UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604

DATE:	See Date of Section Chief Signature Below
SUBJECT:	CLEAN AIR ACT INSPECTION REPORT Gleason Cutting Tools Corp, Loves Park, Illinois
FROM:	Natalie Schulz, Environmental Engineer AECAB (MN/OH)
THRU:	Brian Dickens, Section Chief AECAB (MN/OH)
TO:	File

BASIC INFORMATION

Facility Name: Gleason Cutting Tools Corporation

Facility Location: 1351 Windsor Road, Loves Park, Illinois

Date of Inspection: August 16, 2021

EPA Inspector(s):
1. Natalie Schulz, Environmental Engineer
2. Karyn Defranco, Environmental Scientist

Other Attendees:
1. Thomas Sawyer, Facility Manager
2. Steven Sporleder, Maintenance Supervisor

Contact Email Address: tsawyer@gleason.com

Purpose of Inspection: To investigate emission units that emit HAP pollutants including, but not limited to, chromium, cobalt, and nickel.

Facility Type: Cutting Tools Manufacturing and Reconditioning

Regulations Central to Inspection: ROSS permit and Illinois SIP

Arrival Time: 9:30 a.m.
Departure Time: 12:15 p.m.

Inspection Type:
☒ Unannounced Inspection
☐ Announced Inspection

OPENING CONFERENCE

☒ Presented Credentials
☒ Stated authority and purpose of inspection
☐ Provided Small Business Resource Information Sheet
☒ Small Business Resource Information Sheet not provided. Reason: Not a small business.
☒ Provided CBI warning to facility

The following information was obtained verbally from Gleason Cutting Tools Corporation staff unless otherwise noted.

Process Description:
The facility has two main processes: manufacturing of new cutting tools and reconditioning of old tools. For the manufacturing of cutting tools, the raw materials, including steel and carbide, are delivered to the facility in the form of long cylindrical or rectangular rods via truck. The rods are cut to size before undergoing grinding and drilling. The material is then sent to heat treating in an electric furnace for hardening. After hardening, the material is de-burred via dry sand blasting and coated in an automatic coating machine. The facility also reconditions cutting tools by stripping the coatings with a caustic bath or, for the chrome coated tools, by pretreating, before the tool is sharpened and recoated.

Staff Interview:
There are approximately 270 employees at the facility. The facility operates 24/7, except for some holidays.

Raw material processing includes cutting, griding, and drilling. During grinding, an oil coolant runs over the material; this coolant captures the dust from the grinding. The dust is separated from the coolant with a fabric filter; the coolant is reused, and the dust is sold.

For the manufacturing of new cutting tools, there are three main process cells including: heat treating, coating, and nickel plating. Approximately 85% of all products undergo heat treating and coating. There are eight electric vacuum furnaces, with a nitrogen media, that run at approximately 2200°F for heat treating and tempering parts. No chemicals are used in the heat treatment process. The heat treatment furnaces run for about 16 hours. The tempered furnaces run for about 24 hours. The tempered furnaces draw in air from atmosphere. No coating is applied before the material goes through the furnaces. There are dry sand blasting machines to de-burr the tool before coating, in addition to ultrasonic cleaning.

The coating process takes between four to twelve hours; it is an automated process conducted in a negative pressure environment. There are five coating machines that are held at about 450°C. Nitrogen is used in the cooling process. Several different coatings are applied including aluminum nitrite and titanium nitrate.

Approximately 1% - 2% of products are nickel-plating. The nickel-plating process occurs in the plating lab where nickel is mechanically applied to the part through an electroless and electrolytic process. A sulfuric acid rinse is used to clean the surface before the part is sent to the electroless tanks. The electroless tanks are heated to 180°F, and the electrolytic tanks are heated to 130°F. In addition to nickel, a reducing agent and other additives are used in the process. The facility has 18 electrolytic baths and three electroless baths.

For the reconditioning of cutting tools, the tool is first stripped to remove the coating. The stripping is a caustic bath for the high-speed steel products or a pretreatment for the chrome products with sulfuric acid followed by a caustic bath. The tool is then conditioned and sharpened before being re-coated.

There are no scrubbers or baghouses at the facility and all emissions vent to atmosphere. There are internal dust collectors on some machinery.

The facility has a third-party environmental consultants, Fehr Graham, contracted. Fehr Graham calculates and prepares the facility's emission reports. Fehr Graham has conducted internal inspections for the facility's indoor air quality. The facility is registered under the Illinois EPA Registration of Small Sources (ROSS) program.

TOUR INFORMATION

EPA Tour of the Facility: Yes

Data Collected and Observations:
Inspectors observed the manufacturing process from the start to finish, including the raw materials, the cutting and grinding areas, the heat treatment process, the coating machines, the nickel plating operation, and the waste material storage.

Photos and/or Videos: were not taken during the inspection.

Field Measurements: were not taken during this inspection.

CLOSING CONFERENCE

☒ Provided U.S. EPA point of contact to the facility

Requested documents:

- Air permit
- Internal air quality inspections reports
- Emission calculations and reports for past three years
- SDS sheets for nickel plating process, coatings, and stripping
- Refrigerant leak history/repair log for past three years

DIGITAL SIGNATURES

Report Author: NATALIE SCHULZ Digitally signed by NATALIE SCHULZ Date: 2021.09.07 16:49:01 -05'00'

Section Chief: Brian Dickens Digitally signed by Brian Dickens Date: 2021.09.08 06:43:59 -05'00'