purged (gal): 2.5 gal Stabilization Criteria: +/- 3% +/- 3% +/- 10% +/- 0.1 Units +/- 10 mV +/- 10%
 (if > 0.5 mg/l) (if > 5 NTU)

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

FIELD ANALYSIS

Time: 9:35

Temperature: 10.51 deg. C
 Specific Conductance: 984 umhos/cm
 Dissolved Oxygen: 17.85 mg/L
 pH: 6.49 S.U.
 ORP: 56.3 mV
 Turbidity: 1.31 NTU

| CALIBRATION CHECK | | Mark if Recalibrated |
|-------------------|----------|-------------------------------------|
| Standard (conc.) | Reading | |
| Specific Cond.: | umhos/cm | <input checked="" type="checkbox"/> |
| Dissolved Oxygen: | mg/L | <input checked="" type="checkbox"/> |
| pH: | S.U. | <input checked="" type="checkbox"/> |
| Eh: | mV | <input checked="" type="checkbox"/> |
| Turbidity: | NTU | <input checked="" type="checkbox"/> |

SAMPLE COLLECTION

Time: 9:40 Sample Duplicate?: No
 Appearance of Sample: Clear, no odor Sample Method: Low Flow

| NO./BOTTLES: | SIZE: | TYPE: | FILTERED: | PRESERVATIVE: | PARAMETER: |
|--------------|---------|---------------|-----------|---|------------|
| 1 | 1000 ml | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | Sulfolane |
| 1 | 125 ml | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | Sulfate |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |

SAMPLING PERSONNEL

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

CLIENT: **Lambda Energy** Monitoring Location: Hartland #36
 LOCATION: **13390 Lone Tree Road** Sample ID: MW-140
Hartland Township, Michigan Well Type: 2" PVC
 PROJECT: **130685.2000**

INSPECTION

| | |
|--|---|
| Label on well? <input checked="" type="radio"/> YES <input type="radio"/> NO <input type="radio"/> REMEDIED | Is cement pad in good repair? <input checked="" type="radio"/> YES <input type="radio"/> NO <input type="radio"/> REMEDIED |
| Is reference mark visible? <input checked="" type="radio"/> YES <input type="radio"/> NO <input type="radio"/> REMEDIED | Is protective casing locked and in good repair? <input checked="" type="radio"/> YES <input type="radio"/> NO <input type="radio"/> REMEDIED |
| Standing water present? <input checked="" type="radio"/> YES <input type="radio"/> NO <input type="radio"/> REMEDIED | Is inner cap in place and properly sealing well? <input checked="" type="radio"/> YES <input type="radio"/> NO <input type="radio"/> REMEDIED |
| Indication of surface runoff in well? <input checked="" type="radio"/> YES <input type="radio"/> NO <input type="radio"/> REMEDIED | Is well casing in visibly good repair? <input checked="" type="radio"/> YES <input type="radio"/> NO <input type="radio"/> REMEDIED |

Repair Notes: _____

STATIC WATER LEVEL

Date: 9/10/20 Time: 9:52

Top of Casing Elevation: _____
 Depth to Water: 19.44
 Elevation of Water: _____

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

WELL PURGING

Purge Method: PERISTALTIC BLADDER OTHER _____ Date: 9/10/20 Start Time: 9:54

Measured Well Depth: 45.10 Screen Length: _____ Depth to Screen Midpoint: _____

| Time | Water Level (feet) | Drawdown (feet) | Pumping Rate (ml/min) | Temp (°C) | Spec Cond. (umho/cm) | Diss Oxy (mg/l) | pH (S.U.) | ORP (mV) | Turbidity (NTU) |
|-------|--------------------|-----------------|-----------------------|-----------|----------------------|-----------------|-----------|----------|-----------------|
| 10:10 | 19.44 | 0.04 | 300 | 9.18 | 884 | 11.34 | 6.60 | 51.3 | 2.24 |
| 10:15 | 19.46 | 0.04 | 300 | 9.19 | 884 | 11.12 | 6.64 | 49.0 | 1.98 |
| 10:20 | 19.48 | 0.04 | 300 | 9.30 | 882 | 10.51 | 6.68 | 45.7 | 2.10 |
| Final | 19.49 | | | | | | | | |

Total Volume Purged (gal): 2.5 gal Stabilization Criteria: +/- 3% +/- 3% +/- 10% (if > 0.5 mg/l) +/- 0.1 Units +/- 10 mV +/- 10% (if > 5 NTU)

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

FIELD ANALYSIS

Time: 10:20
 Temperature: 9.30 deg. C
 Specific Conductance: 882 umhos/cm
 Dissolved Oxygen: 10.51 mg/L
 pH: 6.68 S.U.
 ORP: 45.7 mV
 Turbidity: 2.10 NTU

| CALIBRATION CHECK | | Mark if Recalibrated |
|-------------------------|----------|--------------------------|
| Standard (conc.) | Reading | |
| Specific Cond.: _____ | umhos/cm | <input type="checkbox"/> |
| Dissolved Oxygen: _____ | mg/L | |
| pH: _____ | S.U. | |
| Eh: _____ | mV | |
| Turbidity: _____ | NTU | |

SAMPLE COLLECTION Time: 10:25 Sample Duplicate?: NO
 Appearance of Sample: Clear, no odor Sample Method: Low Flow

| NO./BOTTLES: | SIZE: | TYPE: | FILTERED: | PRESERVATIVE: | PARAMETER: |
|--------------|---------|---------------|---|---|------------|
| 1 | 1000 ml | glass plastic | yes <input type="checkbox"/> no <input checked="" type="checkbox"/> | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | Sulfolane |
| 1 | 125 ml | glass plastic | yes <input type="checkbox"/> no <input checked="" type="checkbox"/> | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | Sulfate |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |
| | | glass plastic | yes no | None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | |

SAMPLING PERSONNEL

Name (SIGNATURE): _____ Chain of Custody No. _____
 Name (SIGNATURE): _____