



AIR EMISSION TEST REPORT

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AIR QUALITY DIVISION

Title RESULTS OF VISIBLE EMISSION COMPLIANCE
TESTING FOR NEW NONMETALLIC MINERAL
PROCESSING EQUIPMENT

Report Date November 14, 2017

Test Date(s) October 19-20, 2017

Facility Information	
Name:	Detroit Salt Company, L.C.
Street Address:	12841 Sanders Street
City, County:	Detroit, Wayne

Permit / Emission Unit Information	
Permit To Install No.:	318-98a

Testing Contractor	
Company:	Derenzo Environmental Services
Mailing Address:	39395 Schoolcraft Rd. Livonia, MI 48150
Phone:	(734) 464-3880
Project No.	1709018, 1710006



RESULTS OF
VISIBLE EMISSION COMPLIANCE TESTING
FOR
NEW NONMETALLIC MINERAL PROCESSING EQUIPMENT

DETROIT SALT COMPANY, L.C.
DETROIT, MI

1.0 INTRODUCTION

The Detroit Salt Company, L.C. (Detroit Salt Company) has received approval from the Michigan Department of Environmental Quality Air Quality Division (MDEQ-AQD) to install and operate new non-metallic mineral processing equipment that consists of two identical lines to package rock salt into bags (Bagging Plant). One bagging line has been installed and placed in operation within the enclosure of a single building. This bagging line has a bag sealing machine that requires the use of a ventilation system and dust collector (baghouse) to ensure the air surrounding the unit is dust free. The exhaust of the baghouse is vented back into the building enclosure in which the bagging line is operated.

The rock salt bagging line is subject to the emission standards of 40 CFR, Part 60 Subparts A and OOO (New Source Performance Standards, NSPS). The MDEQ-AQD issued the Detroit Salt Company Permit No. 318-98A for the installation and operating of its Bagging Plant equipment and processes, which are identified as emission unit EU-BAGPLANT. Permit No. 318-98A specifies that:

- ... the permittee shall evaluate visible emissions from EU-BAGPLANT ... in accordance with federal Standards of Performance for New Stationary Sources 40 CFR Part 60 Subparts A and OOO, using US EPA Method 9 ... The permittee must have prior approval from the AQD for visible emission observation procedures
- The permittee shall conduct ... quarterly 30-minute visible emissions inspections of each EU-BAGPLANT baghouse using US EPA Method 22 while the baghouse is operating in accordance with federal Standards of Performance for New Stationary Sources 40 CFR Part 60 Subparts A and OOO ... The permittee must have prior approval from the AQD for visible emission observation procedures.
- Verification of visible emissions includes the submittal of a complete report of opacity observations to the AQD within 45 days following the last date of the evaluation.

Blake Beddow performed the visible emissions (VE) testing for the Detroit Salt Company EU-BAGPLANT equipment and process operations on October 19-20, 2017. Tom Andrews performed the EU-BAGPLANT baghouse VE inspections on October 26, 2017. Mr. John C. Shook of Detroit Salt Company coordinated the projects.

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A notification for the VE testing was submitted to the MDEQ-AQD on October 12, 2017 prior to the performance test.

Questions concerning this emission report should be directed to:

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John C. Shook
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Detroit, MI 48217
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Report Certification

This test report was prepared by Derenzo Environmental Services based on field observations collected by Derenzo Environmental Services. This test report has been reviewed by Detroit Salt Company representatives and approved for submittal to the MDEQ.

I certify that the testing was conducted in accordance with the specified test methods and submitted test plan unless otherwise specified in this report. I believe the information provided in this report and its attachments are true, accurate, and complete.

Report Prepared By:



Blake Beddow
Environmental Consultant
Derenzo Environmental Services

2.0 SUMMARY OF TEST RESULTS AND OPERATING CONDITIONS

2.1 Purpose and Objective of the Tests

MDEQ-AQD PTI No. 318-98A and NSPS 40CFR Part 60 Subpart OOO require Detroit Salt Company to perform initial testing of new nonmetallic processing equipment operated in its Bagging Plant (EU-BAGPLANT). The EU-BAGPLANT equipment and process VE evaluation was completed within 180 days of commencement of operations.

The EU-BAGPLANT baghouse VE inspections are required to be conducted quarterly. The Fugitive Emission Inspection Indoor Observation form was completed when the baghouse was operating and serves as a report that is required to be placed in a logbook as specified in under §60.676(b).

The VE testing was performed in accordance with federal reference test methods as required by NSPS Subparts A and OOO (visible emissions standards).

2.2 Operating Conditions During the Compliance Tests

The permitted emission unit EU-BAGPLANT includes two identical bagging lines but only one line has been installed and placed in operation at this time. For the Method 9 building opening observations, the baghouse dust collector was not operated during bagging line operation because facility staff determined it was not needed. The baghouse was operated on the return trip to the facility for the Method 22 baghouse exhaust observations.

2.3 Summary of Air Pollutant Sampling Results

VE observations were performed on October 19-20, 2017. A total of eight (8) building openings were observed for visible emissions by a certified observer in accordance with USEPA Method 9, Section 3. Observations were recorded at 15-second intervals. The fugitive VE opacity observations were performed for three (3) 30 minute periods (five 6-minute averages per building opening) on October 19, 2017. All visible emission observations were zero percent opacity.

The process is relatively new and the facility experienced difficulties maintaining extended production on October 19, 2017. Observations for one building opening (Tarped Building, SW Wall, wall opening) was completed the following day on October 20, 2017 for one (1) 30 minute period (five 6-minute averages).

No visible emissions were observed (all recorded values are 0%). The facility is in compliance with the opacity limit in §60.672(e)(1) for fugitive emissions from building openings.

The EU-BAGPLANT baghouse VE inspections were performed on October 26, 2017 when the baghouse was operational. No visible emissions were observed and the Fugitive Emission

Inspection Indoor Observation form was completed and provided to Detroit Salt Company staff to be placed in its logbook.

3.0 SOURCE DESCRIPTION

3.1 General Process Description

The Detroit Salt Company operates a salt (non-metallic mineral) mine where all of the salt crushing and screening operations are conducted underground. Only finished product is hoisted to the surface of the mine and a portion of this finished product is packaged at the Bagging Plant to fill bags with rock salt. The permitted emission unit EU-BAGPLANT includes two identical bagging lines but only one line has been installed and placed in operation within the enclosure of a single building.

The process flow of the bagging line is as follows:

- 1) Receive bulk salt by haul truck
- 2) Transfer salt with loaders
- 3) Transfer salt through hoppers, feeders and conveyors
- 4) Spray dye on and mix solid additives with salt
- 5) Bag product (salt)
- 6) Palletize bags of salt
- 7) Package pallets of bagged salt
- 8) Transfer packaged pallets by fork truck to yard storage locations

All of the EU-BAGPLANT equipment and processes are installed within a building

Rock salt filled bags are sealed with the application of heat (electrical resistance heat) to the open end of the bagging material in order to melt it and create a bound seam (sealed bag full of salt).

Attachment 1 identifies the visible emissions observation points (building openings) that were included in the compliance testing.

3.2 Rated Capacities and Air Emission Controls

Permit No. 318-98A limits the amount of rock salt that can be processed in EU-BAGPLANT to 200,000 tons per 12-month rolling time period. The EU-BAGPLANT bagging line has a 45 ton per hour (TpH) production capacity.

An air collection system has been installed within the EU-BAGPLANT building in the vicinity of the bagging machine to collect any airborne particulates generated during the bagging process.

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The air ventilation system is connected to a dust collector that:

- Draws 7,200 actual cubic feet per minute (acfm) of air from the bagging machine ventilation system pick-up points located within the building.
- Cleans (by filtration) the air received from the ventilation system pick-up points.
- Returns filtered (cleaned) air back into the internal building environment.
- Is part of closed air ventilation system that does not exhaust to the outside air.

The baghouse (dust collector) is only used when determined necessary by Detroit Salt Company staff, and was not operating during the October 19-20 readings.

3.3 Sampling Locations

USEPA Method 9 procedures were used to evaluate the opacity of fugitive emissions being released from the Detroit Salt Company building housing the EU-BAGPLANT bagging line. The observer chose locations near the Southeast building corner, and the Northeast building corner with clear views of all walls containing building openings (no openings to bagging operations were identified for the Northwest side of the facility).

Attachment 2 provides field data sheets with an appropriate VE observation point diagram and a copy of the observer's certification.

4.0 SAMPLING AND ANALYTICAL PROCEDURES

This section provides a summary of the procedures that were used during the Detroit Salt Company observation periods.

The qualified observer was located at a distance sufficient to provide a clear view of the emission source(s) with the sun oriented in the 140° sector to his back. As much as possible, the line of vision was approximately perpendicular to the plume direction (though no plumes were observed).

40 CFR Part 60, Subpart OOO, Section 60.675(c)(3) specifies that three sources may be read concurrently if all three emission points are within a 70° viewing sector or angle in front of the observer, such that proper sun position can be maintained for all three points, and if an opacity reading for any one of the three emission points is within 5 percent opacity of the applicable standard, then the observer must stop taking readings for the other two points and continue reading just the single point. Three emission points were observed concurrently and, at no time, was the observed opacity within 5% of the applicable limit.

Certain sources (building openings) were read concurrently, according to the specifications of §60.675(c)(3) above.

5.0 RESULTS

5.1 Test Results and Allowable Emission Limits

Fugitive visible emission data for each identified source (building opening) are presented in Table 5.1 along with the applicable opacity limit. The average of the six-minute averages for each process is well below the applicable opacity standard (no visible emissions were observed). Therefore, the facility is operating in compliance with the PTI and NSPS emission standards.

All observation periods were conducted at points which meet USEPA Method 9 and Subpart OOO criteria.

5.2 Production Rates During the Test Periods

Fork truck drivers record the time each packaged pallet is picked up for transfer to its yard storage location. The bagging line computer also maintains a log of the amount of packaged pallets that have been produced. Each pallet contains 49 individually packaged salt bags, which weigh 50 pounds each. Each pallet contains about 1.225 tons of rock salt.

Based on discussions with the fork truck driver on October 19, 2017, Detroit Salt Company loaded 32 pallets (equivalent to 39.2 tons) during the VE observation period from 14:26 to 15:59.

On October 20, 2017 the bagging line computer log indicated a count of 22 pallets (equivalent to 27.0 tons) at 9:55 at the completion of the VE test period.

5.3 Variations From Normal Sampling Procedures or Operating Conditions

The testing for all pollutants was performed in accordance with USEPA Method 9, Subpart OOO and the test plan dated October 12, 2017. The facility was operated under normal process conditions.

Table 5.1 Average opacity conditions at each observation point

Visible Emission Observation Point	Observed Opacity (%) (6 min. avg.)	Permit Limit (%) (6 min. avg.)
1. Tarped Building, SW Wall, wall opening	0	7
2. Tarped Building, SE Wall, ground opening	0	7
3. Tarped Building, SE Wall, overhead door	0	7
4. Tarped Building, NE Wall, ground opening	0	7
5. Tarped Building, NE Wall, overhead door	0	7
6. Brick Building, NE Wall, overhead door	0	7
7. Brick Building, NE Wall, overhead door w/ flaps	0	7
8. Brick Building, NE Wall, man door	0	7