STATE OF MICHIGAN
Rick Snyder, Governor

DEPARTMENT OF ENVIRONMENTAL QUALITY

AIR QUALITY DIVISION
CONSTITUTION HALL ● 525 WEST ALLEGAN STREET ● P.O. BOX 30260 ● LANSING, MICHIGAN 48909-7760
www.michigan.gov/air

PUBLIC PARTICIPATION DOCUMENTS

For
RDD Operations, LLC
Romulus, Michigan

PERMIT APPLICATION NUMBER

539-97E

April 14, 2011

FACT SHEET

APRIL 14, 2011

Purpose and Summary

The Michigan Department of Environmental Quality (MDEQ), Air Quality Division (AQD), is proposing to act on Permit to Install (PTI) application No. 539-97E from RDD Operations, LLC (RDD). The permit application asks for changes to conditions in the facility's current PTI to match changes proposed for the hazardous waste operating license application, such as increases in the allowed throughput. The application also requests changes to the fugitive dust plan and other changes and corrections. The proposed project is subject to permitting requirements of the Department's Rules for Air Pollution Control. Prior to acting on this application, the AQD is holding a 30-day public comment period and a public hearing to allow all interested parties the opportunity to comment on the proposed PTI. The AQD decision maker will consider all relevant information received during the comment period and hearing before taking final action on the application.

Background Information

The facility has an active Permit to Install, No. 539-97C, and operated for a time in the past under the name Environmental Disposal Systems, Inc. (EDS). The facility is not operating today. RDD currently owns the facility and intends to transfer it to Environmental Geo Technologies, LLC (EGT).

To carry out its designed operations, the facility also requires permits from the United States Environmental Protection Agency for its injection wells and a hazardous waste operating license from the MDEQ. The facility has applied for permits for its injection wells and for an operating license.

Proposed Facility and Present Air Quality

The facility is a hazardous waste treatment, storage, and disposal facility, and is located at 28470 Citrin Drive, Romulus. It is designed to receive and treat wastewater that may be regulated as hazardous waste. The facility is also designed to dispose of the treated wastewater by pumping it into two injection wells. The treatment processes are designed to remove inorganic substances and small amounts of organic compounds from the wastewater. Some materials, such as solids collected from the treatment processes, will be shipped offsite for disposal.

The area is considered to be "in attainment" for all National Ambient Air Quality Standards except for the standards for particulate matter less than 2.5 microns in diameter (PM2.5). The area is considered "nonattainment" for the PM2.5 standards.

Key Permit Review Issues

Staff evaluated the proposed project to identify all air quality state rules and federal regulations that apply or that may apply. The tables in Appendix 1 summarize these rules and regulations.

- **Rule 702, Volatile Organic Compound (VOC) Emissions –** This rule requires an evaluation of the following four items to determine what will result in the lowest maximum allowable emission rate of VOCs:

  a. Best available control technology (BACT) or a limit listed by the department on its own initiative

  b. New Source Performance Standards (NSPS)

  c. VOC emission rate specified in another permit

  d. VOC emission rate specified in the Part 6 rules for existing sources

  An evaluation of these four items determined that a VOC BACT limit (702(a) analysis) would dictate the lowest maximum allowable emission rate of VOC from the wastewater treatment process based on the total emissions and the carbon adsorber emission controls. The permit requires the company to regularly monitor the effectiveness of these emission controls and to replace the carbon when needed to maintain their effectiveness.

- **Rule 224, T-BACT Analysis –** Rule 224 requires BACT for toxics (T-BACT) for toxic air contaminant (TAC) emissions. It excludes from this requirement any TACs that are also VOCs if the process provides BACT. Since, as noted above, the process provides Rule 702(a) BACT, this exclusion applies. For any non-VOC TACs that are also organics and volatile, the carbon adsorber emission controls provide excellent control, and based on AQD experience this provides T-BACT for these TACs.

- **Rule 225, Toxics Analysis –** The MDEQ Rules for Air Pollution Control require that the ambient air concentrations caused by TAC emissions from the process be compared against health-based screening levels. There are two types of screening levels: initial threshold screening levels (ITSLs) and initial risk screening levels (IRSLs). The AQD establishes ITSLs and IRSLs from toxicological data using methods provided in Rules 231 and 232. Rule 225 requires that the concentrations of TACs in the ambient air caused by the process being permitted must meet the ITSLs and IRSLs. The rule also provides alternatives for emissions that do not meet their IRSLs. The analysis for RDD relies on some of these alternatives, as described below.

  RDD submitted an analysis that focused on 13 TACs to represent a worst-case set of TACs that the facility could receive. These representative TACs include some with quite low screening levels, some that are difficult to capture with the emission controls in place, and some that are quite volatile. The AQD considers this to be an acceptable approach and an appropriate set of representative TACs for this process.

  AQD staff reviewed RDD's air quality modeling and its evaluation of TAC impacts. The AQD review confirmed RDD's analysis, which found that all TACs comply with Rule 225. Note that since some of these TACs have more than one screening level, there are 19 screening levels to address.

  The representative TACs comply with Rule 225 in four different ways:

  1. All seven TACs with established initial threshold screening levels (ITSLs) have impacts less than the ITSL. Six of these TACs also have established initial risk screening levels (IRSLs) to address, so only one TAC has completed this analysis.

2. Five of the TACs with established IRSLs have impacts less than the IRSL. At this point, six of the TACs have shown they comply with Rule 225. This leaves seven TACs yet to be addressed.
3. Rule 225(2) provides for an alternative analysis for TACs that do not meet the IRSL. If the impacts of the facility-wide emissions of a TAC meet the secondary risk screening level (SRSL), which is ten times the IRSL, the TAC's emissions comply with Rule 225. In this case, of the seven TACs that do not meet their IRSLs, five meet their SRSLs.
4. For the two remaining TACs, which meet neither their IRSLs nor their SRSLs, all impacts above the SRSL occur on land used as "industrial property or public roadway." According to Rule 225(3)(b), if all impacts above the SRSL are less than or equal to ten times the SRSL and these impacts occur on land used as "industrial property or public roadway," the impacts comply with Rule 225. Since the impacts for these two TACs meet this requirement, these TACs also comply with Rule 225.

This analysis shows that all 13 representative TACs comply with Rule 225. Based on this analysis, the AQD considers that all TAC emissions from the process will comply with Rule 225.

See Table A for a listing of each individual TAC, the predicted ambient impacts, and comparisons to the screening levels.

Key Aspects of Draft Permit Conditions

- **Emission Limits (VOC) –** The draft permit includes VOC emission limits for the sludge dryer and the tanks. Emissions are controlled by carbon adsorbers. The VOC emission limits have not changed from the limits in the existing PTI, No. 539-97C.

- **Emission Limits (Particulate matter) –** The draft permit includes particulate matter (PM) emission limits for the sludge dryer. A wet scrubber controls PM emissions from the sludge dryer. The annual emission limit from the existing PTI, No. 539-97C, has been removed because it serves no regulatory purpose.

- **Usage Limits -** The draft permit includes several limits on the material processed at the facility. The limits address these matters:
    1. The amount and VOC content of sludge that may be dried.
    2. The daily amount of material that may be received.
    3. The monthly average VOC content of the material received.
    4. The maximum content of seven listed compounds in any shipment of material received.

  The limits in the draft permit for material received differ from those in the existing permit. The hourly and annual treatment limits have been removed and the daily limit has been doubled. These changes effectively double the amount allowed to be received annually. The effects of these increased amounts were considered in the reviews discussed in the section of this Fact Sheet titled "Key Permit Review Issues."

- **Process/Operational Restrictions –** The draft permit requires the facility to follow the fugitive dust control program in the appendix to the permit. It also restricts the waste streams

to be accepted or processed to those allowed in the Part 111 (hazardous waste) operating license.

At the applicant's request, and after review, the AQD has modified the fugitive dust plan in the draft permit from the plan in the existing PTI. Some elements of the existing plan were consolidated to reduce repetition. Also, some elements of the existing plan were not relevant and were therefore removed, such as the requirement for covered trucks. Since all wastewater is received in tanker trucks, this requirement was inappropriate.

- **Emission Control Device Requirements –** The draft permit includes requirements to install, maintain, and operate emission control devices. The facility will be required to control the following emissions:
  - VOCs: by conservation vents for the tanks in FGTANKS and by carbon adsorbers for each vent
  - Particulate matter: by a wet scrubber for the sludge dryer
- **Testing & Monitoring Requirements –** The draft permit includes the following requirements for the facility:
  - Through performance testing, verify particulate matter and VOC emission rates from the sludge dryer and VOC emission rates from the tanks.

Conclusion

Based on the analyses conducted to date, staff concludes that the proposed project would comply with all applicable state and federal air quality requirements. Staff also concludes that this project, as proposed, would not violate the federal National Ambient Air Quality Standards or the state and federal PSD increments.

Based on these conclusions, staff has developed draft permit terms and conditions which would ensure that the proposed facility design and operation are enforceable and that sufficient monitoring, recordkeeping, and reporting would be performed by the applicant to determine compliance with these terms and conditions. If the permit application is deemed approvable, the delegated AQD decision maker may determine a need for additional or revised conditions to address issues raised during the public participation process.

If you would like additional information about this proposal, please contact Mr. Paul Schleusener, AQD, at 517-335-6828.

Table A. Toxic Air Contaminant Impacts for Rule 225*

Pollutant Information				ITSL or IRSL Test Rule 225(1)			SRSL Test Rule 225(2)		"Industrial Property and Public Roadway" Test Rule 225(3)(b)	
CAS No.	**Toxic Air Contaminant**	**Potential Emission Rate (lb/hr)**	**Pollutant Impact ($\mu g/m^3$)**	**ITSL or IRSL ($\mu g/m^3$)**	**Averaging Time**	**Pass/ Fail**	**SRSL ($\mu g/m^3$)**	**Pass/ Fail**	**10 × SRSL ($\mu g/m^3$)**	**Pass/ Fail**
71-43-2	Benzene	0.0081	0.56	30	24 hours	**Pass**				
			0.068	0.1	Annual	**Pass**				
56-23-5	Carbon tetrachloride	0.23	16.1	100	24 hours	**Pass**				
			1.95	0.17	Annual	Fail ===>	1.7	Fail ===>	17	**Pass**
67-66-3	Chloroform	0.45	3.8	0.4	Annual	Fail ===>	4	**Pass**		
106-46-7	1,4-Dichlorobenzene	0.0118	0.82	800	24 hours	**Pass**				
			0.10	0.14	Annual	**Pass**				
107-06-2	1,2-Dichloroethane	0.012	0.11	0.04	Annual	Fail ===>	0.4	**Pass**		
75-35-4	1,1-Dichloroethylene	0.0091	0.63	200	24 hours	**Pass**				
121-14-2	2,4-Dinitrotoluene	0.0079	1.0	2	8 hours	**Pass**				
			0.067	0.009	Annual	Fail ===>	0.09	**Pass**		
118-74-1	Hexachlorobenzene	0.0079	0.067	0.002	Annual	Fail ===>	0.02	Fail ===>	0.2	**Pass**
87-68-3	Hexachloro-1,3-butadiene	0.0083	0.070	0.05	Annual	Fail ===>	0.5	**Pass**		
67-72-1	Hexachloroethane	0.0084	0.59	3.5	24 hours	**Pass**				
			0.071	0.3	Annual	**Pass**				
79-01-6	Trichloroethylene	0.18	1.56	0.6	Annual	Fail ===>	6	**Pass**		
88-06-2	2,4,6-Trichlorophenol	0.0079	0.067	0.3	Annual	**Pass**				
75-01-4	Vinyl Chloride	0.010	0.67	100	24 hours	**Pass**				
			0.08	0.11	Annual	**Pass**				

* For a description of the Rule 225 analysis, see the bullet "Rule 225, Toxics Analysis" in the section titled "Key Permit Review Issues."

Appendix 1

STATE AIR REGULATIONS

State Rule	Description of State Air Regulations
R 336.1201	Requires an Air Use Permit for new or modified equipment that emits, or could emit, an air pollutant or contaminant. However, there are other rules that allow smaller emission sources to be installed without a permit (see Rules 336.1279 through 336.1290 below). Rule 336.1201 also states that the Department can add conditions to a permit to assure the air laws are met.
R 336.1205	Outlines the permit conditions that are required by the federal Prevention of Significant Deterioration (PSD) Regulations and/or Section 112 of the Clean Air Act. Also, the same types of conditions are added to their permit when a plant is limiting their air emissions to legally avoid these federal requirements. (See the Federal Regulations table for more details on PSD.)
R 336.1224	New or modified equipment that emits toxic air contaminants must use the Best Available Control Technology for Toxics (T-BACT). The T-BACT review determines what control technology must be applied to the equipment. A T-BACT review considers energy needs, environmental and economic impacts, and other costs. T-BACT may include a change in the raw materials used, the design of the process, or add-on air pollution control equipment. This rule also includes a list of instances where other regulations apply and T-BACT is not required.
R 336.1225 to R 336.1232	The ambient air concentration of each toxic air contaminant emitted from the project must not exceed health-based screening levels. Initial Risk Screening Levels (IRSL) apply to cancer-causing effects of air contaminants and Initial Threshold Screening Levels (ITSL) apply to non-cancer effects of air contaminants. These screening levels, designed to protect public health and the environment, are developed by Air Quality Division toxicologists following methods in the rules and U.S. EPA risk assessment guidance.
R 336.1279 to R 336.1290	These rules list equipment to processes that have very low emissions and do not need to get an Air Use permit. However, these sources must meet all requirements identified in the specific rule and other rules that apply.
R 336.1301	Limits how air emissions are allowed to look at the end of a stack. The color and intensity of the color of the emissions is called opacity.
R 336.1331	The particulate emission limits for certain sources are listed. These limits apply to both new and existing equipment.
R 336.1370	Material collected by air pollution control equipment, such as dust, must be disposed of in a manner, which does not cause more air emissions.
R 336.1401 and R 336.1402	Limit the sulfur dioxide emissions from power plants and other fuel burning equipment.
R 336.1601 to R 336.1651	Volatile organic compounds (VOCs) are a group of chemicals found in such things as paint solvents, degreasing materials, and gasoline. VOCs contribute to the formation of smog. The rules set VOC limits or work practice standards for existing equipment. The limits are based upon Reasonably Available Control Technology (RACT). RACT is required for all equipment listed in Rules 336.1601 through 336.1651.
R 336.1702	New equipment that emits VOCs is required to install the Best Available Control Technology (BACT). The technology is reviewed on a case-by-case basis. The VOC limits and/or work practice standards set for a particular piece of new equipment cannot be less restrictive than the Reasonably Available Control Technology limits for existing equipment outlined in Rules 336.1601 through 336.1651.
R 336.1801	Nitrogen oxide emission limits for larger boilers and stationary internal combustion engines are listed.
R 336.1901	Prohibits the emission of an air contaminant in quantities that cause injurious effects to human health and welfare, or prevent the comfortable enjoyment of life and property. As an example, a violation may be cited if excessive amounts of odor emissions were found to be preventing residents from enjoying outdoor activities.
R 336.1910	Air pollution control equipment must be installed, maintained, and operated properly.

STATE AIR REGULATIONS

State Rule	Description of State Air Regulations
R 336.1911	When requested by the Department, a facility must develop and submit a malfunction abatement plan (MAP). This plan is to prevent, detect, and correct malfunctions and equipment failures.
R 336.1912	A facility is required to notify the Department if a condition arises which causes emissions that exceed the allowable emission rate in a rule and/or permit.
R 336.2001 to R 336.2060	Allow the Department to request that a facility test its emissions and to approve the protocol used for these tests.
R 336.2801 to R 336.2804 Prevention of Significant Deterioration (PSD) Regulations **Best Available Control Technology (BACT)**	The PSD rules allow the installation and operation of large, new sources and the modification of existing large sources in areas that are meeting the National Ambient Air Quality Standards (NAAQS). The regulations define what is considered a large or significant source, or modification. In order to assure that the area will continue to meet the NAAQS, the permit applicant must demonstrate that it is installing the BACT. By law, BACT must consider the economic, environmental, and energy impacts of each installation on a case-by-case basis. As a result, BACT can be different for similar facilities. In its permit application, the applicant identifies all air pollution control options available, the feasibility of these options, the effectiveness of each option, and why the option proposed represents BACT. As part of its evaluation, the Air Quality Division verifies the applicant's determination and reviews BACT determinations made for similar facilities in Michigan and throughout the nation.
R 336.2901 to R 336.2903 and R 336.2908	Applies to new "major stationary sources" and "major modifications" as defined in R 336.2901. These rules contain the permitting requirements for sources located in nonattainment areas that have the potential to emit large amounts of air pollutants. To help the area meet the NAAQS, the applicant must install equipment that achieves the Lowest Achievable Emission Rate (LAER). LAER is the lowest emission rate required by a federal rule, state rule, or by a previously issued construction permit. The applicant must also provide emission offsets, which means the applicant must remove more pollutants from the air than the proposed equipment will emit. This can be done by reducing emissions at other existing facilities. As part of its evaluation, the AQD verifies that no other similar equipment throughout the nation is required to meet a lower emission rate and verifies that proposed emission offsets are permanent and enforceable.

FEDERAL AIR REGULATIONS

Citation	Description of Federal Air Regulations or Requirements
Section 109 of the Clean Air Act – National Ambient Air Quality Standards (NAAQS)	The United States Environmental Protection Agency has set maximum permissible levels for seven pollutants. These NAAQS are designed to protect the public health of everyone, including the most susceptible individuals, children, the elderly, and those with chronic respiratory ailments. The seven pollutants, called the criteria pollutants, are carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter less than 10 microns (PM10), particulate matter less than 2.5 microns (PM2.5), and sulfur dioxide. Portions of Michigan are currently non-attainment for either ozone or PM2.5. Further, in Michigan, State Rules 336.1225 to 336.1232 are used to ensure the public health is protected from other compounds.

FEDERAL AIR REGULATIONS

Citation	Description of Federal Air Regulations or Requirements
40 CFR 52.21 – Prevention of Significant Deterioration (PSD) Regulations **Best Available Control Technology (BACT)**	The PSD regulations allow the installation and operation of large, new sources and the modification of existing large sources in areas that are meeting the NAAQS. The regulations define what is considered a large or significant source, or modification. In order to assure that the area will continue to meet the NAAQS, the permit applicant must demonstrate that it is installing BACT. By law, BACT must consider the economic, environmental, and energy impacts of each installation on a case-by-case basis. As a result, BACT can be different for similar facilities. In its permit application, the applicant identifies all air pollution control options available, the feasibility of these options, the effectiveness of each option, and why the option proposed represents BACT. As part of its evaluation, the Air Quality Division verifies the applicant's determination and reviews BACT determinations made for similar facilities in Michigan and throughout the nation.
40 CFR 60 – New Source Performance Standards (NSPS)	The United States Environmental Protection Agency has set national standards for specific sources of pollutants. These New Source Performance Standards (NSPS) apply to new or modified equipment in a particular industrial category. These NSPS set emission limits or work practice standards for over 60 categories of sources.
Section 112 of the Clean Air Act **Maximum Achievable Control Technology (MACT)** **Section 112g**	In the Clean Air Act, Congress listed 189 compounds as Hazardous Air Pollutants (HAPS). For facilities which emit, or could emit, HAPS above a certain level, one of the following two requirements must be met: 1) The United States Environmental Protection Agency has established standards for specific types of sources. These Maximum Achievable Control Technology (MACT) standards are based upon the best-demonstrated control technology or practices found in similar sources. 2) For sources where a MACT standard has not been established, the level of control technology required is determined on a case-by-case basis.

Notes: An "Air Use Permit," sometimes called a "Permit to Install," provides permission to emit air contaminants up to certain specified levels. These levels are set by state and federal law, and are set to protect health and welfare. By staying within the levels set by the permit, a facility is operating lawfully, and public health and air quality are protected.

The Air Quality Division does not have the authority to regulate noise, local zoning, property values, off-site truck traffic, or lighting.

These tables list the most frequently applied state and federal regulations. Not all regulations listed may be applicable in each case. Please refer to the draft permit conditions provided to determine which regulations apply.