

P0570
MAWILK

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

P057027886

FACILITY: METRO COLD STORAGE INC		SRN / ID: P0570
LOCATION: 2529 ORLEANS STREET, DETROIT		DISTRICT: Detroit
CITY: DETROIT		COUNTY: WAYNE
CONTACT: Tim Sullivan , President		ACTIVITY DATE: 11/26/2014
STAFF: Todd Zynda	COMPLIANCE STATUS: Compliance	SOURCE CLASS:
SUBJECT: November 25, 2014 Complaint Investigation and November 26, 2014 Self Initiated Inspection		
RESOLVED COMPLAINTS: C-15-00200, C-15-00201, C-15-00202, C-15-00203		

REASON FOR INSPECTION: Self-Initiated Inspection

INSPECTED BY: Todd Zynda, AQD

PERSONNEL PRESENT: Tim Sullivan, President; Bob Wirth, Maintenance; Don Davidson, RND Mechanical

FACILITY PHONE NUMBER: 313-259-4647

FACILITY WEBSITE: www.detroitmetrocoldstorage.com or www.santemp.com

FACILITY BACKGROUND

Metro Cold Storage, Inc. (MCS), an affiliate to the Santemp Company, is located in Detroit's Eastern Market at 2529 Orleans Street. The company provides cold storage (frozen or low temperature) to a variety of customers. The building was formerly operated as a brewery (Martz Brewing Company) for 90 years. The building was converted into a public freezer by Arctic Cold Storage, and then renamed Standard Cold Storage in 1962. The building was purchased in 1979 and renamed it Metro Cold Storage. The facility is surrounded by commercial and industrial businesses. Several food storage and food processing operations are in the area. The nearest residential building is located immediately adjacent, to the south (E & B Brewery Lofts). An alley way separates Metro Cold Storage and the E & B Brewery loft complex.

The facility currently operates seven days a week. Regular business hours are as follows: Monday through Friday 7:00 AM to 3:30 PM, Saturday 7:00 AM to 9:00 AM, and Sunday 7:00 AM to 11:00 AM.

PROCESS OVERVIEW

The company is a cold storage facility. The building is used for warehousing products that require frozen or low temperatures. The company utilizes an ammonia refrigeration system to maintain cold temperatures in the building storage areas.

COMPLAINT/COMPLIANCE HISTORY

Four complaints were received between November 25 and 26, 2014, regarding ammonia odors impacting residential properties in the area. A complaint investigation was conducted on November 25, 2014. As a result of the complaint investigation, a self-initiated inspection was conducted at MCS on November 26, 2014, which is the subject of this report.

There are no files on this facility in the Michigan Department of Environmental Quality (MDEQ) Air Quality Division (AQD) Detroit Office. It is unknown when the last inspection was conducted.

OUTSTANDING CONSENT ORDERS

None

OUTSTANDING VIOLATION NOTICES

None

NOVEMBER 25, 2014 COMPLAINT INVESTIGATION

In response to the complaints received on November 25, 2014, a complaint investigation was conducted between 7:00 PM and 8:00 PM in the vicinity of E & B Brewery Lofts and Metro Cold Storage. At the time of the complaint investigation, wunderground.com indicated winds were from the west at approximately 9 miles per hour (mph). The temperature was 33 degrees Fahrenheit (°F) with overcast skies.

During the investigation, a meeting was held with a complainant (Ms. Lori Blakely, E&B Brewery Lofts facility contact). During the meeting, the complainant explained how the ammonia odor has been so strong that some residents are performing a self-evacuation because the odors are making them sick. During the investigation, strong to intermittent mild ammonia odors were detected in the gated parking lot that is located adjacent and to the south of MCS. A level 3 to 4 ammonia odor was detected in this area consistently during the entire duration of the complaint investigation. Stronger, more pungent ammonia odors (level 4) were identified in the southwest corner of the gated parking lot between the loft and MCS. During the investigation, similar ammonia odors were identified inside the E & B Brewery Lofts lobby area and elevator waiting area. According to the complainant, the ammonia odors are traveling inside the building and impacting residents. The complainant was very concerned about the health and safety of tenants in the building. The complainant was informed that AQD would not initiate an evacuation. The Detroit Fire Department (DFD) is the emergency first responder and would initiate an evacuation if deemed necessary. The complainant stated that during the last 24 hours the DFD has been out to the lofts on three separate occasions investigating the ammonia odors. The DFD did not initiate an evacuation. The complainant was informed that AQD will perform an inspection of the Metro Cold Storage to investigate possible sources of the ammonia odors in the area and to assess compliance with air quality rules and regulations.

Following discussions with the complainant, additional odor surveillance was conducted in the area on Orleans Street, Wilden Street, Adelaide Street, and Riopelle Street. Ammonia odors were not detected at any other location surrounding MCS and E & B Brewery Lofts.

INSPECTION NARRATIVE

On November 26, 2014 the Michigan Department of Environmental Quality (MDEQ) Air Quality Division (AQD) inspector, Mr. Todd Zynda, conducted a level 2 unannounced inspection of MCS at 2529 Orleans Street, Detroit, Michigan. During the inspection, Mr. Tim Sullivan, President, provided information regarding operations at the facility. Mr. Bill Wirth, Maintenance, and Mr. Don Davidson, RND Mechanical, provided additional information and a tour of facility operations relating to air quality regulations. The inspection was conducted to determine the facility's compliance with the Natural Resources and Environmental Protection Act (NREPA), Act 451, Part 55.

At 9:15 AM, AQD staff performed outside observations. No visible emissions were observed at the facility. Odors were not detected prior to entering the facility. At 9:30 AM AQD entered the facility, stated the purpose for the inspection, and was greeted by Mr. Sullivan. Mr. Sullivan was informed that there have been complaints regarding ammonia odors in the area. Because of the documented ammonia odors on the November 25, 2014, AQD would like to perform an inspection of the facility to determine if the MCS is the source of the ammonia odors and to determine compliance with federal and state air quality rules and regulations.

During the opening meeting, Mr. Sullivan explained that there have been several malfunctions with the ammonia refrigeration equipment over the past several days. According to Mr. Sullivan, the problems began on Monday, November 24, 2014 during a power outage. On that day a shaft seal was blown on a second stage electrical reciprocal compressor engine. The engine was shut down. Following the malfunction of the reciprocal engine, the backup "screw-type" electrical second stage compressor was activated. This engine seized up, and is also no longer working. Mr. Sullivan believed that the pressure relief valve on the screw type engine may have opened, releasing any residual ammonia in the screw type engine tank. Mr. Sullivan stated that the facility has two liquid ammonia storage tanks that have a total combined capacity of 7,500 pounds.

Following the opening meeting, Mr. Wirth provided a walk-through of the facility operations relating to ammonia refrigeration. The facility inspection started with observation of the roof where the ammonia pressure release valve vents to ambient air. The condensers associated with the ammonia refrigeration equipment are also located at roof level. During inspection of the roof top and condensers, oil was observed in the area around the condensers. According to Mr. Wirth, when the shaft seal blew on the reciprocal compressor engine, the oil used in the compressor engine was leaked to the roof top level. Mr. Wirth stated that they are in the process of cleaning of the spilled oil. During observation of the pressure relief valve outlet, there was light (level 1 to 2 ammonia odor). At this time, Mr. Wirth could not confirm if the valve was properly closed or not. Located at the roof level is an exhaust fan for the engine room. Strong ammonia odors (level 4) were documented when in front of the exhaust fan at roof level.

Following observation of the roof level, the engine room was observed. Ammonia odors in the engine room were moderate to strong (level 3 to 4). The reciprocal compressor engine that had the shaft seal blown, was disassembled and being worked on. The liquid ammonia tanks are located on the "cat walk" level of the engine room. Plates on the ammonia tanks indicate that they were installed in 1965. According to Mr. Wirth the full capacity of the tank is not utilized. The facility maintains a level of the liquid ammonia that will operate the refrigeration system.

While in the engine room, Mr. Davidson, a contractor for MCS, was available to discuss current repair operations and options for reducing/eliminating ammonia odors to the outside ambient air. Mr. Davidson stated that entire system is a closed loop system, which when operated properly does not have ammonia releasing to the atmosphere. Mr. Davidson stated that when the first engine went down there was residual ammonia that may have been released into the engine room, which was then vented outside using the roof ventilation fan. When the screw-type engine seized up, the ammonia gas created was thought to be isolated in engine tank. However, during the inspection, it was revealed that a valve was not closed off and residual ammonia gas may be leaking to outside ambient air. The pressure relief valve on the screw type engine, also appeared to be leaking. Mr. Davidson stated that during the previous day the tank of the screw type engine read 40 pounds ammonia. At the time of the inspection, the gage read 25 pounds, indicating that approximately 15 pounds of ammonia had leaked in the last 24 hours. Mr. Davidson stated that to eliminate the ammonia odors to outside ambient air, the exhaust fan for the engine room would be turned off, and the residual gas located in the screw type engine would be emptied. According to Mr. Davidson, this is completed by using a bucket of water and opening a valve releasing ammonia gas to the bucket of water. Ammonia gas is absorbed in the water. This would eliminate the residual ammonia gas from leaking to the engine room and also eliminate as ammonia gas from exiting the building. Mr. Davidson stated that the company will be removing the screw type engine completely, and will be operating the ammonia refrigeration system entirely on the reciprocating engine, once it is repaired. During the repair of the reciprocating compressor engine, the refrigeration system will not be operating. According to Mr. Wirth, during the down time of the equipment not operating, the cold storage area, has risen approximately 10 °F (0°F to 10°F).

A closing meeting was held at the end of the inspection. During the closing meeting the actions (turning of the engine room fan, and emptying residual ammonia from screw type engine tanke) to eliminate odors outside the building were discussed with Mr. Sullivan.

Following the inspection of MCS, a meeting was held with two of the complainants. The complainants were informed of the findings of AQD's investigation. The complainants were informed that the odors should be eliminated. The complainants were encouraged to contact AQD or call the PEAS line if the odors continue.

At 1:30 PM a follow up visit was made to the facility to verify that odors had been eliminated, and that the engine room ventilation fan was turned off. At this time gage on the screw-type engine tank read zero pounds ammonia, indicating that the tank was empty (eliminating additional leaks). Additionally, the engine room fan was not in operation.

A phone call was made on December 1, 2014 to the company for status on the operation refrigeration system. Mr. Sullivan stated that the system was back up and running at 3:00 PM on Wednesday, November 26, 2014.

APPLICABLE RULES/PERMIT CONDITIONS

There are currently no issued permits to install for MCS located at 2529 Orleans Street. For brevity, the applicable Michigan Rules are paraphrased.

Michigan Rules

R 336.1901 - Air contaminant or water vapor; when prohibited. **COMPLIANCE.** "Shall not cause or permit the emission of an air contaminant that causes... (a) injurious effects to human health or safety, animal life, plant life of significant economic value, or property; or (b) Unreasonable interference with the comfortable enjoyment of life and property." While it was determined that MCS was responsible for the offsite ammonia odors, the company has eliminated the odors through the discontinued use of the engine ventilation fan and the emptying of the ammonia tank associated with the screw-type engine. At the time of this report, there have been no additional complaints regarding ammonia odors.

PERMIT TO INSTALL EXEMPT EQUIPMENT

Ammonia Refrigeration Equipment

The ammonia refrigeration equipment appears to be exempt from permit to install (PTI) requirements under the following Rule.

R336.1280(a): "Permit to install does not apply to...cold storage refrigeration equipment."

Ammonia Storage

The ammonia storage tanks (installed in 1965) located at the facility appear to be are "grandfathered" equipment as they were installed prior to August 15, 1967 (the implementation date of the Air Pollution Control Act, Act 348).

APPLICABLE FUGITIVE DUST CONTROL PLAN CONDITIONS:

Not applicable. All lots are paved.

MAERS REPORT REVIEW:

Not applicable. The facility is not required to report emissions through Michigan Air Emissions Reporting System (MAERS).

FINAL COMPLIANCE DETERMINATION:

At this time, the company has addressed the ammonia odor issues. The company appears to be in compliance with air quality rules and regulations. No additional complaints have been received regarding ammonia odors since November 26, 2014.

NAME 

DATE 12/1/14

SUPERVISOR JK