

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

N814944435

FACILITY: National Carbon Technologies, LLC		SRN / ID: N8149
LOCATION: 513 4TH STREET, GWINN		DISTRICT: Upper Peninsula
CITY: GWINN		COUNTY: MARQUETTE
CONTACT: DAN HENDRICKSON , PLANT MANAGER		ACTIVITY DATE: 05/22/2018
STAFF: Sydney Bruestle	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Onsite Inspection to verify compliance with PTI 24-12A and all other applicable state and federal air quality regulations		
RESOLVED COMPLAINTS:		

Joe Scanlan and I (Sydney Bruestle) performed an onsite inspection at National Carbon Technologies located at 125 G avenue Gwinn, Michigan, we met with Dan Hendrickson, Plant Manager.

Mr. Hendrickson gave us a tour of the facility and explained the operations onsite. The plant produces activated pulverized carbon from purchased saw dust. The carbon pellets can be burned as fuel in boilers. Equipment onsite includes raw material containment bunkers, a hammer mill, a drum dryer, conveyors, a 275 kW natural gas fired generator, and process heaters (reactors). Raw material (sawdust) is processed in the hammer mill, dried in the drum dryer, then stored in surge bins prior to being processed in either reactor #1 or reactor #3. The reactors are used to drive off volatiles. The facility was completely shut down on July 6, 2016, it was purchased in June 2017 and resumed normal operation. Mr. Hendrickson provided records required by PTI 24-12A which are outlined below.

#### EU--RAW-MATERIAL

**Description:** process equipment used to handle and convey raw materials. Emissions are controlled by baghouse CE-BH-666.

#### **Emission Limits:**

**PM:** 4.22 lb/hr 2014 test results: 0.39 lb/hr

**PM10:** 4.22 lb/hr 2014 Test Results: 0.39 lb/hr

**Visible emissions:** 10% opacity: At the time of my inspection the hammermill was not operating. There were no visible emissions from EU-RAW-MATERIAL.

**Testing:** PM and PM10 emissions shall be verified every 5 years. The last test was performed December 9, 2014, the results showed PM/PM10 emission rates of 0.39 lb/hr . The facility has plans to test before 2019.

#### **Monitoring and Record Keeping:**

The facility shall monitor and record the pressure drop across each baghouse at least once per day: In Compliance

The facility shall keep monthly records of raw material feed rate: In Compliance, this is being recorded daily during operation.

Daily visible emission observations are conducted once daily during operation. Mr. Hendrickson was able to show me these records onsite.

#### EU-DRYER

**Description:** A drum dryer the burns softwood or hardwood chips, corn stover, switch grass, and or sawdust (raw material). The dryer burns natural gas during startup and can continue to burn natural gas

during normal operation. Emissions from the dryer are controlled by a multiclone and thermal oxidation system.

**Material Limits:**

The permittee shall only burn natural gas, biogas, or burner fuel in EU-DRYER during normal operation. In compliance

The permittee shall not feed greater than 4.04 tons of burner fuel per hour to the burner. The facility is not using burner fuel for system at this time so the feed rate is 0.

**Process/Operational Restrictions:**

The permittee shall not process through EU-DRYER more than 25.0 oven dried tons (ODT) of product per hour as determined at the end of each calendar month. The facility processes 2-5 tons per hour, Records are attached to the hard file of this report.

The temperature at the inlet of EU-DRYER shall not exceed 800 degrees F. Temperature records show the dryer remains around 530 degrees F (attached to the hard file of this report).

The permittee shall not operate EU-DRYER unless the Thermal Oxidizer (TO) is installed, maintained and operated in a satisfactory manner. The TO must maintain a minimum combustion temperature of 1450 F for the primary chamber and 1000 degrees F for the secondary chamber. The primary chamber was 1680 degrees F and the secondary chamber was 1432 degrees F at the time of my visit. The temperature is monitored and recorded on a continuous basis.

**Testing/Sampling:**

The permittee uses the performance test results submitted December 2014 to demonstrate compliance with the emission limits.

**Monitoring/Record Keeping**

Shall keep a monthly record of the amount of raw material used to manufacture the finished product: Records are attached to the hard file of the report: April 2018: 2051 tons May 2018: 2012 tons

24 hour average for raw material feed rate to the inlet: 40 tons

Daily and Monthly Oven Dried Tons of material from EUDRYER: April 2018: 1282.5 tons May 2018: 2012 tons (Records are attached to hard file)

Number of hours of start up for EUDRYER April 2018: 60.75 hours May 2018: 17 hours

Natural Gas usage April 2018: 3.12 MM scf May 2018: 1.3 MMscf

**EU-DRIED-MATERIAL**

Description: Process equipment to handle and convey the dried and finished product materials. The facility does not operate EU-DRIED-MATERIAL unless the baghouse is operating

Emission Limits: Verified with testing every 5 years- Testing is due before December 2019

PM: 4.52 lb/hr

PM10: 4.52 lb/hr

VE: 10% Opacity

Monthly records of dried material feed rate: April 2018: 1282.5 tons May 2018: 1132.1 tons (Records are attached to the hard file of this report)

VE reading records were reviewed onsite. The facility performs daily VE observations when EU-DRIED-MATERIAL is in operation.

#### EU-GENERATOR:

Description: 275 kW natural gas emergency generator. This generator is subject to 40 CFR Part 60 Subpart JJJJ. The generator only burns natural gas. The facility is recording the hours of operation for EUGENERATOR. Operating and testing hours in April 2018: 1 Operating and Testing hours in May 2018: 1 hour

#### EU-PROCESS HEATERS

Description: Process heaters that operate in series or parallel. They further process the dried biomass from EU-DRYER into a carbonized, sized, and packaged biomass product. This process includes a natural gas fired process heater with a maximum heat input capacity of 20.5 MmBTU/hr. Emissions from EU-Process Heaters are utilized in the process heaters before exiting the shared stack. Baghouse 667 is attached to this process and is operated . This process only burns natural gas as a supplemental fuel source.

Natural Gas usage rate for EUPROCESS HEATERS: April 2018: Reactor #1: 0 MMscf Reactor #2: 0 MMscf Reactor #3: 0.5 MMscf May 2018: Reactor #1: 0.04 MMscf Reactor #2: 0 Reactor #3: 0.55 MMscf (Records are attached to the hard file)

The facility verifies PM and PM 10 emission rates from EUPROCESS HEATERS with stack testing every five years. The next test is due before December 2019.

#### FG-MATERIAL DRYING

Description: EU-DRYER produces dried material which can then be fed into EU-PROCESS HEATERS or can continue on to be processed into biomass. EU-PROCESS HEATERS is a pyrolysis process that receives dried material from EU-DRYER.

Emission limits:

PM: 11.45 lb/hr

PM10: 20.5 lb/hr

NOx: 46.2 lb/hr

CO: 23.1 lb/hr

VOC: 23.1 lb/hr

Hydrogen Chloride (HCl): 2.1 lb/hr

Visible Emissions (VE): 20%

Permittee shall verify visible, PM, PM10, NOx, CO, VOC, HCl, and methanol emission rates from FG-MATERIAL DRYING's stack once every 5 years. Testing was last performed in 2014 the facility was in compliance with all the emission limits listed above. Visible emission observations are performed once

daily during operation to verify opacity is below 20%.

FGFACILITY

Source Wide Conditions

Emission Limits:

PM: 89.9 tpy Actual Emissions (May 2018): 6.153 tpy

PM10: 89.9 tpy Actual Emissions (May 2018): 6.20 tpy

NOx: 89.9 tpy Actual Emissions (May 2018): 2.57 tpy

CO: 89.9 tpy Actual Emissions (May 2018): 1.54 tpy

VOC: 89.9 tpy Actual Emissions (May 2018): 0.085 tpy

Aggregate HAPs: less than 22.4 tpy Actual Emissions (May 2018): 0.22 tpy

Individual HAPs: Not greater than 8.9 tpy: HCl emissions (may 2018): 0.11 tpy

NCT is well below all pollutant limits, emission records are attached to the hard file of this report. At the time of my inspection it appeared National Carbon Technologies was in compliance with PTI: 24-12A and all other applicable state and federal air quality regulations.

NAME



DATE

07/25/18

SUPERVISOR

