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Genesee

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

B735542774

FACILITY: STOKES STEEL TREATING CO		SRN / ID: B7355
LOCATION: 624 KELSO ST, FLINT		DISTRICT: Lansing
CITY: FLINT		COUNTY: GENESEE
CONTACT: Robb Stokes, President		ACTIVITY DATE: 12/18/2017
STAFF: Daniel McGeen	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Unannounced, multi-media inspection conducted with WRD, RRD, WMRPD, and City of Flint WPC to try to identify origin of PFOS found in nearby Gilkey Creek.		
RESOLVED COMPLAINTS:		

On 12/18/2017, an unannounced, multi-media inspection was conducted of Stokes Steel treating Company (Stokes Steel) by the Michigan Department of Environmental Quality (DEQ). Divisions represented were the Air Quality Division (AQD), Water resources Division (WRD), Waste Management & Radiological protection Division (WMRPD), and Remediation & Redevelopment Division (RRD), along with the City of Flint Water Pollution Control (WPC). The purpose was to try to identify the origin of detectable levels of perfluorooctane sulfonate (PFOS) found in nearby Gilkey Creek.

Perfluoroalkyl and polyfluoroalkyl substances (PFAS), such as PFOS, are part of a group of chemicals used globally during the past century in manufacturing, firefighting and thousands of common household and other consumer products. PFAS and PFOS are perfluorinated compounds (PFCs), and are emerging contaminants of concern.

Environmental contact::

Robb Stokes, President; 810-235-3573; [RStokes@StokesSteel.com](mailto:RStokes@StokesSteel.com)

Ted Stokes, Treasurer; 810-235-3573

Facility description:

This facility conducts heat treating of steel parts, in natural gas-fired integral quench furnaces, and natural gas-fired pusher furnaces. They do not make any products, just harden them, AQD has been informed. .

Emission units:

Emission unit* ID	Emission unit description	Permit to Install No. or exemption	Operating status
EU-T-900	T-900, natural gas-fired integral quench furnace, 1.2 MMBtu/hr	143-03	Compliance
EU-T-950	T-950, natural gas-fired integral quench furnace, 1.2 MMBtu/hr	143-03	Compliance
EU-T-1000	T-1000, 1.2 MMBTU/hr, natural gas-fired integral quench furnace, 1.2 MMBtu/hr	143-03	Compliance
EU-P-4	P-4, natural gas-fired pusher furnace, 2 MMBtu/hr	143-03	Compliance
EU-P-30	P-30, natural gas-fired pusher furnace, 1.5 MMBtu/hr	143-03	Compliance
4 parts washer	4 parts washers using water-based solution	Rule 285(l)(iii) or 285(r)(iv)	Compliance
Tempering furnace	Tempering furnace, natural gas-fired	Rule 282(a)	Compliance
Anhydrous ammonia tank	Anhydrous ammonia tank 500 gallons in capacity	Rule 285(2)(j)	Compliance

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

Regulatory overview:

This facility is classified as a *minor source* for particulate emissions, because it does not have the Potential to Emit (PTE) to be a major source of criteria pollutants. *Criteria pollutants* are those for which

a National Ambient Air Quality Standard exists; carbon monoxide, nitrogen oxides, sulfur dioxide, volatile organic compounds, particulate matter smaller than 10 microns in diameter, particulate matter smaller than 2.5 microns in diameter, and lead. The facility operates under Permit to Install (PTI) No. 143-03. It also has parts washer and a natural gas-fired tempering furnace, which may qualify for existing permit exemptions.

Based on past discussions with plant management, this facility does not appear to be subject to the federal regulation 40 CFR Part 63, Subpart XXXXXX (6X), *National Emissions Standards for Hazardous Air Pollutants Area Source Standards for Nine Metal Fabrication and Polishing Source Categories*, because they do not engage in metal fabrication or polishing activities.

#### Location:

The facility is located in an industrial area of Flint, with industries to the immediate north, south, and east. To the west, on the other side of Commerce Street, are various businesses. The nearest residences appear to be located over 1,000 feet to the west.

#### Fee status:

This facility is not considered fee-subject, for the following reasons. Because it is not a major source for criteria pollutants, it is not classified as Category I. Additionally, because it is not a major source for Hazardous Air Pollutants (HAPs), and is not subject to federal New Source Performance Standards, it is not classified as Category II. Finally, because it is not subject to federal Maximum Achievable Control Technology standards, it is not classified as Category III. The facility is not required to submit an annual air emissions report via the Michigan Air Emissions Reporting System (MAERS).

#### History:

Stokes Steel Treating Company was built in 1952, AQD has been advised, and was the first building on Kelso Street.

Previous AQD inspectors Robert Lamrouex and Brad Myott, who visited this site in 2003 and 2007, respectively, have discussed with the company the recordkeeping requirements of PTI No. 143-03. AQD and the company have agreed that the permit, as written, does not allow for simple compliance demonstration. R. Lamrouex discussed these issues with the AQD Permits Section, but no resolution was found, and no changes were made to the permit conditions.

The most recent inspection by AQD was conducted on 10/9/2014. The facility was found to be in compliance.

#### Arrival:

Multiple DEQ staff met in the Stokes Steel parking lot, arriving at approximately 9:28 AM north of the site, in an unpaved lot. We met with Mr. Tom Hutchins of the City of Flint, from Flint Water Pollution Control (WPC). He is an industrial pretreatment program inspector. Government staff present were as follows:

- City of Flint, Water Pollution Control (WPC): Tom Hutchins
- DEQ, Water Resources Division (WRD): Carla Davidson, Charles Bennett, and Brian Zuber
- DEQ, Remediation & Redevelopment Division (RRD) staff: Paul Bucholtz and Jim Innes
- DEQ, Waste Management & Radiological Protection Division (WMPRD): Bryan Grochowski and Nathan Hude
- DEQ, Air Quality Division (AQD): myself

Weather conditions were lightly raining and 40 degrees F, with winds out of the southwest at 10 miles per hour. No visible emissions were seen from the plant upon arrival. There was a distinct and definite scent of hot oil next to the plant, but I did not detect it offsite.

We entered the facility, and provided our identification/credentials, per DEQ procedure. We met with Mr. Robb Stokes, President, and Mr. Ted Stokes, Treasurer. DEQ staff explained the reason for our visit, to conduct inspections on behalf of the various government agencies we represented, and to try to identify the source(s) of the PFOS and PFAS present in Gilkey Creek.

It is my understanding that there was a fire at Stokes Steel in 2006, and fire fighters from Bishop International Airport responded, providing some 50 gallons of fire fighting foam. We discussed the possibility that this foam may have contained PFOS. We were advised that the foam stayed in p its onsite and was removed by Youngs Environmental. Onsite fire extinguishers have never been used, we were told. A safety Data Sheet (SDS) was requested by other DEQ division staff for the foam in these fire extinguishers.

We also discussed other possible sources of PFOS in the area.

We were told that for rinsing metal parts, they only use city water here. They once used an additive, but the additive did not appear to work, and was discontinued.

### Inspection:

#### Heat treating lines, PTI No. 143-03:

Heat treating lines in the plant were running, at the time of the inspection. The integral quench furnaces can also be described as batch furnaces. They have 3 of these onsite, and all were running at this time. They have 2 remaining pusher furnaces, and both of these were operating, today. The furnaces all exhaust into the general, in-plant environment. There are large vents in the roof and at the top of the walls for general facility ventilation.

Parts to be treated enter the furnaces through doors at one end. A flame curtain is used, when doors are open, to maintain an oxygen-free environment inside the furnace. Once the doors are closed, the parts are heated to the appropriate temperature, for the desired amount of time. The furnace part of the process is separated from the oil quench part of the process by doors, to avoid the oil quench area getting exposed to excess heat. After the heat treating is done, a door opens, and the parts are moved to the quench area. The parts do not enter the oil until this door is closed.

As described by AQD's B. Myott in the 2007 inspection activity report: *The quench area does have an explosion safety vent that emits some minor emissions while the door between the burner area and the quench area is opened. This is necessary because as the door opens from the oxygen-starved burner area it allows any oxygen that is in the quench area to come in contact with the oxygen-free atmosphere which causes immediate ignition. This ignition would cause an explosion if not for the safety vent. Because there are emissions at this point, quench oil in particulate form might be emitted.*

The parts are then lowered into an oil bath to be quenched. After the appropriate amount of time, they are lifted out of the bath, and allowed to drain. When the door from the quench area opens, there is a flame curtain to maintain the oxygen free atmosphere inside the process. The parts then leave the furnace, and the door closes behind them. Quench oil may drip onto the floor or conveyors. Clay litter is used to adsorb tracked out oil. The clay litter is eventually shoveled up, for disposal.

The oil levels in quench oil tank for each furnaces are filled as needed. The amount of oil added does not actually represent what is emitted to atmosphere, because of the drag out of oil onto the floor/litter. There appears to be no feasible way to measure what is lost to drag out.

Temperature of the P-4 push furnace appeared to be 1,600 degrees F at this time.

Dark smoke, with an instantaneous opacity of 10-15% was visible for a minute around the door of one furnace, inside the plant. This quickly dropped to 0% opacity. It did not appear as if it would exceed 20%, over a 6-minute average. Outside at 10:43 AM, there were no visible emissions coming from the plant.

**Anhydrous ammonia storage tank; Rule 285(2)(j):**

The anhydrous ammonia tank was said to be 500 gallons in capacity. Rule 284 (2)(j) exempts from the requirement to obtain a permit to install anhydrous ammonia storage tanks of no more than 500 gallons in capacity. N. Hude and I examined the ammonia tank while waiting in the parking lot for other DEQ staff. There were no odors nor any visible emissions coming from the tank.

**4 parts washer;s Rule 285(r)(iv):**

The facility receives parts with an oil coating. The parts are washed prior to heat treating. The parts washers exhausts to the general plant environment, and therefore appear to meet the exemption criteria of Rule 285(r)(iv).

**2 tempering furnaces; Rule 282(a)(i):**

It is my understanding that parts which are heat treated and quenched also undergo tempering, in two tempering furnace. Because parts are washed to remove oil prior to tempering, these processes appear to satisfy the Rule 282(a)(i) exemption criteria.

**Miscellaneous:**

There was a large propane tank out back. No propane odors were detectable, nor any visible emissions.

**Sampling activities:**

Please refer to WRD and RRD files for 12/18/2017 for information on sampling which was conducted for PFOS and/or PFAS.

**Conclusion:**

No instances of noncompliance with air quality requirements were identified during the inspection. We left the site at 12:25 PM.

NAME



DATE



SUPERVISOR

