

M4796
Mantia

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

M479636242

FACILITY: Environmental Geo-Technologies, LLC		SRN / ID: M4796
LOCATION: 28470 Citrin Drive, ROMULUS		DISTRICT: Detroit
CITY: ROMULUS		COUNTY: WAYNE
CONTACT: John Frost, General Manager		ACTIVITY DATE: 08/30/2016
STAFF: Jonathan Lamb	COMPLIANCE STATUS: Compliance	SOURCE CLASS: Minor
SUBJECT: Scheduled inspection, FY 2016		
RESOLVED COMPLAINTS:		

INSPECTED BY: Jonathan Lamb, AQD-Detroit Office
PERSONNEL PRESENT: Rick Powals, Engineer; John Frost, General Manager
FACILITY PHONE NUMBER: 734-946-1000
FACILITY WEBSITE: www.envgeotech.com

FACILITY BACKGROUND:

Environmental Geo-Technologies, LLC (EGT) is a RCRA Part 111 licensed hazardous waste facility which uses deepwell injection of hazardous and nonhazardous aqueous wastes. The facility operates in a mostly industrial area off of I-94 near Metro Airport, though there are some residential areas nearby. The facility operates 5.9 acre area, but owns an additional adjacent 9 acres which may be used for future expansion of the facility. EGT started accepting wastes in November 2013.

EGT has employees on site for about 12 hours per day, but usually only receives wastes from 7:30 AM to 5:30 PM, Monday through Friday, though will occasionally accept wastes deliveries on weekends. There are approximately 12 employees on site.

COMPLAINT/COMPLIANCE HISTORY:

There have been no complaints made against the facility in the past several years and there are no outstanding consent orders. However, the site has long been considered a controversial source due to opposition from residents and environmental groups over concerns of deepwell hazardous waste injection in this area. As such, this facility should be considered a controversial source by AQD if there are any future permitting or enforcement actions.

PROCESS DESCRIPTION AND EQUIPMENT:

The facility accepts hazardous and nonhazardous liquid wastes, including acids, caustics, and "waters" (neutral aqueous solutions, including leachates and tank washings); on an annual basis, over 90% of the material accepted and treated on site is classified as hazardous waste. Acids are the main waste stream processed, and include wastes from galvanizing, steel pickling, platers, and chemical processing. Wastes are received from all over the country via trucks and tankers. Most waste is received via jumbo tanker (8-12,000 gallon capacity), but wastes can also be received from smaller tankers and drums delivered via truck. The facility does not currently accept waste via railcar, but has the capability to do so. Due to limited storage capacity on site, most wastes are treated and injected within 24 hours after being received.

When the tanker or truck arrives on site, the incoming material is first sampled and analyzed in the lab to make sure the material is what it is supposed to be and to determine compatibility. Once accepted, the material is pumped from the tanker to the receiving tanks for holding. Material is pumped from the receiving tanks to the primary settling tanks to be blended with compatible materials. Treatment occurs in the primary settling tanks by adding reagents to precipitate any solids out of the liquid material; these tanks are equipped with agitators to aid in the mixing of the material. The heavy solids which drop out in the primary treatment tanks is pumped to a filter press while the remaining liquid material is pumped from the primary settling tanks through a three-stage cascade filtration system to remove as much finer solids as possible from the liquid. Once the liquid is filtered through the filter press and cascade canister filtration system, it is pumped to the secondary storage tanks for testing to make sure it meets specifications for injection. Once the waste in the secondary storage approved for injection, it is pumped from the secondary storage tanks through a polishing filter (to further remove fine solids), and is injected into one of two underground storage wells using "rotojet" injection pumps, which pump the material to a depth of around 4500-4650 feet below ground in a geologic area known as the Mt. Simon

Sandstone Formation.

Solid material collected by the filter press, cascade canister filtration system, and polishing filter is considered hazardous waste and is sent to landfill for disposal (currently, the waste is being sent to Clean Harbors Landfill in Sarnia, Ontario). Less than 1% of all waste streams received get sent to landfill as solid waste; over 99% is injected in the wells as liquid waste.

The facility does not accept radioactive wastes and generally does not accept fracking waste (facility has accepted one shipment of fracking brine in the past few years).

There are ten receiving tanks, Receiving Tanks 1 through 10 (EU RT-1 through EU RT-10). Receiving Tanks 1 through 4 are for acids wastes with a capacity of 16,500 gallons for each tank; Receiving Tanks 5 through 8 are for caustics with a capacity of 16,500 gallons for each tank; Receiving Tank 9 is for brines and has a capacity of 16,500 gallons; and Receiving Tank 10 is for incompatibles and has a capacity of 7,500 gallons.

There are six primary settling tanks, Primary Settling Tanks 1 through 6 (EU PST-1 through EU PST-6). Primary Settling Tank 1 is for treating incompatibles and has a capacity of 6,770 gallons; Primary Settling Tanks 2 through 4 are for acid wastes with a capacity of 6,700 gallons for each tank; Primary Settling Tanks 5 and 6 are for caustics with a capacity of 6,770 gallons for each tank.

There is one 16,950-gallon secondary storage tank (EU SST-1) and two sludge storage tanks (EU ST-1 and EU ST-2), each with a capacity of 20,000 gallons. Total tank storage capacity on site is approximately 220,000 gallons.

There is a small diesel-fired emergency generator on-site which is used in case of power outage. The unit is tested for approximately one hour per month, but has otherwise not been used. The unit appears to meet the definition of an emergency generator and should be exempt per R.285(g), but the facility was unable to provide generator specifications or a record of hours of operation during the inspection. The regulatory status was not evaluated at this time, but will be evaluated during the next inspection.

PROCESS CONTROLS:

The receiving tanks and primary settling tanks are controlled by one of two carbon canister filtration systems. One carbon canister filtration system controls emissions incompatible wastes in Receiving Tank 10 (EU RT-10) and Primary Settling Tank 1 (EU PST-1); the other carbon canister system controls emission from all the other receiving tanks and primary settling tanks, which contain compatible wastes. Emissions from the secondary storage tank and two sludge tanks are not controlled.

The facility is required to perform ambient air monitoring, per its Part 111 license. The facility is currently only performing ambient air monitoring when receiving wastes with a VOC content over 25 pounds, per an agreement with AQD and OWMRP, based upon review of past ambient air monitoring data and wastes processed at the facility.

APPLICABLE RULES/ PERMIT CONDITIONS:

EGT is a minor source operating under PTI No. 539-97F, issued on March 19, 2015.

In determining compliance status at the time of this inspection, production and emission records from July 2014 through June 2016 were reviewed. These records can be found in the orange facility file.

PTI No. 539-97B, Special Conditions:

FGTANKS – Tanks and process vessels for treating wastewater that may be regulated as hazardous waste. Associated Emission Unit IDs: EU RT-1, EU RT-2, EU RT-3, EU RT-4, EU RT-5, EU RT-6, EU RT-7, EU RT-8, EU RT-9, EU RT-10, EU PST-1, EU PST-2, EU PST-3, EU PST-4, EU PST-5, and EU PST-6

I. EMISSION LIMITS

1. IN COMPLIANCE. Testing for VOC emission rate from FGTANKS performed on April 21, 2014, showed an average VOC emission rate of 0.008 lb/hour, well below the permit limit of 4.3 lb/hour.

2. IN COMPLIANCE. Facility was well below the permit limit of 9.4 tons of VOC per 12-month rolling time period. Facility does not process much waste containing VOCs; the VOC content of the waste streams processed in FGTANKS is usually less than 10 pounds per month. The 12-month rolling total VOCs processed for the time period July 2015 through June 2016 was only 113 pounds (0.06 tons).

IV. DESIGN/EQUIPMENT PARAMETERS

1. IN COMPLIANCE. The tanks in FGTANKS are equipped with conservation vents and nitrogen blanket system which are installed, maintained, and operated in a satisfactory manner.
2. IN COMPLIANCE. All tank emissions are exhausted through an activated carbon system, which is monitored daily for breakthrough.
3. IN COMPLIANCE. One of the carbon canister adsorption units is equipped with a saturation indicator. The other is tested daily with a portable device and records are maintained of these daily tests. At this time, this is considered sufficient for demonstrating compliance with this condition. Facility has never had to replace carbon due to breakthrough, but still replaces the carbon filters once per year regardless of saturation level. Filters were most recently replaced on April 14, 2016.

V. TESTING/SAMPLING

1. IN COMPLIANCE. Testing of VOC emission rates from FGTANKS was performed on April 21, 2014, and the results were reported to AQD on May 29, 2014. Test results showed a VOC emission rate of 0.008 lb/hour, in compliance with the permit limit of 4.3 lb/hour.

VI. MONITORING/RECORDKEEPING

1. IN COMPLIANCE. A required calculations and records are maintained on a monthly basis.
2. IN COMPLIANCE. Facility maintains records of VOC emissions on a monthly and 12-month rolling time period basis, and maintains the required calculations for determining VOC content of the waste streams and emissions.

VII. STACK/VENT RESTRICTIONS

- 1 and 2. IN COMPLIANCE. According to facility documentation, stacks SVCOMPATIBLES and SVINCOMPATIBLES appear to meet permit specifications.

FGFACILITY – All process equipment source-wide, including equipment covered by other permits, grandfathered equipment, and exempt equipment.

I. EMISSION LIMITS

1. IN COMPLIANCE. Visible emissions from roads and lots do not exceed 5% opacity. No fugitive emissions were observed during the inspection. All truck roadways and lots are paved, and there are no material storage piles.

II. MATERIAL LIMITS

1. IN COMPLIANCE. Facility does not receive more than 400,000 gallons of material per calendar day. Facility maintains records of the date and quantity of each individual waste load received, but does not total the wastes received on a daily basis. However, a review of the waste materials received from July 2015 through June 2016 demonstrates that the facility did not receive more than 400,000 gallons of material on any calendar day; based on a cursory review of the records, it appears the most material the facility receives on a calendar day is around 50,000 gallons, and the facility is not capable of accepting more than 220,000 gallons per day due to limited tank storage capacity.
2. IN COMPLIANCE. VOC content of material received does not exceed more than 0.2 percent by weight based on a monthly average. Facility calculates the maximum VOC content of each waste load received, and reports these results to AQD on a quarterly basis. A review of the materials received from July 2015 through June 2016 shows that the facility has not accepted any single material with a VOC content exceeding 0.2 percent by weight; the highest VOC content of any material received was 0.00005 percent by weight (received on June 2, 2016).
3. IN COMPLIANCE. Facility screens all materials received to assure that no material received exceeds 10.0 percent by weight of the compounds listed in this condition. The facility has yet to accept any waste streams containing the compounds listed in this condition, and is not even approved to process hexachlorobenzene (D032) in its Part 111 operating license.

III. PROCESS/OPERATIONAL RESTRICTIONS

- 1. IN COMPLIANCE. The fugitive dust plan specified in Appendix A of PTI No. 539-97F is implemented and maintained.
- 2. IN COMPLIANCE. Facility only accepts and processes waste streams approved in the facility's Part 111 operating license.

VI. MONITORING/RECORDKEEPING REQUIRMENTS

- 1. IN COMPLIANCE. Facility calculates and records all records on a monthly basis. The amount of material received is recorded for each shipment received but not totaled on a daily basis. Facility will be asked to also maintain a daily total to demonstrate compliance with SC FGFACILITY II.1.
- 2. IN COMPLIANCE. Facility monitors and records the date and quantity of each load of material received, so technically daily records of material received, but the facility will be asked to also maintain a record of total material received on a daily basis to demonstrate compliance with SC FGFACILITY II.1, which is the intent of this condition.
- 3. IN COMPLIANCE. Facility monitors and records data to demonstrate the content of all materials received. Facility has yet to accept any waste streams containing the compounds listed in SC II.3.
- 4. IN COMPLIANCE. Facility maintains a written log of all maintenance, breakthrough monitoring results, and dates of replacement of the carbon filters for the carbon adsorption units. These logs were reviewed during the inspection.
- 5. IN COMPLIANCE. Facility maintains records demonstrating compliance with the fugitive dust plan, as specified in Appendix A of PTI 539-97F.

VII. REPORTING

- 1. IN COMPLIANCE. Facility submits quarterly reports to AQD on a timely basis with the following information:
 - a. Date each shipment received;
 - b. Quantity of each shipment received;
 - c. Weight percent of VOC for each shipment received;
 - d. Average monthly VOC content of material received;
 - e. VOC emission rate on a monthly and 12-month rolling time period basis.
- 2. NOT EVALUATED. Facility has not had any releases of cyanide gas.
- 3. NOT EVALUATED. There have been no changes in land use for property classified as industrial or as a public roadway, so no notification has been required.

Fugitive Dust Control Plan: Facility follows the fugitive dust control plan. Lots and roadways are paved, so there is minimal occurrence of track out. There are no material storage piles outside. There were no fugitive dust problems during the inspection.

FINAL COMPLIANCE DETERMINATION:

At the time of inspection, EGT was in compliance with the conditions of PTI No. 539-97F and other applicable State and federal air regulations which were evaluated during this inspection.

NAME 

DATE 9-26-16

SUPERVISOR JK