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

B886135533

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| **FACILITY:** Terex | | **SRN / ID:** B8861 |
| **LOCATION:** 212 S. OAK, DURAND | | **DISTRICT:** Lansing |
| **CITY:** DURAND | | **COUNTY:** SHIAWASSEE |
| **CONTACT:** Daniel Thompson , HSE Specialist | | **ACTIVITY DATE:** 06/14/2016 |
| **STAFF:** Julie Brunner | **COMPLIANCE STATUS:** Compliance | **SOURCE CLASS:** MINOR |
| **SUBJECT:** Scheduled inspection of the Terex Minerals Processing Systems (B8861) in Durand | | |
| **RESOLVED COMPLAINTS:** | | |

On June 14, 2016, I conducted an unannounced, scheduled inspection of the Terex Minerals Processing Systems (B8861) in Durand. The last inspection of this facility was on February 23, 2012.

Contacts:
Mr. Daniel Thompson, HSE Specialist, 989-288-9206, daniel.thompson@terex.com
Mr. Jack Spitler, Manufacturing Manager, 989-288-3121, jack.spitler@terex.com
Mr. Keith Shivnen, Operations Director for the Americas, 989-288-9218, keith.shivnen@terex.com

Facility Description and Regulatory Overview:
Terex produces heavy construction equipment such as gravel screens designed for use in road building and mining. It started out in the 1940s as Simplicity Engineering, and later was known as Powerscreen. Terex has a number of facilities throughout the United States, and worldwide.

The facility is located in Durand in a mixed use area consisting of residential and commercial/industrial properties.

The facility is a minor source of any regulated air contaminants including hazardous air pollutants (HAPs) and not subject to the Title V Renewable Operating Permit (ROP) program. Terex has two (2) active Permits to Install (PTI) Nos. 337-05 and 598-81. Both permits are for coating booths. There are also other exempt processes as identified below at the facility.

| Emission unit / Process | Emission unit description | Permit to Install, or exemption rule |
|---|---|---|
| **EU-SPRAYCOAT** | **Cross-draft paint spray booth equipped with air-assisted airless or HVLP coating applicators and dry filter overspray control for coating miscellaneous metal parts. The booth is also equipped to operate as a natural gas-fired 0.888 MMBtu/hr bake oven. The booth and oven share an exhaust stack.** | **PTI 337-05** |
| **Spray paint booth** | **One (1) water-wash paint booth** | **PTI 598-81** |
| **Small paint booth** | **Small paint booth with mat panel filters** | **Rule 287(c)** |
| **Metal machining processes** | **Various metal machining processes, exhausting to the in-plant environment** | **Rule 285(l)(vi)(B)** |
| **Plasma cutting** | **Plasma cutting of metal, exhausting to the in-plant environment** | **Rule 285(l)(vi)(B)** |
| **Welding** | **Welding units** | **Rule 285(i)** |
| **Paint touch up** | **Touch up of paint using hand held spray cans in the assembly area** | **Rule 287(a)** |

Michigan Air Emissions Reporting System (MAERS):
The facility does not report emission information to MAERS.

Inspection:
I arrived at 10:00 AM. Weather conditions were 66°F and partly cloudy with no wind. I detected no odors around the facility. There were no visible emissions from the stacks that could be viewed from the parking lot.

A pre-inspection meeting was conducted with Mr. Daniel Thompson (HSE Specialist) and Mr. Jack Spitler (Manufacturing Manager). Mr. Keith Shivnen (Operations Director for the Americas) briefly stopped in. I gave a brief overview of the inspection process and provided an "Environmental Inspections" brochure.

The facility operations were discussed. The facility operates two (2) shifts per day, and prefers operating 5 days per week, but is currently doing 6 to 7 days per week. PTI 598-81 for the water-wash paint booth can be voided as this equipment is long gone. Also, the facility does not have any boilers or emergency generators. A facility tour was then taken. All visitors are required to wear a safety vest, hardhat, hearing protection, and steel-toed shoes when out in the manufacturing areas. The facility was operating during the time of the inspection.

Large paint booth with dry filter overspray control, PTI 337-05:
This booth identified as EU-SPRAYCOAT is used for coating larger metal parts. It is a manual spray booth with large overhead doors that are closed when the operator is painting. From outside the plant, it could be seen that there were no visible emissions from the exhaust stack, nor were there any signs of paint particulates on the stack itself. The stack height appears to be compliant with the permitted height of 46.5 feet. The pre-filters are changed weekly, and post-filters are changed monthly in compliance with Special Condition (SC) 1.5 to install, maintained and operate the exhaust filters in a satisfactory manner.

Terex is using spray guns that are Graco G40 which are air-assisted airless applicators. This is in compliance with SC 1.6 which requires that EU-SPRAYCOAT be equipped with air-assisted airless or high volume low pressure (HVLP) applicators or comparable coating applicator technology with equivalent transfer efficiency.

Terex uses Sherwin-Williams water-based and solvent-based paints in the large paint booth, and in the small exempt paint booth. The large pieces such as decks receive a topcoat in the booth, and are then assembled into products such as large gravel screening tables.

Small paint booth; Rule 287(c):
The small paint booth is a walk-in manual booth equipped with a wall-sized bank of mat or panel filters. They change the filters in this booth on the same schedule as the large paint booth. The pre-filters are changed weekly, and post-filters are changed monthly. The operator wears PPE, and was painting a part. There is good draw of the overspray to the back of the booth and filters. The booth has a vertical exhaust out of the roof.

Painting of smaller parts prior to assembly is done in this booth. The paint applicator used is an older model Graco G40 air-assisted airless applicator. Paint is feed to the applicator from a 55-gallon drum that sits outside the booth.

Miscellaneous Processes (Assembly and Machining):
There are a number of metal machining processes, including a plasma cutter, CNC lathes, and milling machines which exhaust into the in-plant environment. The machining equipment dates to 1920, 1950, 2010 and 2011. It is exempt under Rule 285(l)(vi)(B).

A small parts welding booth, plasma torch table, and various welding operations have aircan-fume collectors overhead. The welding operations are exempt under Rule 285(i).

There is some touch up of paint using hand held spray cans in the assembly area. This is exempt under Rule 287(a).

Departure:
I departed the facility at approximately 11:50 AM after discussing my observations with Daniel and Jack.

Records:
The material safety data sheets (MSDS) for the paint primer, a white topcoat, and the purge and clean-up solvent (butyl cellusolve), the paint and solvent monthly usage tracking for PTI 337-05 for the years 2015 and

2016, and the monthly usage tracking for Rule 287(c) for the years 2015 and 2016 were obtained during the inspection and are attached.

SC 1.7 of PTI 337-05 states that "Upon prior written approval by the AQD District Supervisor, the permittee may determine the VOC content from manufacturer's formulation data." The facility was unable to find a record that this approval had been granted. On June 20, 2016, Terex requested approval to use manufacturer's formulation data, and included the "Environmental Data Sheet" for the Metal Primer, KF 500 dated June 6, 2016 and High Solids Acrylic Enamel, RAL 1013 (Topcoat White) dated May 24, 2016. Approval was granted on June 22, 2016 by the Lansing District Supervisor.

The "Environmental Data Sheet" for the Metal Primer, KF 500 shows a VOC content of 3.39 lb/gallon (minus water) and for the High Solids Acrylic Enamel, RAL 1013 (Topcoat White) the VOC content is 3.33 lb/gallon (minus water). The paint coatings used by Terex appear to be in compliance with the VOC content limit of 3.5 lb/gallon (minus water) in SC 1.2 of PTI 337-05.

Terex calculated VOC emissions for the calendar year 2015 of 5.0 tons per year (tpy) which is below the 9.9 tpy VOC limit in PTI 337-05. The total estimated emissions of VOCs and HAPs for the calendar year 2015 were VOC = 9.5 tpy and HAPs = 3.5 tpy as calculated by AQD staff. Emissions of acetone for the calendar year 2015 were 0.1 tpy as calculated by AQD staff.

I am not getting my emission calculations to match for the large booth permitted on PTI 337-05 for the 2015 calendar year, but they are matching the record for January through May 2016. For the 12-month rolling time period ending in May 2016, I am calculating 9.6 tpy which is close to the permit limit. I did make some assumptions on the coating contents based on information I received while visiting the facility, but a 4 ton difference in numbers is rather large. (My calculations are attached to this inspection report.)

I asked the facility to please review their records and see where the differences are occurring. Also, I recommended that they look at the calculations for emissions of HAPs. I am calculating higher emissions of HAPs, just less than 5 tpy with the large and small booth combined.

For the small booth, I reviewed the records for 2015 and the first four (4) months in 2016. For all months reviewed but one, coating usage was below 200 gallons per month as required by exemption Rule 287(c). In February of 2015, 202.2 gallons of coating was used in the small booth. It looks like some coating was disposed of in this month and the accounting of usage may have had errors. Otherwise, operating the small booth as exempt per Rule 287(c) looks appropriate. VOC emissions due to coating application in the small booth run about 2 tpy.

VOC emissions for both the large and small booth combined are greater than 10 tpy, and I recommend that the facility report emissions to MAERS.

Summary:
The facility appeared to be in compliance with all applicable rules and regulations, and with PTI 337-05. PTI 598-81 for a coating booth was voided on June 22, 2016.

The facility should check the calculations in the records they are using to track VOC emissions for compliance with PTI 337-05, and evaluate whether a permit modification is needed. They may also want to review whether a facility-wide HAPs opt-out from the ROP Program is needed.

NAME Julie L. Brunner DATE 7/14/16 SUPERVISOR B. M.