

**DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection**

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FACILITY: Ellsworth Cutting Tools, Ltd.		SRN / ID: P1172
LOCATION: 25190 Terra Industrial Drive, NEW BALTIMORE		DISTRICT: Warren
CITY: NEW BALTIMORE		COUNTY: MACOMB
CONTACT: Ellsworth Miller, President and CEO		ACTIVITY DATE: 12/22/2020
STAFF: Adam Bogнар	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: Minor
SUBJECT: Self-Initiated Inspection		
RESOLVED COMPLAINTS:		

On Tuesday, December 22, 2020, Michigan Department of Environment, Great Lakes, and Energy-Air Quality Division (EGLE-AQD) staff, I, Adam Bogнар, conducted a self-initiated inspection of Ellsworth Cutting Tools (the "facility"), located at 25190 Terra Industrial Drive, New Baltimore, MI 48051. The purpose of this inspection was to determine the facility's compliance status with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control of Natural Resources and Environmental Protection Act, 1994 Public Act 451; and Michigan Department of Environment, Great Lakes, and Energy, Air Quality Division (EGLE-AQD) rules.

Additionally, this inspection was conducted in response to complaint No. C-21-00183 filed with the EGLE-AQD on November 24, 2020. The complainant alleges that fugitive dust particles are infiltrating inside and onto their property due to the daily activities occurring at Ellsworth Cutting Tools. The complainant further alleges that this has been an ongoing issue since last summer when an air filter was removed from Ellsworth Cutting Tools. Prior to this inspection, on December 9, 2020, I investigated the complainant's property and confirmed that there is a significant amount of fallout covering much of the property. I obtained samples of this fallout from the complainant's property.

I arrived at Ellsworth Cutting Tools at around 9:30 am. I met with Mr. Ellsworth Miller, President and CEO. I identified myself, provided credentials, and stated the purpose of the inspection. We discussed current operations and toured the facility.

Ellsworth Cutting Tools manufacturers metal cutting tools using CNC (Computer Numerical Control) machines and other tooling. Tooling manufactured at this facility includes drill bits, reamers, and bushings manufactured for industries including aerospace, automotive, food production, and mining. Materials used include cubic boron, aluminum oxide, carbide, and high-speed steel. This plant operates from Monday through Friday from 8 am to 5 pm by 20 employees.

There are approximately 50-100 cutting stations at this facility. Many of these stations are simple drill press type machines. The CNC machines utilize an oil for cooling and lubrication during cutting. Some of this oil becomes aerosolized during machining operations. This evaporative loss is a source of potential air emissions. Another air emission source is the metal particulate generated from machining operations that becomes entrained in the exhaust gases and oil mist.

Most of the machines are exhausted to the general in-plant environment. In-plant air is cleaned and recirculated by approximately 12 Smog Hogs located throughout the facility.

Smog Hogs are a three-part filtration process. Mist laden air from the CNC machines enters the Smog Hog and flows through a metal mesh filter, followed by an ionization area, and finally another metal mesh filter before being exhausted back into the plant. The ionization area causes the oil and particulate to become negatively charged. The negatively charged particles are collected on positively charged plates located in the ionization area. The positively charged plates are cleaned off periodically.

The cutting stations and CNC machines that are ventilated to the general in-plant environment appear to be exempt from Rule 201 requirements pursuant to Rule 285(2)(l)(vi)(B).

10 of the grinding machines are ventilated outdoors through cyclone, gravity style, dust collectors. There are two cyclone dust collectors that capture particulate emissions from 5 grinding stations each. Mr. Miller explained that one of the dust collectors was already in place when they bought the building. The other dust collector was installed by Ellsworth Cutting Tools. Each dust collector is equipped with a collection hopper that collects the captured dust. The dust collectors appeared to be in good working order with no apparent leaks. I did not notice any opacity coming from the dust collectors during this inspection.

These 10 grinding stations and the associated 2 cyclone dust collectors are currently operated without a Permit to Install. This equipment does not qualify for a Permit to Install exemption (Rule 285(2)(l)(iv)) since there is no fabric filter and emissions are exhausted outdoors. Operation of this equipment is a violation of EGLE Rule 201. A violation notice was sent to Ellsworth Cutting Tools seeking compliance with Rule 201.

These grinding operations are likely the largest source of PM (particulate matter) emissions from Ellsworth Cutting Tools. I collected a sample of grinding dust from the hopper beneath the dust collector. This grinding dust was analyzed by the AQD laboratory and compared to the dust collected from the complainant's property. The results of this analysis showed that the fallout at the complainant's property has very similar characteristics as the grinding dust in the hopper at Ellsworth Cutting Tools.

Both samples contained a similar profile of inorganic metals including Barium, Chromium, Copper, Lead, and Zinc. The activities conducted at the complainants property are not expected to generate these metals. These findings indicate that Ellsworth Cutting Tools is likely the source of the fallout at the complainant's property. See "S:\Air Quality Division\STAFF\Bognar, Adam\Inspection Documents\Ellsworth Cutting Tools 2021" for the laboratory results. A violation notice was sent to Ellsworth Cutting Tools seeking compliance with Rule 901.

During the summer months, 3 of the CNC machines are ventilated outdoors through a Ebbco media filtration system that captures oil and particulate. This is done to remove heat from the facility generated from the hot cutting oil. In the winter months, emissions from these CNC machines are still run through the media filter but exhausted into the general in-plant environment to provide extra heat. During this inspection the filter outlet pressure was 42 Bar.

The Ebbco media filter is located inside the building. Mr. Ellsworth stated that there previously was a dust collector located outside of the building to control these machines. The outdoor dust collector was replaced with the indoor oil/particulate filter.

I left the facility at around 10 am.

Compliance Determination

At the time of this inspection, Ellsworth Cutting Tools was not operating in compliance with EGLE-AQD Rule 201. Ellsworth Cutting Tools operated 10 grinding stations and associated cyclone style dust collectors without obtaining a permit to install from EGLE-AQD. Additionally, the sampling results discussed in this report indicate that Ellsworth Cutting Tools is the source of significant fallout at the complainant's property. A violation notice was sent to Ellsworth Cutting Tools seeking compliance with Rule 201 and Rule 901.

NAME Adam Bognar

DATE 3/2/2021

SUPERVISOR K. Kelly