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Mr. Richard J. Powals, P.E.
Executive Vice President and Chief Operating Officer
Environmental Geo-Technologies, LLC
28470 Citrin Drive
Romulus, Michigan 48174

December 16, 2016
NTH Project No. 73-140551-16

RE: 2016 Compliance Audit
EGT Facility
Romulus Michigan

Dear Mr. Powals:

We are pleased to submit this compliance audit for the two underground injection wells at the Environmental Geo-Technologies, LLC (EGT) hazardous waste treatment, storage and disposal facility in Romulus, Michigan. We performed this audit in accordance with the scope of services outlined in our proposal (NTH Proposal No. 73-140551-16) dated November 4, 2016.

This audit was conducted to fulfill the requirements of permit condition Part II C.(8) of the U.S. Environmental Protection Agency's (U.S. EPA's) in each of the Underground Injection Control (UIC) Permits MI-163-1W-C010 and MI-163-1W-C011. This permit condition requires that, at least every 24 months after the initial 12 months after commencing injection, the permittee (EGT) obtain a compliance audit, including an on-site review, from an independent third party. The paragraph further states that the auditor's report evaluate the permittee's compliance with all provisions of the permit and shall be submitted to the permittee and the Director (of the U.S. EPA Region 5) within two months of the audit.

The audit identified several record keeping issues / findings that are inconsistent with permit conditions, which are described herein. In accordance with the permit conditions, the permittee must expeditiously address the noted items. In addition, some items were observed that were inconsistent with the permit, but which were immediately resolved or which cannot be resolved by EGT.

INTRODUCTION

The EGT facility is licensed by the State of Michigan to receive and treat nonhazardous fluids, characteristic hazardous waste fluids, and listed hazardous waste fluids. The EGT facility is permitted by the U.S. EPA to inject the fluids into two underground injection wells, the wellheads of which are adjacent to the treatment building. This audit is only of the U.S. EPA permit for the injection wells and not of the State of Michigan Hazardous Waste Management



Facility Operating License. The U.S. EPA permit references the following documents, the conditions of which were also evaluated as part of this audit:

- Waste Analysis Plan (prepared as part of the State of Michigan Operating Permit), Revision 4.0, dated January 20, 2012
- Document Repository Plan, January 20, 2012
- Corrosion Monitoring Plan, dated July 16, 2013

EGT injects fluids under pressure into sandstone formations between 3937 and 4550 feet below the ground surface. The injection tubing is fiberglass and is surrounded by brine/diesel fuel that serves as a leak detection annular fluid. The pressure of the annular fluid is maintained at a pressure exceeding that of the injected fluids. Therefore, a leak in the injection tubing would be identified by a decrease in the pressure differential between the injection and annular fluids. The U.S. EPA permits for the injection wells include a maximum allowed injection pressure, a minimum allowed annular pressure, as well as a minimum pressure differential between the annular and injection fluids.

The U.S. EPA permits require that EGT continuously monitor parameters associated with the injection well. Injections are conducted in batches, and a sample is required to meet certain physical and chemical parameters for compatibility prior to injection. In addition to documenting injection characteristics, the U.S. EPA permits require EGT to maintain documentation of received wastes, waste acceptance profiles, training, financial assurance, and mechanical integrity.

METHODOLOGY

The Audit was conducted from November 14 to November 21, 2016. The audit was therefore completed by the anniversary of commencing injection. The audit record review period was from the date of the previous audit commenced (November 13, 2014) through November 13, 2016. The Audit Team reviewed a portion of all of the following items:

- Approved waste profiles
- Records on the nature and composition of received wastes
- Records on the nature and composition of injected fluids
- Results of continuous monitoring devices
- Mechanical integrity tests and calibrations
- Results of injection and annulus pressures
- Reporting and other permit required documents generated
- Financial assurance documentation
- Records of personnel training



Due to the large volume of approved waste profiles, received waste manifest records and monthly report documents generated during the period being audited, a thorough review of representative example documents was coupled with spot check reviews of the remaining documents in these categories for consistency with those records for which detailed reviews were conducted. One record of received waste per month was selected at random and approximately 10 percent of monthly reports (which include of candidate acceptable waste profiles and fingerprints of injected wastes) were randomly selected and reviewed in detail.

The audit team and the staff interviewed are identified in the table below. Resumes for the NTH audit team members are attached.

Name	Title
Bradley C. Venman	Senior Vice President (NTH)
Steve Innes, CHMM, P.E.	Senior Project Engineer (NTH)
Richard J. Powals, P.E.	Vice President of Compliance and Client Relations
James Hawkins	Laboratory Manager

The NTH audit team conducted the required on-site review on November 14, 2014. The on-site portion of the audit lasted approximately 8 hours. During the on-site portion of the audit, the audit team toured the facility, including the receiving area, the laboratory, the treatment area, and the injection wells. While most documents were reviewed on-site, some documents were provided by e-mail after the on-site portion of the audit was completed.

To aid in the efficient completion of the audit, a checklist was used that incorporated the requirements of the U.S. EPA permits. The completed checklist allowed for easy identification of permit condition compliance and deficiencies.

SUMMARY OF AUDIT FINDINGS

The audit checklist is attached. The line items listed on the checklist include the permit requirement, the document or method used to evaluate the requirement (where appropriate), the results of the review, and an indication of the result of the review. A summary of the findings according to the related permit condition is presented below. Some of the summary information presented below may refer to more than one finding as identified in the audit checklist.

- Monitoring records for grab sampling and analysis of injections (fingerprint forms) did not include the time of sampling - **Part I E.9.(e)(1)**.
- The internal compliance audit completed by the permittee during 2015 was not submitted to the Director within two months of the Audit – **Part II C.(8)**.



- The following documents were not available on the EGT website in accordance with the Document Repository Plan: 2015 Annual Report, and the results of the 2015 or 2016 mechanical integrity tests (only a cover letter for the 2015 test was available). The following documents were not available at the Romulus Public Library in accordance with the Document Repository Plan: Monthly Reports after January 2015, 2015 Annual Report, the results of the 2015 or 2016 mechanical integrity tests, and other correspondence with EPA in 2015 or 2016 – **Part II D.**
- The monthly reports reviewed did not include the following scaled graphs: one graph including the daily maximum injection pressure and daily average flow rate, and one graph displaying the daily maximum and minimum sight glass levels – **Part II D.1.(c).**
- The monthly reports reviewed did not include a tabulation of the cumulative additions and cumulative subtractions of the amount of liquid added or removed from the annulus system for each of the past 12 months – **Part II D.1.(e).**
- An alarm for annulus differential pressure occurred on August 28, 2015. Although a notification letter for this alarm was submitted on September 1, 2015, a statement of noncompliance was not included in the August 2015 monthly report submitted on September 30, 2015, or the September 2015 monthly report submitted on October 30, 2015 – **Part II D.1.(f).**
- Some of the items listed on the repair and maintenance log did not include a reason the repair or maintenance activity was required. For components that did or had the potential to fail, the repair outcome and new life expectancy was not listed – **Part II D.1.(h).**



LIMITATIONS

The investigations presented in this report have been completed in accordance with a proposal from NTH Consultants, Ltd. The evaluations and conclusions presented in this report have been made to assist the client in making a reasonable assessment of regulatory compliance with the specifically identified regulations at the identified property. Considering the identified scope of the present audit, our findings of compliance or non-compliance should not be construed as absolute certainties, but rather as probabilities based on our professional judgment.

This audit was completed for the purpose of determining regulatory compliance with the permit conditions of UIC Permits MI-163-1W-C010 and MI-163-1W-C011. In general, as they had already been reviewed and approved by the U.S. EPA and MDEQ staff as part of the permit and operating license approval, NTH did not evaluate EGT procedures and policies to determine if they were adequate or appropriate for use in the process at the site. The findings, conclusions and recommendations presented in this report have been, in part, based on information provided by EGT personnel. NTH does not warrant the accuracy or completeness of the information provided by these individuals. This report presents NTH's opinion of the documents reviewed as of this date, based on the results of this audit.



Mr. Richard J. Powals, P.E.
December 16, 2016

Should you have any questions or require additional information, please call us at 248-553-6300.

Sincerely,

NTH Consultants, Ltd.

A handwritten signature in blue ink that reads "Steven Innes".

Steven Innes, CHMM, P.E.
Senior Project Engineer

A handwritten signature in blue ink that reads "Bradley C. Venman" with "(mm)" written below it.

Bradley C. Venman
Senior Vice President

SI/BCV/mam

Attachment

Environmental Geo-Technologies, LLC of Romulus, Michigan
Annual Audit in Compliance with U.S. EPA Permit Numbers: MI-163-1W-C010 and C011

Permit Condition	Document Reviewed or Other Source. If audit of selected items, which selected and rationale	Result
General		
Has operation continued beyond the permit expiration date:	Current date compared with permit expiration (10/26/21) - Permit Cover	OK
Part I		
E 9 Records		
a Were the following records maintained at least 5 years from the measurement		
Calibration	Records visually viewed on-site and / or on the EGT website.	OK
Maintenance	Records visually viewed on-site and / or on the EGT website.	OK
Original chart recordings for continuous monitoring instrumentation	Records visually viewed on-site.	OK
Copies of reports required by the permit	Reports visually viewed on-site.	OK
b Were records of data to complete the permit app retained for at least 5 years from permit date	Audit conducted within the 5 year timeframe. Records visually viewed on-site.	OK
c Were records of the nature and composition of injections retained for least 3 years after plugging	Audit conducted within the 3 year timeframe. Records visually viewed on-site.	OK

Environmental Geo-Technologies, LLC of Romulus, Michigan
Annual Audit in Compliance with U.S. EPA Permit Numbers: MI-163-1W-C010 and C011

Permit Condition	Document Reviewed or Other Source. If audit of selected items, which selected and rationale	Result
e Audit selected monitoring records for:	Monitoring documented on standard form. Injection monitoring included in Monthly Report. 24 monthly reports had been completed (October 2014 through September 2016) since the last independent audit. Representative example reports were selected at an audit rate of approximately 10%. Therefore, 3 reports was selected for a thorough review. By a random number generator, 2, 5 and 19 were selected, which correspond to the November 2014 (2 months from October), February 2015 and the April 2016 monthly reports. In addition, other Monthly Reports were briefly perused; the results of the review were consistent.	
Date, exact place and time of sampling or measurement	On the injection fingerprint forms reviewed, the date of the grab sampling is recorded, but time is not. For the automatic measurements recorded on the circle charts, the date and time are recorded. The place of sampling is indicated in the Waste Analysis Plan.	Finding
Names of individuals who performed sampling or measurements	On the injection fingerprint forms reviewed, the name of the sampler is indicated. The circle charts record the results of automated measurements and no sample is collected.	OK
Precise description of both sampling methodology and handling of samples	A description of the sampling methodology and handling of samples are indicated in the Waste Analysis Plan.	OK
Dates of analyses	On the injection fingerprint forms reviewed, the date of analysis is indicated.	OK
Names of individuals who performed the analyses	On the injection fingerprint forms reviewed, the name of the person who performed the analysis is included.	OK
Analytical techniques or methods used	The analytical techniques or methods used are indicated in the Waste Analysis Plan.	OK
Results of analyses	On the injection fingerprint forms reviewed, the results of the analysis are included.	OK
E 10 Monitoring		
Audit selected monitoring for:	See I E 9 e for a description of audit method.	
Were methods in App. I of 40 CFR 261 used	The analytical techniques or methods used are indicated in the Waste Analysis Plan, and are consistent with the requirements.	OK
Were the results reported at the intervals in Part II(D) and III(A) of the permit	The results were reported at the required intervals.	OK
Audit selected monitoring on the nature of injected fluids for:	See I E 9 e for a description of audit method.	
a Were methods in Tables I A, B and C of 40CFR136.3 or App. II of 40CFR 261 used	The analytical techniques or methods used are indicated in the Waste Analysis Plan, and are consistent with the requirements.	OK
b Did Sampling and analysis comply with Waste Analysis Plan	Staff interviewed indicated that the method of sampling and analysis complied.	OK

Environmental Geo-Technologies, LLC of Romulus, Michigan
Annual Audit in Compliance with U.S. EPA Permit Numbers: MI-163-1W-C010 and C011

Permit Condition	Document Reviewed or Other Source. If audit of selected items, which selected and rationale	Result
E 11 Signatory Requirements	See I E 9 e for a description of audit method.	
<u>Audit selected reports and other information required to be submitted for:</u>		
<u>Were they signed and certified in accordance with 40CFR144.32</u>	The certification language matched the regulatory requirement.	OK
E 12 Reporting Requirements	Staff interviewed indicated that only in-kind alternations and no additions took place.	
a <u>Were there physical alterations or additions</u>		
<u>If so, was there written notice to the director</u>	N/A	N/A
b <u>Were there planned changes to the facility or activity that might have resulted in noncompliance</u>	Staff interviewed indicated that there were no changes to the facility or activity that might have resulted in noncompliance.	
<u>If so, was there advance notice to the director</u>	N/A	N/A
c <u>Audit selected reports of compliance, noncompliance, and interim or final requirements</u>	See I E 9 e for a description of audit method.	
<u>Were they submitted no later than 30 days following the date in the compliance schedule</u>	The reports were submitted in accordance with the compliance schedule.	OK

Environmental Geo-Technologies, LLC of Romulus, Michigan
Annual Audit in Compliance with U.S. EPA Permit Numbers: MI-163-1W-C010 and C011

Permit Condition	Document Reviewed or Other Source. If audit of selected items, which selected and rationale	Result
d Did any of the following occur:		
<u>Activities that may have endangered human health</u>	Staff interviewed indicated that no activities occurred that might have endangered human health.	
<u>Alarm or shutdown device activated</u>	1) An alarm activated at 2:16 pm on August 28, 2015 2) An alarm activated at 1:57 pm on September 3, 2015 3) An alarm activated at 11:33 am on September 5, 2015 4) An alarm activated at 4:09 pm on September 11, 2015	
If so was there:		
<u>Oral notice within 24 hours</u>	Oral notice was provided for all 4 alarms on the same day	OK
<u>Written report within 5 days (refer to permit for required contents of report)</u>	1) Written report submitted on September 1, 2015 2) Written report submitted on September 8, 2015 3) Written report submitted on September 8, 2015 4) Written report submitted on September 14, 2015	OK
e <u>Was there other noncompliance</u>	Staff interviewed indicated that no other noncompliance occurred.	
<u>If so, did reports contain information in I(E)(12)(d)(3) of the permit</u>	N/A	N/A
f <u>Were there relevant facts not submitted with the application or incorrect information submitted?</u>	Staff interviewed indicated that no relevant facts were not submitted or incorrect information was submitted.	
<u>If so, was a report made within 10 days</u>		N/A
g <u>Was officer certification made that they have read and are familiar with permit within 30 days of receipt</u>	EGT indicated that the permit was received on October 11, 2011. The certification was made in a letter to the U.S. EPA, dated October 25, 2011.	OK
E 13 Compliance with 40CFR144.14		
1 Notification	Provisions fulfilled by Permit	OK

Environmental Geo-Technologies, LLC of Romulus, Michigan
Annual Audit in Compliance with U.S. EPA Permit Numbers: MI-163-1W-C010 and C011

Permit Condition	Document Reviewed or Other Source. If audit of selected items, which selected and rationale	Result
2 Obtained EPA ID number		
<u>Does the facility have an EPA ID Number</u>	MIR000016055	OK
3 Comply with manifest system		
<u>Audit selected manifests for compliance with 264.71</u>	One randomly selected manifest per month was reviewed. The selected random date for review was the 11th of each month. On that date each month, the manifest was reviewed for the first load received that was hazardous waste and that had a profile not already reviewed.	
4 Manifest discrepancies		
<u>Were there any manifest discrepancies (self reported or identified above)</u>	Occasional discrepancies in quantity were noted.	
<u>If so, were they addressed in accordance with 264.72</u>	The discrepancies were address in accordance with the requirement.	OK
5 Does the operating record comply with 267.73 (a) and (b)		
<u>Description and quantity of hazardous waste received,</u>	The description and quantity of hazardous waste was identified on the waste manifests.	OK
<u>And method and date of treatment, storage or disposal in accordance with 40CFR 246 App I</u>	The method of disposal is deep well injection. The date of disposal is documented on the injection fingerprints.	OK
<u>Location and quantity disposed, cross referenced with manifest number</u>	The location of disposal is the sandstone formation between 3937 and 4550 feet . All manifested waste loads were disposed at this location.	OK
6 Annual report		
<u>Was biennial report submitted and did it contain the items required by 264.75</u>	The State of Michigan indicated receiving the biennial report on November 16, 2016 with no noted discrepancies.	OK
7 Unmanifested waste report		
<u>Was any waste accepted without a manifest</u>	Staff interviewed indicated that no hazardous waste was accepted without a manifest.	
<u>If so, was a report submitted within 15 days and did it contain the items required by 264.76</u>	N/A	N/A

Environmental Geo-Technologies, LLC of Romulus, Michigan
Annual Audit in Compliance with U.S. EPA Permit Numbers: MI-163-1W-C010 and C011

Permit Condition	Document Reviewed or Other Source. If audit of selected items, which selected and rationale	Result
8 Personnel training		
<u>Is the program compliant with 264.16 (a)3</u>	HAZWOPER, RCRA and site-specific training approved by the MDEQ were provided between November 10 and 11, 2015.	OK
<u>Is it directed by a person trained in hazardous waste management procedures</u>	Dr. Harding from Integrated Environmental provided the training.	OK
<u>Audit selected training records for:</u>	There are 4 operators. Records of all were reviewed.	
<u>Was training received within 6 months of hire or job assignment</u>	Training records for the operators were reviewed and they were trained within the required timeframe.	OK
<u>Was there annual review</u>	Training records for the operators were reviewed and they received an annual review within the previous 12 months.	OK
<u>Is it documented as in 264.16 (d)</u>	The required items are in the MDEQ operating license and on certificates provided in the Annual Report.	OK
H 2 Periodic Mechanical Integrity Testing		
a Long string casing, injection tubing and annular seal test within the last 12 months or	Records of the testing conducted on July 25, 2016, were reviewed.	OK
<u>whenever there is a well workover, the packer is reset or loss of integrity is suspected</u>	Staff interviewed indicated that no such conditions have occurred.	N/A
b Bottom hole cement tested by tracer survey within the last 12 months	The survey completed on August 8, 2016 confirmed a leak free condition of the tubing.	OK
c Temperature, noise, oxygen activation within the last 24 months (or less if approved)	The survey conducted on July 25, 2016 did not indicate a loss of external mechanical integrity or indicate a sign of upward fluid movement.	OK
d Casing inspection after a workover in which the tubing is pulled	Staff interviewed indicated that no such conditions have occurred.	N/A
3 Was Director notified at least 30 days prior to testing mechanical integrity	The director was notified on June 20, 2016 for the testing that occurred between July 25 and August 8, 2016	OK
<u>Were results reported within 30 days</u>	The results were received in September 2016 and submitted on September 19, 2016.	OK

Environmental Geo-Technologies, LLC of Romulus, Michigan
Annual Audit in Compliance with U.S. EPA Permit Numbers: MI-163-1W-C010 and C011

Permit Condition	Document Reviewed or Other Source. If audit of selected items, which selected and rationale	Result
4 Were gauges calibrated to within 0.5% FS before the mechanical integrity test	Calibration conducted prior to the June 25, 2016 test indicated an accuracy of 1.44 psig, or 0.024% FS.	OK
Is the gauge marked in no greater than 5psi increments	The gauge provided an accuracy of less than 5 psi.	OK
5 Did a mechanical integrity test fail	Staff interviewed indicated that no such conditions has occurred, and a review of mechanical integrity documentation was consistent with this statement.	
If so, were operations halted and results reported	N/A	N/A
I 1 Financial responsibility		
Has FAM been updated to include post closure costs	Staff interviewed indicated there are no post closure responsibilities for the wells.	N/A
a Is there a cost estimate for closure and post-closure in current dollars	The closure cost estimate was updated by Advanced Resource Management in a letter dated May 29, 2015, in current dollars.	OK
b Have the cost estimates been updated yearly within 30 days of the fist estimate	A FAM financial review was conducted by the MDEQ on July 27, 2016. The MDEQ indicated the FAM was acceptable in a letter, dated August 5, 2016.	OK
Was the estimate updated using the Oil and Gas Field Equipment Cost Index inflation factor	The update was conducted by obtaining a new cost estimate from a well services contractor and is therefore current.	OK
c Has the closure or post-closure plan changed	Staff interviewed indicated that the closure and post-closure plans have not changed.	
If so has the cost estimate been updated	N/A	N/A
d Does the current cost estimate exceed the current FAM	The current cost estimate does not exceed the FAM.	OK
If so, has a revised FAM been submitted within 90 days	N/A	N/A
e Is a copy of the closure and post closure cost estimates available on site	A copy of the documents were visually observed on-site.	OK

Environmental Geo-Technologies, LLC of Romulus, Michigan
Annual Audit in Compliance with U.S. EPA Permit Numbers: MI-163-1W-C010 and C011

Permit Condition	Document Reviewed or Other Source. If audit of selected items, which selected and rationale	Result
2 Insolvency		
Have any of the following occurred:		
<u>Bankruptcy of the trustee or FAM institution</u>	Comerica Bank holds the FAM. Staff interviewed indicated this condition has not occurred. Audit staff are also unaware of this condition occurring.	OK
<u>Suspension or revocation of the authority of the trustee</u>	Comerica Bank holds the FAM. Staff interviewed indicated this condition has not occurred. Audit staff are also unaware of this condition occurring.	OK
<u>Loss of the FAM institution to issue the instrument</u>	Comerica Bank holds the FAM. Staff interviewed indicated this condition has not occurred. Audit staff are also unaware of this condition occurring.	OK
<u>If so, was the Director notified within 10 days</u>	N/A	N/A
3 Has there been bankruptcy and if so was the Director notified	Staff interviewed indicated this condition has not occurred.	OK
4 Was another FAM obtained within 60 days if 2 or 3 occurred	N/A	N/A
J 3 Has upward migration of fluids been discovered	Staff interviewed indicated this condition has not been observed.	
<u>If so, did operations cease and were EPA and MDEQ notified within 24 hours</u>	N/A	N/A
4 Have any releases of hazardous waste occurred	Staff interviewed indicated that no releases have occurred from the wellhead or from the well.	
<u>If so, has corrective action been instituted</u>	N/A	N/A
K Audit selected injections and determine if:	See I E 9 e for a description of audit method.	
1 Land ban exemption is still in effect or concentrations below UTS	Staff interviewed indicated that the land ban exemption is still effective and audit staff are not aware of the exemption being revoked.	OK

Environmental Geo-Technologies, LLC of Romulus, Michigan
Annual Audit in Compliance with U.S. EPA Permit Numbers: MI-163-1W-C010 and C011

Permit Condition	Document Reviewed or Other Source. If audit of selected items, which selected and rationale	Result
2 Are characteristics and concentrations below limits in permit Att. D	The reviewed manifests and profiles and injection fingerprints did not include characteristics or concentrations inconsistent with Attachment D of the Permit.	OK
Are monthly average injection range below limits in permit Att. A	The reviewed injection ranges did not exceed the limits in Attachment A of the Permit.	OK
4 Has there been a false, inaccurate or incomplete information in a request for an exemption	Staff interviewed indicated that this condition has not occurred.	
If so, was the Director notified within 48 hours	N/A	N/A
5 Was an exemption terminated	Staff interviewed indicated that the land ban exemption is still effective and audit staff are not aware of the exemption being revoked.	
If so, was prohibited waste injected after that date	N/A	N/A

Part II

A Construction		
Has the construction of the well been altered since the notice to inject was received	Staff interviewed indicated that there have been no alterations have occurred to the well.	
If so, do the modifications comply with this section	N/A	N/A
B Operations		
Audit selected well operations reports for:	See I E 9 e for a description of audit method.	
1 Was injection pressure above the limit in Att. A.	The maximum pressures were below the limits in Attachment A.	OK
Have fractures been initiated	Staff interviewed indicated that this condition has not occurred.	OK
2 Have substances other than those in Att. E been injected	There was no indication in the documents reviewed that this condition occurred, and staff interviewed indicated that this condition has not occurred.	OK
Was certified statement attesting to this included in annual report	The statement was in the last paragraph of the 2015 Annual Report letter.	Ok

Environmental Geo-Technologies, LLC of Romulus, Michigan
Annual Audit in Compliance with U.S. EPA Permit Numbers: MI-163-1W-C010 and C011

Permit Condition	Document Reviewed or Other Source. If audit of selected items, which selected and rationale	Result
3 Was positive pressure maintained within annulus	Based on the reviewed and spot checked documents, positive pressure was maintained.	OK
Was annular fluid changed from what was originally approved	Staff interviewed indicated that this condition has not occurred.	OK
4 Warning and Shutoff System		
Was the warning and shutoff system modified since injection began	Staff interviewed indicated that this condition has not occurred.	
If so, does it meet the requirements of this section	N/A	N/A
Has the system been continuously operated	Staff interviewed indicated the system has been continuously operated.	OK
Has the system been tested within the last 12 months	The most recent system test was conducted on September 17, 2015. Staff interviewed indicated that the Director or representative has not yet scheduled the 2016 system test.	Obs.
Did the test involve simulated failure conditions	Yes	OK
Was the test witnessed by the Director or representative	Yes	OK
5 Trained Operator		
Has a trained operator been onsite at all times during well operation	Staff interviewed indicated that operators were on-site during well operation.	OK
Has each operator undergone at least 24 hours of refresher training each year	Training records indicated that required refresher training was conducted	OK
6 Blowout Prevention		
a Has pressure been maintained to prevent return of injected fluids	Based on the reviewed and spot-checked documents, positive pressure was maintained. Staff interviewed indicated that the required pressure to prevent the return of fluids varied based on the previously injected fluids and that this requirement had been met.	OK
Has there been a well workover	Staff interviewed indicated that this condition has not occurred.	
If so, was the casing filled with a high SG fluid or a plug installed	N/A	N/A
Is an operational blowout preventer onsite during workovers	N/A	N/A

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Permit Condition	Document Reviewed or Other Source. If audit of selected items, which selected and rationale	Result
	Staff interviewed indicated that this condition has not occurred.	
b Have injected wastes had the potential to reacted with the formation to generate gasses		
If so has the temperate, pH or acidity been limited	N/A	N/A
If so have procedures been generated to assure pressure imbalances do not occur	N/A	N/A
	Staff interviewed indicated that this condition has not occurred.	
c Has a blowout occurred		
If so, has operation been suspended until written authorization is received from the Director	N/A	N/A
C Monitoring		
1 Sampling point		
Are injection fluid samples taken at the locations specified in the WAP	The WAP does not specify the location for sample collection. Staff interviewed indicated that samples are collected from the SST (location visually observed). This is the final tank before injections. This appears the be the proper collection point to the audit staff.	OK
2 Continuous Monitoring Devices		
Are the following monitored by continuous monitoring devices	Observed circle charts. An interpretative table is also included in the monthly reports	
Injection pressure	Yes	OK
Injection volume	Yes	OK
Sight glass level	Yes	OK
pH	Yes	OK
Flow rate	Yes	OK
Annulus pressure	Yes	OK
Have the results been submitted to the Director and maintained at the facility		
In accordance with permit II D	In monthly reports. Observed on-site and/or on the EGT website	OK
In accordance with Appendix A	In monthly reports. Observed on-site and/or on the EGT website	OK

Environmental Geo-Technologies, LLC of Romulus, Michigan
Annual Audit in Compliance with U.S. EPA Permit Numbers: MI-163-1W-C010 and C011

Permit Condition	Document Reviewed or Other Source. If audit of selected items, which selected and rationale	Result
3 Waste Analysis Plan		
<u>Audit compliance with - See separate checklist</u>	See Separate Checklist.	N/A
<u>Is a copy at the facility</u>	The plan was observed on-site.	OK
<u>Was certification of WAP accuracy and analysis representativeness in annual report</u>	The affirmation was included in the Annual Reports.	OK
4 Ambient Monitoring		
<u>Has falloff monitoring been completed within the last 12 months</u>	The testing that occurred between July 25 and August 8, 2016	OK
<u>Were plans submitted to the Director 30 days prior to testing</u>	The director was notified on June 20, 2016.	OK
5 Compatibility of Well Material		
<u>Have construction materials been subject to monthly testing for visual deterioration, weight or dimension change</u>	Yes - documentation is provided in the Monthly Reports.	OK
<u>Has there been loss of mass, thickness, cracking or other signs of corrosion</u>	Yes - indications of corrosion were noted for both fiberglass and stainless steel.	
<u>If so, have they been included in monthly reports</u>	The indications of corrosion were reported in the monthly reports.	N/A
6 Temperature Monitoring		
<u>Has temperature of injectate been monitored once per day,</u>	Temperature is documented on the circle charts.	OK
<u>Or every 6 hours if injecting for more than 8 hours</u>	Temperature monitoring is continuous	OK
<u>Are results submitted in accordance with permit II D</u>	The circle charts are included in the Monthly Reports.	OK

Environmental Geo-Technologies, LLC of Romulus, Michigan
Annual Audit in Compliance with U.S. EPA Permit Numbers: MI-163-1W-C010 and C011

Permit Condition	Document Reviewed or Other Source. If audit of selected items, which selected and rationale	Result
7 Calibration		
Has there been calibration of the following within the last 12 months - or during maintenance		
<u>flow meters</u>	As included in the Annual Report, dated December 31, 2015, the meter were calibrated on June 29, 2015, which was within the previous 12 months.	OK
<u>injection and annular pressure monitoring recorders</u>	As included in the Annual Report, dated December 31, 2015, the meters were calibrated on December 1, 2015, which was within the previous 12 months.	OK
<u>pH meters</u>	As included in the Annual Report, dated December 31, 2015, the meter was calibrated on April 15, 2015, which was within the previous 12 months.	OK
8 Compliance Audit		
<u>Was there a compliance audit during the first 12 months of operation by a third party</u>	Injection commenced on November 21, 2013. An audit was conducted completed on November 13, 2014.	OK
<u>Was there a compliance audit during the past 24 months by a third party</u>	A third party audit was conducted completed on November 13, 2014.	OK
<u>Was there an internal audit between third party audits</u>	An internal audit was completed on November 15, 2015	OK
<u>Were the audits submitted within 2 months of the audit</u>	The November 13, 2014 audit was submitted on December 3, 2014. The November 15, 2015 audit was not submitted.	Finding
<u>Were deficiencies expeditiously addressed</u>	Deficiencies for the November 13, 2014 audit were addressed on December 3, 2014 by a Corrective and/or Preventative Action(s) letter.	OK
D Reporting		
<u>Have reports been submitted by the end of the following month</u>	A monthly report was dated within the appropriate time each month through October 2016.	Ok
<u>Are reports publicly available nearby or on a website</u>	The reports are available on the website: http://envgeotech.com/epa-documents/ and at the Romulus Public Library (visited on October 29, 2014)	OK

Environmental Geo-Technologies, LLC of Romulus, Michigan
Annual Audit in Compliance with U.S. EPA Permit Numbers: MI-163-1W-C010 and C011

Permit Condition	Document Reviewed or Other Source. If audit of selected items, which selected and rationale	Result
Document Repository plan - Are the following present:		
<u>Monthly reports</u>	The monthly reports were available on the website. The most recent monthly report available at the library was January 2015.	Finding
<u>Annual Reports</u>	The most recent annual report available on the website was October, 24 2014. The most recent annual report available at the library was October, 24 2014.	Finding
<u>Demonstrations of mechanical integrity, well workovers under Permit II(D)3</u>	The cover letter only for the 2015 mechanical integrity testing was available on the website. No information for the 2015 or 2016 mechanical integrity testing was available at the library. Well workovers have not occurred.	Finding
<u>Proposed changes</u>	No changes were proposed.	N/A
<u>EPA inspection reports and correspondence with EPA</u>	Correspondence was available on the website. No 2015 or 2016 correspondence was available at the library	Finding
Are 5 years of documents at the following locations and updated within the most recent quarter		
<u>EGT offices</u>	Documents were available.	OK
<u>Internet</u>	The documents (other than as indicated above), were available.	OK
<u>Romulus Public Library</u>	The documents (other than as indicated above), were available.	OK
<u>1</u> Audit select monthly report for:	See I E 9 e for a description of audit method.	
<u>a</u> Results of injection fluid analysis specified in App. A and E and WAP including:		
<u>waste components by common name chemical name, structure and concentration</u>	The injection fingerprints do not include these items. However, Attachment A, Page 1 does not require these items. The fingerprint analysis, which includes the items required by the WAP, was completed for	OK

Environmental Geo-Technologies, LLC of Romulus, Michigan
Annual Audit in Compliance with U.S. EPA Permit Numbers: MI-163-1W-C010 and C011

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b Tabulation of:		
<u>maximum injection pressure</u>	The item was included in the tabulation.	OK
<u>maximum and minimum sight glass levels</u>	The item was included in the tabulation.	OK
<u>maximum and minimum annulus pressure</u>	The item was included in the tabulation.	OK
<u>injectate pH</u>	The item was included in the tabulation.	OK
<u>flow rate</u>	The item was included in the tabulation.	OK
<u>minimum differential between simultaneous measurements of injection pressure and annulus pressure for each day</u>	The item was included in the tabulation.	OK
c Scaled graphs representing the continuous monitoring of (from Permit II(C)2)		
<u>Injection pressure</u>	The item was included on the circle chart.	OK
<u>Injection volume</u>	The item was included on the circle chart.	OK
<u>Sight glass level</u>	No graph with this item was included.	Finding
<u>pH</u>	The item was included on the circle chart.	OK
<u>Flow rate</u>	The item was included on the circle chart.	OK
<u>Annulus pressure</u>	The item was included on the circle chart.	OK
<u>And Graph 1 daily maximum injection pressure and daily average flow for month</u>	No graph with these items was included.	Finding
<u>And Graph 2 daily maximum and minimum sight glass levels</u>	No graph with these items was included.	Finding
d Statement of total volumes injected to date, in current year, and in current month		
<u>Separate out wastewater and total</u>	The total volume injected to date and in the current month was included. The volume injected in the current year was not included, but this is not on the example table in Appendix A, Page 2 of the permit. Staff interviewed indicated that no wastewater has been injected.	OK N/A

Environmental Geo-Technologies, LLC of Romulus, Michigan
Annual Audit in Compliance with U.S. EPA Permit Numbers: MI-163-1W-C010 and C011

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e Table of dates, amounts and types of liquid added and removed from annulus during the month	There was no liquid added to the annulus during for the reviewed months. However, for other months (March and June 2016) that were subsequently selected at random, the reports indicate the required items on the Monthly Maintenance Log.	OK
<u>cumulative additions and subtractions for the current month</u>	A maximum of one addition or subtraction was noted for each month reviewed.	N/A
<u>and cumulative for past 12 months</u>	A 12 month cumulative summary was not included in any of the reviewed reports.	Finding
f Indication of noncompliance including event that exceeds pressures or triggers alarm or shutdown	An alarm for annulus differential pressure occurred on August 28, 2015.	
<u>If there has been noncompliance reported, verify it is in the corresponding monthly report</u>	Although a notification letter was submitted on September 1, 2015, a statement of noncompliance was not included in the August 2015 monthly report submitted on September 30, 2015, or the September 2015 monthly report submitted on October 30, 2015.	Finding
g Results of continuous corrosion monitoring from Permit II(C)(5)	Results of the coupon testing are included.	OK
h Description of repair and maintenance on injection or annulus during the previous month	Monthly maintenance logs are included.	OK
<u>Including reason</u>	Some items on the Monthly Maintenance Log didn't include a reason.	Finding
<u>If the component did or had the potential to fail, the repair outcome and new life expectancy</u>	This was not included on the Monthly Maintenance Log.	Finding
2 Annual Report		
<u>Have annual reports been submitted at least every 12 months from the date of the permit (8/27/13)</u>	Annual reports were submitted on October 24, 2014 and December 31, 2015. The December 31, 2015 report was selected for evaluation of the following items.	
a Does it include injection analyses from monthly (a), above	The report incorporates by reference the previously submitted monthly reports.	OK
<u>Does it include statements showing the requirements of I(E)10, II(B)2 and II(C)3 have been met</u>	The statements are included.	OK
b Results of fall off testing, and temperature and noise from I(H)(2)c	The report incorporates by reference the previously submitted reports.	OK
c Results of calibration from II(C)7	The calibration testing was included.	OK

Environmental Geo-Technologies, LLC of Romulus, Michigan
Annual Audit in Compliance with U.S. EPA Permit Numbers: MI-163-1W-C010 and C011

Permit Condition	Document Reviewed or Other Source. If audit of selected items, which selected and rationale	Result
d Documentation of training required by II(B)5	The training certificates to document operator training were included.	OK
e Compliance report from II(C)8	The report incorporates by reference the previously submitted compliance report.	OK
3 Report on Well Tests and Workover		
Has there been a well test, demonstration of mechanical integrity or workover	A well test was conducted and documented in a report received in September 2016.	OK
Were the results submitted within 30 days	The report was submitted on September 19, 2016.	OK

Waste Analysis Plan

A1 Audit select generators waste profiles for	See I E 13 for a description of audit method. 24 profiles representing each of the 24 evaluated manifests were reviewed.	
Was Waste Profile Sheet provided by generator	A waste profile sheet was provided for the approval corresponding to each load.	OK
Was a representative sample submitted, or analytical provided by the generator	Analysis of a submitted sample, or analytical reports or generator knowledge documentation were provided for each profile evaluated.	OK
Was sample analyzed by SW-846	A SW-846 method was used for the laboratory analysis.	OK
a Audit selected waste shipments (Receiving and Approval forms) for		
discrepancies from waste profile		
Are there discrepancies	No discrepancies were noted.	
If so, verify resolution or waste rejection	N/A	N/A
b Audit selected annual review of waste characterization for discrepancies from waste profiles	No discrepancies were noted.	
If so, verify resolution or waste rejection	N/A	N/A
c Audit selected generator waste profiles for		
To ensure EGT reviewed to evaluate if facility can accept the waste	Staff interviewed discussed the process by which profiles are accepted or rejected. The reviewed profiles were consistent with this process.	OK

Environmental Geo-Technologies, LLC of Romulus, Michigan
Annual Audit in Compliance with U.S. EPA Permit Numbers: MI-163-1W-C010 and C011

Permit Condition	Document Reviewed or Other Source. If audit of selected items, which selected and rationale	Result
A2 Audit selected manifests to ensure waste only arrived by		
Drums, totes, tanker trucks, vacuum trucks or railcars	All manifests indicated one of these methods of transport.	OK
a Does facility review manifests and LDR notifications for	The facility keeps LDR notifications with the profiles.	
completeness	The reviewed documents were complete.	OK
compare manifest and LDR for consistency	The reviewed documents were consistent.	OK
compare manifest and waste profile for consistency	The reviewed documents were consistent.	OK
compare analytical from the generator to that of the waste shipment for consistency	The reviewed documents were consistent.	OK
compare manifest to the number of containers, volume and/or weight for consistency	Discrepancies were addressed in accordance with appropriate regulations	OK
determination if the waste is Subpart CC and must go to receiving tank (RT-10)	Staff interviewed indicated that this is standard practice.	OK
b Does facility visually inspect between 1 and all containers for and compare the results to the waste profile	The appropriate number of containers were inspected. Results were documented on Fingerprint form.	OK
color	This item is included on the form.	OK
physical state	This item is included on the form.	OK
pH	This item is included on the form.	OK
consistency	This item is included on the form.	OK
oil	This item is included on the form.	OK
Are wastes with discrepancies rejected, reevaluated or transferred	Staff interviewed indicated that at least 1 load needed to be reevaluated. Staff indicated that the generator was contacted to determine the reason for deviation from the profile or previous loads. New profiles were generated where necessary based on new information from the generator. The new profile was reviewed and it was consistent with the corresponding manifest.	OK
Has facility had wastes that needed to be rejected, and what did they do	Staff interviewed indicated that no wastes needed to be rejected.	N/A
c Audit selected waste shipments for compliance with screening in Table A3.A.1	The required analysis was performed and documented on the fingerprint form.	OK
ci Audit select Receiving and Approval Form to evaluate if wastes were accepted with nonconformance of		
variation greater than 10% if weight	Discrepancies were addressed in accordance with appropriate regulations	OK
variation in piece count	Discrepancies were addressed in accordance with appropriate regulations	OK
obvious difference in waste makeup of toxic constituents not reported on manifest	Staff interviewed indicated that this condition did not occur.	N/A
Have waste shipments other than one time variation occurred	Staff interviewed this has not occurred, other than noted above.	
Was the generator required to repeat pre-acceptance procedures	Pre-acceptance procedures were repeated for the loads identified.	OK

Environmental Geo-Technologies, LLC of Romulus, Michigan
Annual Audit in Compliance with U.S. EPA Permit Numbers: MI-163-1W-C010 and C011

Permit Condition	Document Reviewed or Other Source. If audit of selected items, which selected and rationale	Result
cii Has facility had loads where it had to evaluate potential nonconformance	Staff interviewed this has not occurred, other than noted above.	
Audit selected Receiving and Approval forms for conformance with this section	A new waste profile was prepared and pre-acceptance procedures were completed.	OK
ciii Audit select Waste Profile information and lab analysis to		
verify PCB analysis and concentration below 50 ppm	The PCB concentration was less than 50 ppm, as indicted by either laboratory analysis or generator knowledge. In addition, staff interviewed indicated oily wastes are not accepted	OK
d Audit select Receiving and Approval forms		
Comparison to waste profile (same as A1a)	See WAP A1A	OK
Comparison to manifest	See WAP A1A	OK
di Audit select loads of Containerized waste to verify the # of containers sampled matches the table	For containerized loads, the number of samples was consistent with the required samples.	OK
dii Audit select bulk shipment loads to verify sampling is in accordance with Table A1 and A2	A description of the sampling methodology and handling of samples are indicated in the Waste Analysis Plan.	OK
A3 Audit select shipments of waste off-site to verify they have LDR notifications	Offsite waste shipments from January through August 2015 were reviewed and met the requirement.	OK
C1 Audit of waste profiles and LDR above fulfil this audit requirement	Offsite waste shipments from January through August 2015 were reviewed and met the requirement.	OK
C2 Audit select shipments of waste shipped off-site to verify the certifications are included	Offsite waste shipments from January through August 2015 were reviewed and met the requirement.	OK
C3 Audit select shipments of waste shipped off-site to verify the certifications are included	Offsite waste shipments from January through August 2015 were reviewed and met the requirement.	OK
C6 Audit select loads and verify the facility operating log includes at least:	See I E 9 e and I E 13 for a description of audit method.	
waste characterization	This item was included.	OK
profile	This item was included.	OK
analytical results	This item was included.	OK
fingerprint forms	This item was included.	OK
LDR	This item was included.	OK
approvals	This item was included.	OK
manifests	This item was included.	OK
Was a discrepancy was discovered in A1a or A2b, and it could not be resolved within 15 days	Interviewed staff and reviewed manifests indicated that all discrepancies were resolved within 15 days.	OK
If so, was EPA and MDEQ notified	N/A	N/A

Environmental Geo-Technologies, LLC of Romulus, Michigan
Annual Audit in Compliance with U.S. EPA Permit Numbers: MI-163-1W-C010 and C011

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C7 Has waste from a foreign source been accepted	Foreign sources have been accepted.	
If so, was MDEQ and EPA notified at least 4 months before first shipment	Notifications were provided within the appropriate timeframe.	OK
Audit select waste profiles and verify that EGT's sent notice of license and capacity, and acceptance of the waste	Appropriate notifications were provided.	OK
C8 Verify QA/QC plan is present	A copy of the QA/QC Plan was provided by e-mail. A review of the contents of the QA/QC Plan was not conducted as part of this audit.	OK
D1 Audit select injection batches to verify fingerprint was tested and includes	See I E 9 e for a description of audit method.	
SG	This item was included.	OK
TSS	This item was included.	OK
pH	This item was included.	OK
Temperature	This item was included.	OK
TDS	This item was included.	OK
Visual solids	This item was included.	OK
Flashpoint	This item was included.	OK
Conductivity	This item was included.	OK
D2 Were any loads received with constituents in App A page 3	EGT began receiving waste with code F039 in April 2015.	
If so, audit select monthly fingerprints to verify		
the test was performed on a treated batch containing the compound	The appropriate test was performed.	OK
the result of the analysis was below the limit on App A page 3	The result of the analysis was below the limit.	OK
D3 Verify during D1 and D2 that sampling and analysis was in accordance with 261 or 136.3	The analytical techniques or methods used are indicated in the Waste Analysis Plan, and are consistent with the requirements.	OK