

A7757
MANILA

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

A775754901

FACILITY: U S SILICA CO	SRN / ID: A7757
LOCATION: 20837 N HURON RIVER DR, ROCKWOOD	DISTRICT: Detroit
CITY: ROCKWOOD	COUNTY: WAYNE
CONTACT: Mike Dorsey , Plant Manager	ACTIVITY DATE: 09/01/2020
STAFF: Todd Zynda	COMPLIANCE STATUS: Compliance
SUBJECT: September 1, 2020 Inspection	SOURCE CLASS: SM OPT OUT
RESOLVED COMPLAINTS:	

REASON FOR INSPECTION: Scheduled Inspection

INSPECTED BY: Todd Zynda, AQD

PERSONNEL PRESENT: Mike Dorsey, Plant Manager; David Olchawa, Senior Manager, Environmental Programs; Deb Perkins, Regional Environmental Manager; Mr. Shane Spor, Operations Superintendent

FACILITY PHONE NUMBER: 734-379-9672

FACILITY FAX NUMBER: 734-379-4990

FACILITY WEBSITE: www.ussilica.com

FACILITY BACKGROUND

U.S. Silica (USS) produces whole grain silica that is used in end markets for glass production or building products. The site has been in operation under various company names, since 1904. USS property encompasses approximately 750 acres, of which only 5 to 10 acres are operating for silica production. The facility currently has 23 employees and operates 24 hours a day, 5 days a week. Weekends are added as needed.

USS receives raw material from the Sylvania Mine located in Monroe County. USS's quarry last produced raw material in the late 1990's.

Facility operations are permitted under Permit to Install (PTI) 150-08E. The sand dryer at the facility is subject to 40 Code of Federal Regulations (CFR) Part 60, Subpart UUU – Standards of Performance for Calciners and Dryers in Mineral Industries.

OUTSTANDING CONSENT ORDERS

None

VIOLATION NOTICES

During 2020 there have been 12 complaints regarding fallout from USS in the Crystal Crossing subdivision. As a result of the complaint investigations conducted on April 20, May 5, May 8, and June 5, 2020, a violation notice was issued on August 7, 2020 to the facility for violation of Rule 901(b) – “Detection of fallout beyond the facility's property line, attributable to the facility, of sufficient magnitude as to constitute an unreasonable interference with the comfortable enjoyment of life and property.”

On August 26, 2020, a response from the facility was received. Within the response USS states that the following corrective measures have been taken: installation of sprinkler in silo area, application of dust suppressant, installation of sprinklers on water truck, and installation of sprinkler on stacker. While the above actions are the steps in the correct direction in mitigating fugitive dust, the violation notice has not been resolved at this time. The AQD is continuing to monitor the situation in regard to offsite impacts and complaints from residents prior to fully resolving the violation notice dated August 7, 2020.

INSPECTION NARRATIVE

On September 1, 2020, AQD staff, Todd Zynda, conducted an inspection of USS located at 20837 North Huron River Drive in Rockwood, Michigan. The purpose of the inspection was to determine compliance with the Federal

Clean Air Act; Article II, Part 55, Air Pollution Control of Natural Resources and Environmental Protection Act, 1994 Public Act 451; Michigan Department of Environment, Great Lakes, and Energy, Air Quality Division (EGLE-AQD) Rules; and the conditions of PTI 150-08E.

During the inspection, Mr. Mike Dorsey, Plant Manager, Mr. David Olchawa, Senior Manager, Environmental Programs, Ms. Deb Perkins, Regional Environmental Manager, and Mr. Shane Spor, Operations Superintendent, provided information and a tour of facility operations.

During the opening meeting, the current status of PTI subject equipment and record keeping requirements were discussed. Requested records were provided at this time.

During the opening meeting, the recent complaints (April, May, June 2020) were discussed. The facility provided at response on August 26, 2020 to the violation notice dated August 7, 2020. According to the facility response and discussion during the opening meeting, the facility has taken additional measures to help mitigate offsite dust migration. Upon arriving at the facility water sprinklers were observed along the entrance road. There also has been significant improvement in the management of dust in the parking area and area where trucks leave the scales. During the previous site visit on June 5, 2020 these areas were observed with significant track out and were not wet. According to the facility there has been a significant change in the operation of the dredge area. Apparently, the contractor managing the dredge area was stock piling material (large piles) that were not wetted down. This operation has been changed and the material is now handled wet hopefully mitigating any offsite fugitive issues. Additionally, the facility has plans to install a sprinkler on the storage pile stacker located near the wash plant. Mr. Spor described that the facility is planning to manage storage piles in "wind rows" which would include lanes that allow the trucks to drive more effectively between piles to apply dust suppressant and water.

The tour began with observation of the wash plant ("wet plant"). The wash plant consists of equipment used for washing, screening, flotation, desliming, classification and dewatering of sand. The wash plant is a completely wet process and is in an enclosed building up to the 30.0 million British thermal units (MMBTU) fluidized bed sand dryer (EUSANDDRYER). The sand dryer blows heated air upward through the sand to dry it. Exhaust from the sand dryer is fed to a wet scrubber which controls PM emissions. During the inspection, the wet scrubber flow rate (132.0 gallons per minute [gpm]) and the pressure drop (9.23 inches water) was recorded in the wet plant control room. During the inspection visible emissions from the wet scrubber (SVWETSCRUBBER) were zero opacity. Other equipment listed in Appendix A of PTI 150-08E (sand scrubbers, hydrosizer, flotation tanks, etc.) located in the enclosed portion of the wash plant had no visible emissions.

Following observation of the wet plant and associated sand dryer and wet scrubber, the "dry plant" was observed. The dry plant houses final product and equipment consists of hoppers, truck and rail loading, conveyors, elevators, screens, storage bins used for material handling, sorting/blending of the silica into various product types. A dust collector (two filter banks) controls emissions from screens and associated transfer points. The pressure drop for each dust collector bank is monitored separately. During the inspection, the dust collector pressure drop gauges read approximately 1.9 inches and 2.7 inches. The facility also operates a "HiVac" industrial vacuum cleaning system used to clean up spilled sand in the screen house. During the inspection, the dry plant had no visible emissions. Duct work controlling emissions from screens and transfer points appeared to be in good operating condition and were ducted to the dust collector as appropriate.

During the inspection, a solvent based cold cleaner was observed in the facility garage/maintenance building. At the time of inspection, the cold cleaner lid was closed and appeared to meet Rule 707 requirements. Cold cleaner instructions were posted in a conspicuous location. A copy of the safety data sheet (SDS) for the material used was provided.

APPLICABLE RULES/PERMIT CONDITIONS

PTI 150-08E

Permit conditions have been paraphrased for brevity. Please see PTI 150-08E for conditions in their entirety.

EUSANDDRYER

SC I. COMPLIANCE. PM emissions shall not exceed 0.025 grains per dry standard cubic foot (gr/dscf) and PM10 emissions shall not exceed 7.01 pounds per hour (pph). The 0.025 gr/dscf limit is established by 40 CFR 60.732(a) for dryers. On November 10, 2010, a stack test was conducted to demonstrate compliance with the

permitted emission limits and 40 CFR Part 60, Subpart UUU. Test results indicate a PM emission rate of 0.0019 gr/dscf and 0.40 pph (see file for stack test report). According to the December 9, 2010 test report, the sampling time and volume for each test run was at least 120 minutes and had a minimum sample volume of 60 dscf (1.7 dry standard cubic meter [dscm]) meeting the requirements of §60.736(b)(1).

SC I. 3 and SC V. 1. **COMPLIANCE.** Visible emission not to exceed 10 percent opacity except as specified in 40 CFR Part 60, Subpart UUU. Subpart UUU (§60.732(b)) requires that no emissions be discharged into the atmosphere greater than 10% opacity unless the emissions are discharged from an affected facility using a wet scrubbing device. The sand dryer at the facility is equipped with a wet scrubber, therefore the opacity standard does not appear to be applicable. However, on November 10, 2010, visible emission measurements were conducted in conjunction with a stack test. While visible emission testing is not required, per §60.732(b), during the November 10, 2010 stack test, visible emissions were reported as zero. During the inspection visible emissions from the wet scrubber were zero opacity.

SC II. 1, SC IV. 4, and SC VI. 2. **COMPLIANCE.** Shall not process more than 2,800 tons of material per day nor 1,000,000 tons of material per 12-month rolling time period. Belt scale shall be installed and maintained. Records are to be maintained. The facility records material processed as required. The highest daily throughput for July 1, 2019 through August 31, 2020 occurred on July 2, 2019 at 2,070 tons. The highest 12-month rolling throughput occurred during February 2020 at 381,662 tons.

SC II. 2 and 3. **COMPLIANCE.** Shall only burn natural gas or propane. Shall not process asbestos tailings or asbestos containing material (ACM). EUSANDDRYER operates exclusively on natural gas. ACM is not processed at the facility. Raw material is received from the Sylvania Mine located in Monroe County.

SC III. 1. **COMPLIANCE.** Shall not operate EUSANDDRYER unless the nuisance minimization plan for fugitive dust is implemented and maintained. Please see fugitive dust discussion below.

SC IV. 1, 2, 3, and SC VI. 1. **COMPLIANCE.** Wet scrubber to be installed, maintained, and operated in a satisfactory manner. Pressure drop and liquid flowrate to be recorded and measuring device to be calibrated. Shall record an arithmetic average over a 2-hour period of both pressure drop and liquid flowrate once on a daily basis. According to §60.735(c)(2), the pressure drop is considered in compliance if the average value is not less than 90 % of the pressure drop measured during the November 10, 2010 stack test (measured pressure drop 7.7 inches water). This would equate to a minimum pressure drop of approximately 6.93 inches water. According to §60.735(c)(3), the daily scrubber flow rate should be ± 20 % of the measured flow rate from the stack test. This equates to approximately 105 gallons per minute (gpm) to 157.2 gpm. During the inspection, the wet scrubber flow rate (132.0 gpm) and the pressure drop (9.23 inches water) was recorded in the wet plant. The facility monitors flow rate and pressure drop on a continuous basis and maintains records as appropriate. According to Mr. Olchawa, a computer program (wonderwear) is set up to calculate a 2 hour arithmetic average. The facility provided daily 2 hour average records of both flowrate and pressure drop for July 1, 2019 through August 31, 2020. Records indicate compliance with both pressure drop and flow rate requirements.

The facility calibrates the pressure drop meter and flow meter annually. Calibration records were provided. According to the facility, during 2019 the flow meter calibration was not conducted. In an email dated September 9, 2020, U.S. Silica states that the calibration company, had a new technician out to calibrate the scrubber gauges in 2019 and he inadvertently calibrated a pressure switch for the exhaust fan and did not calibrate the water flow meter. The facility provided flow meter calibration records for 2014 through 2018. Records indicate that the flow meter has consistently been within tolerance (less than 5%) difference in measured flow rates and the meter has not been adjusted in the past. While the calibration was missed during 2019, U.S. Silica has scheduled a calibration check to be conducted by September 18, 2020. The AQD accepts this approach to satisfying that requirement that the meter be calibrated annually.

SC VIII. 1. **COMPLIANCE.** Exhaust diameter not to exceed 42 inches. Stack height to be a minimum of 60 feet above ground surface. During the inspection stack dimensions appeared to meet permit conditions. Measurements of the stack were not collected.

SC IX. 1. **COMPLIANCE.** Shall comply with 40 CFR Part 60, Subparts A and UUU as applicable. At this time, the facility appears to be operating in compliance with Subpart A and UUU.

EUSANDPROCESS

EUSANDPROCESS consists of both the wash plant process up to the EUSANDDRYER, and the dry plant operations. Dry plant operations are in an enclosed building with transfer points being controlled by a dust collector (SVCOLLECTOR).

SC I. 1, 2, and 3. **NOT EVALUATED.** PM, PM10, and PM2.5 emission limits were not evaluated. The emission limits reference General Condition 13, where the Department may require the permittee to conduct performance tests. At this time, the AQD has not required that tests be performed to evaluate PM, PM10, and PM2.5 emission limit compliance. The facility is likely in compliance with the emission limits through proper operation of the dust collector as described below under SC IV. 1, 2, 3, and SC VI. 1. However, PTI 150-08E does not specifically cite those special conditions as testing/monitoring methods for SC I. 1, 2, and 3.

SC I. 4. **COMPLIANCE.** Visible emissions from drop points and transfer points not to exceed 10 percent opacity. During the inspection visible emissions from drop points and transfer point were zero opacity.

SC II. 1. **COMPLIANCE.** Shall not process asbestos tailings or asbestos containing material (ACM). ACM is not processed at the facility. Raw material is received from the Sylvania Mine located in Monroe County.

SC III. 1. **COMPLIANCE.** Shall not operate any portion of EUSANDPROCESS unless opacity limit listed in Appendix A is met. During the inspection visible emissions from observed equipment was zero opacity.

SC III. 2. **COMPLIANCE.** Shall not operate EUSANDPROCESS unless the nuisance minimization plan for fugitive dust is implemented and maintained. Please see fugitive dust discussion below.

SC IV. 1, 2, 3, and SC VI. 1. **COMPLIANCE.** Equipment control device shall be installed and maintained. Dust collector (fabric filter) shall be installed and maintained. Pressure drop monitored with an alarm sounding when pressure drop exceeds 10 inches water. Pressure drop monitored and recorded on a daily basis. During the inspection, the dust collector and other controls (enclosure, partial enclosure, saturated material, etc.) appear to be installed and operating as required. During the inspection, the two dust collector banks registered a pressure drop of 1.9 inches and 2.7 inches. The facility provided pressure drop records for July 1, 2019 through August 31, 2020. According to correspondence from the dust collector manufacturer, the normal operating range for the dust collectors is 1 to 6 inches water gauge. According to correspondence from the facility an alarm sounds at 5 inches water gauge. All pressure drop readings in records provided are less than 6.0 inches water.

SC VIII. 1. **COMPLIANCE.** Exhaust diameter not to exceed 36 inches. Stack height to be a minimum of 56 feet above ground surface. During the inspection stack dimensions appeared to meet permit conditions. Measurements of the stack were not collected.

SC IX 1. **COMPLIANCE.** Shall label all equipment using the company ID Numbers in Appendix A. During the inspection, equipment ID numbers appeared to be in place.

EUTRUCKTRAFFIC & EUSTORAGE

Conditions for the EUTRUCKTRAFFIC and EUSTORAGE are combined as conditions are similar for both emission units.

SC I. 1. **COMPLIANCE.** Visible emissions from EUTRUCKTRAFFIC (wheel loaders and all truck traffic) and EUSTORAGE (material storage piles) shall not exceed 5 percent opacity. During the inspection visible emissions from EUTRUCKTRAFFIC equipment and storage piles were zero opacity.

SC III. 1. **COMPLIANCE.** Shall not operate EUTRUCKTRAFFIC or EUSTORAGE unless the nuisance minimization plan for fugitive dust is implemented and maintained. Please see fugitive dust discussion below.

NUISANCE MINIMIZATION PLAN: FUGITIVE DUST

On June 25, 2019, the Nuisance Minimization Plan (NMP) was updated based on AQD comments provided on June 6, 2019. The NMP is evaluate below.

Site Roadways/Plant Yard

SC I. A.B. and C. **COMPLIANCE.** Dust shall be controlled by applications of water, calcium chloride or other approved compound. All paved roadways and plant yards shall be swept as appropriate. Material spillage shall

be cleaned up immediately. A record of dust suppressant applications shall be kept on file and shall include the following: date of treatment; responsible person's initials; and road segment/lot identification. During the inspection the facility appeared to be treating roadways appropriately. Roadways were wet and the paved area adjacent to the truck scales appeared to be adequately swept and wet. Records provided indicate the facility is maintaining the above required records.

Plant

SC II.A and B. **COMPLIANCE**. Drop distance at each transfer point shall be reduced to minimum that equipment can achieve. Following the dryer, all conveyors, screens, tanks and elevators handling sand products shall be enclosed or covered and ventilated to a dust collector. During the inspection these requirements appeared to be met.

Storage Piles

SC III. A and B. **COMPLIANCE**. Shall minimize drop distance. Stockpiles shall be watered/dust suppressant applied on an as needed basis. During the inspection the water truck was observed onsite. A record of water/dust suppressant applications shall be kept on file and shall include the following: date of treatment; responsible person's initials; and pile identification. Stacker conveyor used to consolidate the smaller sand piles. Front end loaders used in the plant shall have upward flow exhausts to help minimize dust generation. The facility appears to be maintaining the required records. Stacker conveyors and front end loaders were not observed during the inspection.

Truck Traffic

SC IV.A and B. **NOT EVALUATED**. Vehicles to be loaded to prevent their contents from dropping, leaking, blowing, etc. In coming Ore delivery trucks and outgoing products shall be tarped. This condition was not evaluated during the inspection as loading and trucks were not observed.

SC IV. C. **COMPLIANCE**. Speed limits on plant roads are controlled by posted speed limit (10 miles per hour), slow warning, stop signs, vehicle observation and driver interaction. During the inspection speed limit signage and slow warning signs were observed.

AQD Inspection

SC V. **FURTHER EVALUATION NEEDED**. Plan is subject to adjustment if fugitive dust requirements are not being met and/or permitted emission limits are not being met. At the time of inspection, USS appeared to be meeting fugitive dust requirements. However, on August 7, 2020, a violation was issued for violation of Rule 901(b). In response to the violation notice, the facility provided a response on August 26, 2020 providing information on additional measures (installed sprinklers, dust suppressant application, etc.) that had occurred or were in process, to mitigate offsite fugitive dust impacts. At this time the AQD is evaluating whether the additional measures are effective mitigating fallout in the residential neighborhood.

Incremental Improvements and Progress

SC VI.A and B. **NOT EVALUATED**. This portion of the fugitive dust plan lists paving projects that were previously completed in 2015, 2016, and 2018, along with dust collection capacity increase in 2017. There is no AQD evaluation of this portion of the fugitive dust plan required.

NEW SOURCE PERFORMANCE STANDARDS (NSPS)

40 CFR Part 60, Subpart UUU – Standards of Performance for Calciners and Dryers in Mineral Industries

The fluidized bed and dryer is subject to 40 CFR Part 60, Subpart UUU. Applicable portions of Subpart UUU were included in the special conditions under EUSANDDRYER. The facility demonstrated compliance with the PM standard for dryers (§60.732(a)) during stack testing conducted on November 10, 2010. The facility maintains a monitoring device to that continuously measures pressure drop and liquid flow rate per §60.734(d).

NESHAP/MACT

40 CFR Part 63, Subpart T – National Emission Standards for Halogenated Solvent Cleaning

According to 40 CFR 63.460(a), this standard applies to units that use solvents with concentrations of 5% or more by weight of halogenated compounds (methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, or chloroform). The SDS provided indicates that material used does not contain the above listed halogenated compounds. Therefore, this standard does not apply.

EXEMPT EQUIPMENT

Cold Cleaner

The cold cleaners at the facility are exempt from PTI requirements under the following rule.

R336.1281(2)(h): "The requirement to obtain a PTI does not apply to cold cleaners that have an air/vapor interface of not more than 10 square feet."

The facility provided the SDS for the cold cleaner (Skysol). The cold cleaner is not heated during use and has a vapor pressure of less than 1 millimeters mercury (mmHg) or 0.019 pounds per square inch [psi]. During the inspection the cold cleaner appeared to be in compliance with the applicable requirements of R336.1707.

POTENTIAL TO EMIT EVALUATION

Please see the inspection report dated June 6, 2019 for information regarding the facility potential to emit.

MAERS REPORT REVIEW

Reporting year 2019 MAERS was submitted in a timely manner and was reviewed by AQD staff. The MAERS audit was passed. See facility file.

FINAL COMPLIANCE DETERMINATION

At this time, USS appears to be in compliance with PTI 150-08E and 40 CFR Part 60, Subpart UUU. Further evaluation is needed regarding potential fugitive dust impacts to the nearby residential neighborhood and potential improvements to facility operations.

NAME  _____

DATE 9/23/20 SUPERVISOR JK _____