DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

B561969244

FACILITY: KOREX CORP		**SRN / ID:** B5619
LOCATION: 50000 PONTIAC TRAIL, WIXOM		**DISTRICT:** Warren
CITY: WIXOM		**COUNTY:** OAKLAND
CONTACT: Collin Rankin , Quality Assurance Manager		**ACTIVITY DATE:** 08/03/2023
STAFF: Noshin Khan	**COMPLIANCE STATUS:** Non Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: scheduled, on-site inspection		
RESOLVED COMPLAINTS:		

On Thursday, August 3, 2023, I, Noshin Khan, Michigan Department of Environment, Great Lakes, and Energy-Air Quality Division (EGLE-AQD) staff, performed a scheduled, on-site inspection of Korex Corporation located at 50000 Pontiac Trail, Wixom, Michigan 48393 (SRN: B5619). The purpose of the inspection was to determine the facility's compliance status with the requirements of the federal Clean Air Act; Article II, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 Public Act 451, as amended (Act 451); the AQD administrative rules, and the conditions of Permit to Install (PTI) Number 539-96.

I arrived at the facility around 10:30AM and met with Collin Rankin, Quality Assurance Manager, to discuss the facility's operations. Korex produces powder and liquid detergents that are formulated, packaged, and labeled as specified by the customer/brand. The detergents are produced through a batch systems that start from raw materials being drawn in from silos on the roof. According to Collin, these raw materials are largely salt, sodium sulfate, and soda ash. As this material is transferred down a system, surfactants and other components are added and processed through equipment including mixers and grinders. After all components are added, the product is dried in a fluid bed dryer before being conveyed to the packaging lines for powder detergents or to Building 2 for liquid detergent production and packing.

Systems 1, 2, and 3 are detergent production lines that feed into powder packing lines T, U, V, and 4. Packing lines 1-3 are liquid packing lines. Line 5 was constructed and tested in 2021 as a liquid packing line but was never brought into regular operation, according to staff. System 1 is no longer operated and is not capable of operation. System 2 produces powdered dish washing detergent that exclusively feeds to packing line T. System 3 produces laundry detergent and other detergents that feed into packing lines U, V, and 4. Line 4 began operation in 2017 and is utilized for packing Tide washing machine cleaner pouches. Line 4 involves powder packing and has the potential to emit air pollutants regulated by the Clean Air Act and is therefore subject to Rule 201. During the last inspection in July 2022, the facility was found in violation of Rule 201 since Line 4 was installed and operated without a permit. The facility has since had pre-application meetings with AQD Permit Section staff and submitted a draft application, but has not submitted an official application with additional information requested by Permit staff. The facility continues to be in violation of Rule 201.

We began the facility walkthrough on the first floor of the main building, where we observed the packaging lines for dry powder detergents. Manual palletizing is also done in this area and packed items are moved to the warehouse in Building 2 for storage. During my inspection, System 2 was operating and the packing lines associated with System 3 were operating.

Next, Collin led us to the 8th floor, where I observed the dust collectors for System 2 and System 3. I also observed labeled material storage tanks and feeding lines for soda ash and salt. As we traveled downward, I observed more material hoppers on the 6th floor and grinders and mixers on the 5th floor. Below this area, around the 3rd floor, is where the fluid bed dryers are located.

From here, we walked to the control room. I observed the magnehelic pressure differential gauges for dust collectors that control particulate emissions from various parts of the process including material silos and the fluid bed dryers. Collin pointed out which units were operating, including the fluid bed dust collector for System 2, silo #7, silo #12, and a salt/sulphate silo for System 2. I observed that the

readings on these gauges were within the marked bounds, which indicates that the bag filters for the dust collectors were operating properly.

Three existing boilers are located in Building 1 and are used to heat the fluid bed dryers. I observed these units during the walkthrough and observed that each has a heat input rating of 3.5 MMBtu/hr. These boilers are included as part of the original potential to emit calculations in the AQD files for the permit, and NOx and CO emission limits are included in the permit for the operation of these boilers. I discuss compliance with these emission limits in the permit compliance evaluation section.

Next, we walked to Building 2, where Collin showed me liquid product packing lines 2 and 3, which produce toilet bowl cleaner and glass cleaner. Here, powder detergent base from Building 1 is mixed with deionized water and other liquid components in mixing tanks and transferred to batch storage tanks. Liquid detergent is conveyed from these tanks into filling and packing lines. During the inspection, batching of liquid product in storage tanks was occurring but no packing lines were operating. The Line 4 powder packing line is located in this building. Besides the operation of lines 2-4, the building is used for warehousing. Fragranced materials are also stored in this area, and I observed that all containers were tightly closed, and some were additionally wrapped in plastic.

Line 1 produces enzymatic dish gel and is located in the annex building south of Building 1. Collin explained that Korex leases a portion of the building shared with Lynn Medical only for Line 1. We walked to the annex and I observed a similar batch system for the liquid packing line.

At the end of the walkthrough, Collin showed me an existing parts washer located in the maintenance shop. I observed that the washer had an air/vapor interface of less than 10 square feet and had a lid which was closed. I did not observe instructions posted and informed Collin of the requirement, per Rule 611, to develop and post written procedures for operation of a cold cleaner. I provided him a copy of the AQD cold cleaner operational procedures sticker. The rule applies if the solvent used is composed of 5% or more, by weight, of volatile organic compounds. I asked Collin for a material SDS for the cleaner used, but he was not able to determine what cleaner is used or provide material information by the time of submission of this report. According to maintenance staff, the parts washer is rarely used. The parts washer is exempt from permit requirements per Rule 281(2)(h) if the solvent meets the qualification for a cold cleaner described above, or per Rule 281(2)(k) if the solvent is aqueous based.

Permit Compliance Evaluation

Per PTI 539-96 Special Condition (S.C.) 2, the particulate emissions from the facility shall not exceed 16.9 lbs per hour nor 56.8 tons per year based on a rolling 12-month sum. The emissions calculations provided by the facility assume that the facility dust collectors emit 0.01 lbs particulate per 1000 lbs of exhaust gas. I asked Collin about how these emission factors were determined and he said that the previous QA Manager had prepared the calculations spreadsheet and determined the emissions factors, and that operating parameters at the plant haven’t changed since then. Based on AQD records, it does not appear that the facility has had testing to confirm particulate emission rates from its dust collectors.

For Systems 2 and 3, the facility currently maintains 12-month rolling operating hours and 12-month rolling PM emissions in tons per year, calculated each month. However, these monthly calculations for the bulk unloading process have not been maintained. Additionally, the facility has not maintained calculations for lbs of PM emitted per hour. Consequently, I am unable to confirm compliance with the emission limits. The facility calculated a calendar year emission rate for 2022 MAERS reporting, which indicates total PM emissions of 0.76 tons, so the facility appears to operate below the limit.

The facility is in violation of S.C. 2 for not maintaining required monthly PM emission calculations.

Per S.C. 3, there shall be no visible emissions from the system. During my visit, I did not observe any visible emissions.

Per S.C. 6, the facility is required to monitor and record the pressure drop across all fabric filter collectors daily, keep readings on file for a period of at least two years, and make these records available to the AQD upon request. The facility had received a violation for not keeping these logs as a result of the last

inspection. During this inspection, I observed that the facility maintains daily logs recording the pressure drop across all fabric filter collectors. The facility is in compliance with this requirement.

Per S.C. 8, the facility shall not operate all equipment for more than 560 hours per month based on a rolling 12-month average and records for hours of operation shall be kept on file for a period of at least 2 years. The facility currently maintains records of hours of runtime for both Systems 2 and 3. However, the monthly value is not based on a 12-month average as specified in the permit. From July 2022 through June 2023, the highest monthly operating hours for a system was 298.65 hours in March 2023 for System 3.

The facility is in violation of S.C. 8 for not maintaining monthly operating hours for all equipment based on a 12-month average.

Per S.C. 9, the facility is required to follow the maintenance program attached in the permit. As a result of the last inspection, the facility received a violation for not maintaining maintenance logs or implementing the maintenance schedule in their permit. I had followed up with Korex staff multiple times since the violation was issued and was told that they were working with maintenance staff to implement maintenance logs. By the time of submission of this report, the facility has not implemented the maintenance schedule in the permit and has not been able to produce maintenance logs. According to Collin, general maintenance is performed weekly on Fridays and/or Saturdays and includes cleaning and greasing bearings and gears, and other maintenance activities as needed. In Korex's response letter (dated July 10, 2023) to a violation issued on June 22, 2023, for visible emissions observed from system stacks, the facility wrote that it would implement both the maintenance schedule in the permit and perform weekly bag filter inspections. The facility was unable to produce any records of these changes being made during or after my inspection.

The facility continues to be in violation of S.C. 9 for not implementing the preventative maintenance program in the permit.

Per S.C. 10, the heater and boilers shall not exceed the following emission limits: for NOx, 4.4 lb/hr, and 15.0 tpy based on a rolling 12-month sum; for CO, 1.2 lb/hr, and 4.0 tpy based on a rolling 12-month sum. The facility had received a violation for not maintaining NOx and CO emission calculations as a result of the 2022 inspection. After my inspection on August 3, 2023, Collin was able to provide NOx and CO emissions calculations. The calculations seem to assume operation of the boilers 24 hours a day for 30 days a month, and use NOx and CO emission factors of 1.0 lb/MMscf and 8.4 lb/MMscf, respectively. The facility is limited to operation of 560 hours a month, based on a 12-month rolling average, and the emission factors seem low compared to those listed in AP-42, Table 1.4-1, so the assumptions made seem to be inaccurate. The NOx and CO emission calculations are not satisfactory and should be reviewed.

As discussed, I observed 3 boilers rated at 3.5 MMBtu/hr. The facility's boilers may be subject to 40 CFR Part 63, Subpart JJJJJJ. Compliance with this rule was not evaluated since the AQD has not accepted delegation to implement or enforce the rule for this area source.

Based on my on-site inspection and records review, the facility is in violation of Special Conditions 2, 8, 9, and 10 of PTI 539-96, as well as Rule 201 for the installation and operation of an emission unit without a Permit to Install.

NAME Nadia Khan DATE 09/28/2023 SUPERVISOR K. Kelly