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

N793338402

FACILITY: Orchid Orthopedic Solutions Plant C		SRN / ID: N7933
LOCATION: 1365 N CEDAR ST, MASON		DISTRICT: Lansing
CITY: MASON		COUNTY: INGHAM
CONTACT: James Belloli, EHS Specialist		ACTIVITY DATE: 11/07/2016
STAFF: Daniel McGeen	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MINOR
SUBJECT: Unannounced scheduled inspection of facility which was last inspected by AQD in 2009. Building C is at this site.		
RESOLVED COMPLAINTS:		

On 11/7/2016, the Michigan Department of Environmental Quality (DEQ), Air Quality Division (AQD) conducted an unannounced, scheduled inspection of Orchid Orthopedic Solutions Plant C, a facility which was last inspected on 7/30/2009.

Environmental contact:

James Belloli, EHS Specialist; 517-694-2300, ext. 10158; [james.belloli@orchid-ortho.com](mailto:james.belloli@orchid-ortho.com)

Facility description:

Orchid Orthopedic Solutions Plant C manufactures joint replacement parts for hips, spinal parts, and the top and underside of knees. Building C is located at this site. The activities done at this site are metal machining, and inspection of products.

Emission units:

Bldg. ID	Emission Unit ID*	Emission unit description	Permit no. or exemption rule	Compliance status
C	Various Computer Numerical Controlled (CNC) machines	Metal working processes which are enclosed, and do not exhaust outdoors.	Rule 285(I)(vi) (B)	Compliance
C	Enclosed shot blaster with cyclone and dry filter	Zero Blast cabinet, with cyclone and dry filter, exhausting indoors.	Rule 285(I)(vi) (B)	Compliance
C	Rotary shot blaster with bag filter system	Shot blaster for multiple parts at one time, with bag filter control system	Rule 285(I)(vi) (B)	Compliance
C	"Clean Etch" process	"Clean Etch" process using hydrofluoric acid, controlled by a scrubber, which exhausts outdoors.	Rule 290	Noncompliance

\*An *emission unit* is any part of a stationary source which emits or has the potential to emit an air contaminant.

Regulatory overview:

This facility is considered to be a true minor source, rather than a major source of air emissions. A *major source* has the potential to emit (PTE) of 100 tons per year (TPY) or more, of one of the criteria pollutants. *Criteria pollutants* are those for which a National Ambient Air Quality Standard exists, and include carbon monoxide, nitrogen oxides, sulfur dioxide, volatile organic compounds (VOCs), lead, particulate matter smaller than 10 microns, and particulate matter smaller than 2.5 microns. It is also considered a minor or area source for Hazardous Air Pollutants (HAPs), because it is not known to have a PTE of 10 TPY or more for a single HAP, nor to have a PTE of 25 TPY or more for combined HAPs.

This facility has no permits to install. It has metal working equipment which may be considered exempt under Rule 285(I)(vi), and a "Clean Etch" process with scrubber, which may be considered exempt under Rule 290.

**Fee status:**

This facility is not a Category I fee subject source, because it is not a major source for criteria pollutants. It is not a Category II fee-subject source because it is not a major source for Hazardous Air Pollutants (HAPs), nor is it subject to federal New Source Performance Standards. Additionally, it is not Category III fee-subject, because it is not subject to federal Maximum Achievable Control Technology standards. The facility is not required to submit an annual air emissions report via the Michigan Air Emissions Reporting System (MAERS).

**Location:**

Building C is at this site. Buildings A and B are one block to the north, at Orchid Orthopedic Solutions Plants A and B, at 1489 Cedar Street. That site has its own State Registration Number (SRN), N5391. The surrounding area is a mix of residential, industrial, and commercial properties. To the north by about 240 feet are two residences, which are followed by commercial and industrial facilities. To the southwest by roughly 540 feet is a residence. To the south by approximately 100 feet is an industrial facility, with a small residential neighborhood about 1,200 feet further south. To the east by about 300 feet are several small businesses, with a lake and undeveloped land beyond that.

**Recent history:**

This facility was last inspected by AQD on 7/30/2009. There are no known air pollution complaints for this facility. This company has previously been identified by the name Orchid Stealth Orthopedic Solutions, in the AQD files.

**Arrival:**

This was an unannounced inspection. I had just inspected Orchid Orthopedic Solutions Plant C (SRN N5391), documented in a separate activity report, before coming here. I was accompanied by the company's environmental contact, Mr. James Belloli, EHS Specialist. He indicated I was welcome to inspect their facilities, and advise them of any air requirements which might apply.

We arrived at Plant C around 12:30 PM. There were no visible emissions or odors detectable from the facility. Weather conditions were sunny and 65 degrees F, with winds out of the south at roughly 5 miles per hour (mph).

AQD is not currently handing out copies of the DEQ brochure *Environmental Inspections: Rights and Responsibilities*, during inspections, because the brochure is undergoing revision. I did, however, provide a copy of the DEQ card on the federal Boiler National Emissions Standards for Hazardous Air Pollutants (NESHAP) regulations, 40 CFR Part 63, Subparts DDDDD and JJJJJJ.

**Inspection:**

Various Computer Numerical Controlled (CNC) machines; Rule 285(I)(vi)(B):

There were a number of CNC machines, which were enclosed. They appeared as if they would satisfy the exemption criteria under Rule 285(I)(vi)(B) for metal working processes which exhaust into the general, in-plant environment. There were no visible emissions that I could detect coming from these units.

Enclosed grit blaster with cyclone and filter, Rule 285(I)(vi)(B):

We observed a brand of grit blaster, a Zero Blast Cabinet, which was not running at the moment. It appeared to be a shot blasting process, with a cyclone and a dry filter system. The area where the blasting occurs was enclosed. I was informed that the unit cleans one part at a time. The process appeared as if it would satisfy the Rule 285(I)(vi)(B) exemption criteria for a shot blasting process exhausting to the in-plant environment.

**Rotary blaster with bag filter system; Rule 285(l)(vi)(B):**

We observed a Progressive Technologies rotary blaster, for blast cleaning multiple parts at one time. It is my understanding that the system exhausts through a bag filter to the in-plant environment.

**"Clean Etch" process with scrubber; Rule 290:**

I was shown a "Clean Etch" process (described in the 2009 inspection report as a chemical milling process), which uses hydrofluoric acid. It is controlled by a scrubber which exhausts outdoors.

The scrubber nameplate indicates that it was manufactured by North American Air Products, Inc., and is Model VFSB-203-3K-SIC-NH#30. Pressure drop was 0.0" water column (w.c.), and water flow rate through the unit was 0.2 gallons per minute (gpm) at this time. There was a sight glass on the side of the scrubber which showed that there was water flowing through the unit.

Mr. Belloli and I walked around the outside perimeter of the plant, and found that there were no odors detectable. There were no visible emissions that could be seen from the stack for the North American Air Products, Inc. scrubber, at 12:53 PM. Weather conditions were sunny and about 65 degrees F, with winds out of the south, at roughly 5 mph.

According to the 2009 inspection report, the company was planning to use a spreadsheet to track hydrofluoric acid emissions under Rule 290(a)(ii)(A). The initial threshold screening level (ITSL) of hydrofluoric acid was described at that time as 10 micrograms per cubic meter, and Rule 290(a)(ii)(A) allows for the emission of noncarcinogenic air contaminants with an ITSL greater than 2.0 micrograms per cubic meter, where controlled emissions are less than 500 lbs per month, and records are kept.

Note: Currently the annual ITSL for hydrofluoric acid is listed on the AQD website, in the Michigan Air Toxics System Initial Threshold Screening Level/Initial Risk Screening Level (ITSL/IRSL) Toxics Screening Level Query, as 14 micrograms per cubic meter. The hourly ITSL is listed as 240 micrograms per cubic meter.

I asked if the facility has been keeping records of estimated monthly controlled emissions of hydrofluoric acid, pursuant to Rule 290. I was advised that they were not aware of the requirement. The last AQD inspection here, in 2009, touched on Rule 290(a)(ii)(A), but there have been personnel changes at the company over the years, and so awareness of the requirement may have been lost.

Note: Rule 290 was revised on 12/20/2016, several weeks after this inspection. The version of Rule 290 in use from 1997 until 12/20/2016 applies to the "Clean Etch" process and scrubber, because that version was concurrent with their installation.

**Rule 290 (a)(ii)(A) requires:**

Rule 290. The requirement of R 336.1201(1) to obtain a permit to install does not apply to any of the emission units listed in (a) if the conditions listed in (b), (c), and (d) are met. Notwithstanding the definition in R 336.1121 (a), for the purpose of this rule, uncontrolled emissions are the emissions from an emission unit based on actual operation, not taking into account any emission control equipment. Controlled emissions are the emissions from an emission unit based on actual operation, taking into account the control equipment.

(a) An emission unit which meets any of the following criteria:

(i) Any emission unit that emits only noncarcinogenic volatile organic compounds or noncarcinogenic materials which are listed in R 336.1122(f) as not contributing appreciably to the formation of ozone, if the uncontrolled or controlled emissions of air contaminants are not more than 1,000 or 500 pounds per month, respectively.

(ii) Any emission unit that the total uncontrolled or controlled emissions of air contaminants are not more than 1,000 or 500 pounds per month, respectively, and all of the following criteria are met:

(A) For noncarcinogenic air contaminants, excluding noncarcinogenic volatile organic compounds and noncarcinogenic materials which are listed in R 336.1122(f) as not contributing appreciably to the formation of ozone, with initial threshold screening levels greater than or equal to 2.0 micrograms per cubic meter, the uncontrolled or controlled emissions shall not exceed 1,000 or 500 pounds per month, respectively.

**Rule 290(b), (c), and (d) require the following:**

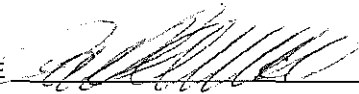
- (b) A description of the emission unit is maintained throughout the life of the unit.
- (c) Records of material use and calculations identifying the quality, nature, and quantity of the air contaminant emissions are maintained in sufficient detail to demonstrate that the emissions meet the emission limits outlined in this rule.
- (d) The records are maintained on file for the most recent 2-year period and are made available to the air quality division upon request.

**Because the company had not been keeping records of hydrofluoric acid emissions for the most recent two-year period, they did not at present satisfy the exemption criteria for Rule 290. The options to resolve this were to apply for a permit to install, or to keep records in accordance with Rule 290(a)(ii)(A). For recordkeeping, the company could choose to either track monthly emissions, or determine the production levels they could reach without exceeding an estimated 500 lbs of controlled hydrofluoric acid emissions per month, for the process exempt under Rule 290(a)(ii)(A).**

I left the facility at about 1:20 PM.

**Conclusion:**

The facility appeared to be clean and neat. The one instance of noncompliance which was identified was the lack of recordkeeping for Rule 290 for controlled emissions of hydrofluoric acid from the "Clean Etch" process. This constituted a violation of Rule 290, and a VN will be sent.

NAME 

DATE 2/13/2017

SUPERVISOR 