

B6088
FY 2017 Insp.

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Self Initiated Inspection

B608841522

FACILITY: SUPERIOR MATERIALS, INC.		SRN / ID: B6088
LOCATION: 44922 GRAND RIVER, NOVI		DISTRICT: Southeast Michigan
CITY: NOVI		COUNTY: OAKLAND
CONTACT:		ACTIVITY DATE: 09/08/2017
STAFF: Iranna Konanahalli	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: FY 2017 inspection of Superior Materials, Inc.		
RESOLVED COMPLAINTS:		

Superior Materials, Inc. (B6088)
44922 Grand River Ave.
Novi, Michigan 48375-1012

Phone: 248-349-3500

Rule 336.1289 transit-mix concrete batch plant (about 130,000 cubic yards per year less than 200,000 cubic yards per year exemption limit) – nuisance dust source.

Name change (CY 2011): Spartan Concrete, Inc. (B6088) → Superior Materials, Inc. (B6088)

Not Subject to: NESHAP/ MACT T, area source National Emission Standards for Hazardous Air Pollutants: Halogenated Solvent Cleaning (40 CFR, Part 63, Subpart T; NESHAP/ MACT T); Correction; 29484 Federal Register / Vol. 60, No. 107 / Monday, June 5, 1995 / Rules and Regulations; amended National Air Emission Standards for Hazardous Air Pollutants: Halogenated Solvent Cleaning (40 CFR, Part 63, Subpart T); Final Rule; Page 25138 Federal Register / Vol. 72, No. 85 / Thursday, May 3, 2007 / Rules and Regulations. Superior Materials does not use halogenated solvents as indicated by MSDS.

On September 08, 2017, I conducted a level 2 self-initiated FY 2017 inspection of Superior Materials, Inc. ("Superior"), fka Spartan Concrete, Inc. ("Spartan"), a transit-mix concrete batch plant, located at 44922 Grand River Ave., Novi, Michigan 48375-1012. The inspection was conducted to determine compliance with the requirements of federal Clean Air Act; Article II, Air Pollution Control, Part 55 of Act 451 of 1994; and Michigan Department of Environmental Quality, Air Quality Division (MDEQ-AQD) administrative rules.

The inspection is a result of previous complaints regarding excessive dust and the plant being large-scale producer of concrete (about 130,000 cubic yards per year).

Two Superior Materials' plants and one Prairie Materials' plant merged in October 2010. One Superior's plant located in Novi shut down. Prairie bought US Concrete. E. C. Levy (50%) and Prairie (50%) formed a joint venture and started doing business as Spartan Concrete until CY2011. Since then, Spartan is known as Superior Materials (2011).

During the inspection, Mr. Tom Webber (Cell: 810-2174501), Plant Operator, and Tim Marcus (Cell: 248-420-9575;), Yard Mechanic, assisted me.

Mr. Mike Grover (Cell: 810-560-1203; E-mail: maGrover@SuperiorMaterials.net), Area Manager, was not present.

Mr. Jeffrey Mattack, manager, then Spartan Concrete, Inc., Novi, joined back Ann Arbor plant in February 2012 although he separated in December 2010.

During FY2017, I observed practically clean paved yard (swept yesterday, Thursday, and regular schedule is Mondays and Thursdays, changed in CY 2017 from Tuesdays and Fridays); very little materials such as sand, spilled all over the yard, which is entirely concrete-paved although substantially broken. Concerning the broken paved yard, concrete batch plants have ability to pave a section at a time with unused concrete from returning trucks. In September 2017, part of the yard is being torn down for replacement with new concrete.

Superior (about 130,000 < 200,000 cubic yards per year) is exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1289 subject to the following conditions:

- (i) The plant shall produce not more than 200,000 cubic yards per year.
- (ii) The plant shall use either a fabric filter dust collector, a slurry mixer system, a drop chute, a mixer flap gate, or an enclosure for truck loading operations.
- (iii) All cement handling operations, such as silo loading and cement weighing hoppers, shall either be enclosed by a building or equipped with a fabric filter dust control.
- (iv) The owner or operator shall keep monthly records of the cubic yards of concrete produced.
- (v) Before commencing operations, the owner or operator shall notify the appropriate air quality division district supervisor of the location where the concrete batch plant will be operating under this exemption.
- (vi) The concrete batch plant shall be located not less than 250 feet from any residential or commercial establishment or place of public assembly unless all of the cement handling operations, excluding the cement silo storage and loading operations, are enclosed within at least a 3-sided structure.
- (vii) The owner or operator shall implement the fugitive dust plan described in the Rule 336.1289

Superior's (fka Spartan) transit-mix concrete batch plant was installed in 1968 (not grandfathered because it was installed after 1967). I gave a copy the above conditions to Mr. Mattack for his guidance regarding the operation of the plant (CY2006). Also, I asked him to follow Rule 289 work-practice methods to control dust.

Entire Superior's yard is paved with concrete although broken in many places. Superior sweeps the yard twice per week. Spartan used to own Tenant 355 Sweeper; according to Mr. Webber; Tenant is still present. However, now a contractor (Rolar Property Services of Troy) sweeps twice a week: Mondays and Thursdays.

The materials, such as aggregates, gravel, limestone, sand, etc., are stored in the open storage bins. The materials are brought to the grates using a front-end loader. From the grates, materials are transported using an enclosed conveyor to weigh scales, from which they are conveyed (enclosed) to a transit mix concrete truck.

Cement, fly-ash and steel mill slag are stored in the three separate elevated silos:

1. One 450,000-pound cement silo (72 bags, shaker)
2. One 140,000-pound fly-ash silo (54 bags, shaker)
3. One 240,000-pound split silo (each of two split silos: 54 bags, shaker): 120,000-pound slag one-half silo and 120,000-pound Type-2 cement one-half silo. Each split has its own dedicated baghouse (2).

Hence there are four silo bags. Only slag baghouse bags were replaced about August 2015 and all other bags were found in good condition in 2015. However, in October 2016 all bags for four silo baghouses (see above for silos) were replaced and in June 2017 all bags for transit-mix area baghouse were replaced. The bags are replaced on as needed basis based upon a maintenance inspection.

The materials flow into a transit mix truck by gravity. A requisite amount of water (steam or hot water in winter) is also added simultaneously.

Each of three silos is equipped with its own baghouse. There are 72 bags per cement silo and 54 bags in each of flyash silo and split silo. The bags are cleaned using shaker mechanism. Transit-Mix loading area baghouse has 72 bags; it uses pulse-jet mechanism to clean bags unlike silo baghouses. Hence, there are grand total of five (5) baghouses: four (4) for silos and one (1) for transit-mix area.

A transit mix truck

The materials are transported using an enclosed conveyor to a truck. The truck opening area, where materials are poured, is equipped with an enclosure. The emissions from the enclosure are captured and ducted to a dry filter system, which is started automatically when a materials conveyor belt is started. Transit-Mix loading area baghouse has 72 bags; it uses pulse-jet mechanism to clean bags.

I observed a transit mix truck being loaded with cement, flyash, slag and water. I did not see any dust issues during the inspection: all dust due to truck loading was captured and the baghouse was working properly.

On April 19, 2012, I observed pneumatic loading of silos from a Portland Cement truck. Again, on October 30, 2015 and July 28, 2017, I observed pneumatic loading of silos from a Portland Cement truck. I did not see any visible emissions during the loading of cement silo indicating proper operation of silo baghouses.

During my observations of loading of Transit-Mix trucks, I did not see any visible emissions confirming proper operation of the enclosure (a dust capture device) and a 72-bag baghouse that serves the truck loading.

Concrete materials production (cubic yards per year):

1. CY2011: 119,824
2. CY2012: 127,809
3. CY2013: 126,820
4. CY2014: 112,521
5. CY2015: 129,985
6. CY2016: 134,883

Transit-Mix truck rinsing

Transit-Mix trucks are rinsed before they leave the property to control fugitive dust. Washing protects trucks as well from corrosion (brand new truck in 2015 costs about one quarter a million dollars). City water with truck wash detergent (contains HCl) is used. There are four (4) settling ponds. Each pond settles out suspended particulate matter. While fourth pond contains the cleanest water, first pond contains dirtiest water. Water flows via gravity (level gradient) from fourth to first pond while suspended particulate settles: fourth containing largest particle size and first containing smallest particle size. Truck washed dirtiest rinse water goes to fourth pond. To first pond fresh city water is added on as needed basis. First pond water is used in concrete production.

A cold-cleaner

There is one maintenance 3 feet x 4 feet cold-cleaner. Each cold-cleaner is subject rule 336.611 or 336.1707 (new) depending on if it is new or existing. A cold-cleaner is exempt from Rule 336.1201 pursuant to Rule 281(2)(h) or Rule 285(2)(r)(iv). Existing cold cleaners were placed into operation prior to July 1, 1979. New cold cleaners were placed into operation on or after July 1, 1979.

The cold-cleaner is of tank-on-drum type. The solvent is stored in 55-gallon drum (solvent reservoir) and pumped to the tank for cleaning.

As the cold-cleaner was installed in 2004 (after July 1, 1979), it is a new cold-cleaner. I found the cold-cleaner open when not in use in 2006; I asked Mr. Mattack to ensure that the cold-cleaner is kept closed at all times when idled. On December 13, 2006, I gave Mr. Mattack a copy of DEQ's "cold-cleaner operating procedures".

Again, in September 2014, I gave DEQ cold-cleaner decals to Mr. Webber as previous decals were dirty. Vesco Oil services the cold-cleaner. It is equipped with mechanically assisted lid.

During the inspection, mechanically assisted lid was closed and the procedures were posted.

Vesco Oil Corporation of Southfield. VIC SOL Mineral Spirits (reclaimed)

100% VOC solvent. Flash Point (FP) = 108 °F TCC. Auto Ignition = 490 °F. Boiling Point (BP) = 315-390 °F @ 760 mm Hg. Vapor Pressure (VP) = 10 mm Hg at 100 °F. Specific Gravity (SG, Water = 1.0) = 0.79. Density (ρ) @ 68 °F = 6.59 lbs. / gallon (0.790 kg /L). Flammability range = 1 %v (LEL) – 7%v (UEL). Viscosity = 1 centistokes at 77 °F.

Conclusion

Follow-up inspection is necessary due to fugitive dust problem.

NAME *Helenanahall* DATE *09/18/2017* SUPERVISOR *Joyce B*