

## PERMIT TO INSTALL

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## COMMON ACRONYMS

AQD	Air Quality Division
BACT	Best Available Control Technology
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CEMS	Continuous Emission Monitoring System
CFR	Code of Federal Regulations
COMS	Continuous Opacity Monitoring System
Department/department/EGLE	Michigan Department of Environment, Great Lakes, and Energy
EU	Emission Unit
FG	Flexible Group
GACS	Gallons of Applied Coating Solids
GC	General Condition
GHGs	Greenhouse Gases
HVLP	High Volume Low Pressure*
ID	Identification
IRSL	Initial Risk Screening Level
ITSL	Initial Threshold Screening Level
LAER	Lowest Achievable Emission Rate
MACT	Maximum Achievable Control Technology
MAERS	Michigan Air Emissions Reporting System
MAP	Malfunction Abatement Plan
MSDS	Material Safety Data Sheet
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standard for Hazardous Air Pollutants
NSPS	New Source Performance Standards
NSR	New Source Review
PS	Performance Specification
PSD	Prevention of Significant Deterioration
PTE	Permanent Total Enclosure
PTI	Permit to Install
RACT	Reasonable Available Control Technology
ROP	Renewable Operating Permit
SC	Special Condition
SCR	Selective Catalytic Reduction
SNCR	Selective Non-Catalytic Reduction
SRN	State Registration Number
TBD	To Be Determined
TEQ	Toxicity Equivalence Quotient
USEPA/EPA	United States Environmental Protection Agency
VE	Visible Emissions

### **POLLUTANT / MEASUREMENT ABBREVIATIONS**

acfm	Actual cubic feet per minute
BTU	British Thermal Unit
°C	Degrees Celsius
CO	Carbon Monoxide
CO <sub>2e</sub>	Carbon Dioxide Equivalent
dscf	Dry standard cubic foot
dscm	Dry standard cubic meter
°F	Degrees Fahrenheit
gr	Grains
HAP	Hazardous Air Pollutant
Hg	Mercury
hr	Hour
HP	Horsepower
H <sub>2</sub> S	Hydrogen Sulfide
kW	Kilowatt
lb	Pound
m	Meter
mg	Milligram
mm	Millimeter
MM	Million
MW	Megawatts
NMOC	Non-Methane Organic Compounds
NO <sub>x</sub>	Oxides of Nitrogen
ng	Nanogram
PM	Particulate Matter
PM <sub>10</sub>	Particulate Matter equal to or less than 10 microns in diameter
PM <sub>2.5</sub>	Particulate Matter equal to or less than 2.5 microns in diameter
pph	Pounds per hour
ppm	Parts per million
ppmv	Parts per million by volume
ppmw	Parts per million by weight
psia	Pounds per square inch absolute
psig	Pounds per square inch gauge
scf	Standard cubic feet
sec	Seconds
SO <sub>2</sub>	Sulfur Dioxide
TAC	Toxic Air Contaminant
Temp	Temperature
THC	Total Hydrocarbons
tpy	Tons per year
µg	Microgram
µm	Micrometer or Micron
VOC	Volatile Organic Compounds
yr	Year

## GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**
2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environment, Great Lakes, and Energy, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**
3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to Rule 210 (R 336.1210), operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**
4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**
5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to Rule 219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of Rule 219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environment, Great Lakes, and Energy. **(R 336.1219)**
6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**
7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**
8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.
9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.

10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.
11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of Rule 301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with Rule 303 (R 336.1303). **(R 336.1301)**
  - a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
  - b) A visible emission limit specified by an applicable federal new source performance standard.
  - c) A visible emission limit specified as a condition of this Permit to Install.
12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in Rule 370(2). **(R 336.1370)**
13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with Rule 1001 and Rule 1003, under any of the conditions listed in Rule 1001. **(R 336.2001)**

**EMISSION UNIT SPECIAL CONDITIONS**

**EMISSION UNIT SUMMARY TABLE**

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

<b>Emission Unit ID</b>	<b>Emission Unit Description (Including Process Equipment &amp; Control Device(s))</b>	<b>Flexible Group ID</b>
EUMVAR	The Main Ventilation Air Raise (MVAR) is the outlet from the fresh air ventilation system that is utilized to supply air to underground workers. Emissions produced by underground activities are vented through the MVAR. The underground ore production activities include vehicle travel, drilling, blasting, ore and development rock handling, backfill material handling, and mine heaters. Dust suppression systems, such as water sprays, are used to reduce emissions from ore and development rock handling underground.	NA
EUCOSA	The Coarse Ore Storage Area (COSA) is an enclosed building with short-term capacity to store production ore. Trucks from underground unload through plastic curtains in a partially enclosed unloading bay on the south side of the building. Road trucks are loaded by a front-end loader on the north side of the building, with the building doors closed during truck loading. The COSA contains a mobile rockbreaker.	NA
EUFUGITIVES	Fugitive emissions are produced by aboveground vehicle traffic, handling and storage of development rock in the Temporary Development Rock Storage Area (TDRSA), and handling and storage of aggregate and sand in the Aggregate Storage Area. Emissions will be minimized through paving of most plant roads, sweeping or watering of paved roads, watering of unpaved roads, and complying with the fugitive dust control plan.	NA
EUAGGSTOR	Aggregate storage building for handling pre-crushed stone and development rock unloaded from trucks in an enclosed storage bay. Aggregate/development rock is transferred by enclosed conveyor to the backfill plant. Emissions from indoor unloading are controlled by a fabric filter dust collector.	NA
EUCEMENTSILO1	A 250-ton capacity cement silo equipped with a bin vent fabric filter. The silo is loaded via pneumatic conveyors. Cement is screw augured from the silo to the backfill plant.	FGSILOS
EUCEMENTSILO2	A 250-ton capacity cement silo equipped with a bin vent fabric filter. The silo is loaded via pneumatic conveyors. Cement is screw augured from the silo to the backfill plant.	FGSILOS

<b>Emission Unit ID</b>	<b>Emission Unit Description (Including Process Equipment &amp; Control Device(s))</b>	<b>Flexible Group ID</b>
EUBACKFILLPLANT	Cement is discharged from the silos to the backfill plant, where it is blended with aggregate and/or development rock and water. Once blended, the mixture is loaded into mine trucks to be transported underground. In addition to cemented backfill, a limited amount of shotcrete will be produced in the backfill plant. The backfill plant is enclosed within a building and emissions are controlled by a fabric filter dust collector.	NA
EUGENERATOR1	A 2000 kW diesel fueled emergency generator, model year 2008. (This engine is subject to NESHAP ZZZZ and NSPS IIII.)	NA
EUSCREENPLANT	Development rock screening plant located in the TDRSA consisting of one grizzly hopper, one transfer conveyor from the grizzly hopper to the screen, one vibrating double-deck screen equipped with water spray, and three stacking conveyors.	NA

Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1291.

**EUMVAR**  
**EMISSION UNIT CONDITIONS**

**DESCRIPTION**

The Main Ventilation Air Raise (MVAR) is the outlet from the fresh air ventilation system that is utilized to supply air to underground workers. Emissions produced by underground activities are vented through the MVAR. The underground ore production activities include vehicle travel, drilling, blasting, ore and development rock handling, backfill material handling, and mine heaters.

**Flexible Group ID:** NA

**POLLUTION CONTROL EQUIPMENT**

Dust suppression will be applied via water truck and/or underground utility water hoses, as necessary to reduce emissions from underground roadways and underground ore and development rock handling. The water truck will be used to keep the decline damp. Muck piles, if left in muckbays for any period of time where they become dry, will be sprayed before being transferred. Some blast locations may be accessible for immediate wetting. Other locations may be more remote where underground load and haul equipment is operated by remote controls, making it difficult to operate spray equipment. However, if necessary to control emissions, dust suppression measures will be implemented upstream of the blast area.

**I. EMISSION LIMIT(S)**

<b>Pollutant</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Monitoring / Testing Method</b>	<b>Underlying Applicable Requirements</b>
1. PM	232 pounds per 24-hour day	Test Protocol*	EUMVAR	SC V.1	R 336.1224, R 336.1225, R 336.1331, 40 CFR 52.21 (c) & (d)
2. Nickel	0.21 pounds per 24-hour day	Test Protocol*	EUMVAR	SC V.1	R 336.1224, R 336.1225
3. Copper	0.18 pounds per 24-hour day	Test Protocol*	EUMVAR	SC V.1	R 336.1224, R 336.1225

\* Test Protocol shall specify averaging time.

- Visible emissions from EUMVAR shall not exceed a six-minute average of 5 percent opacity. **(R 336.1301, R 336.1331)**

**II. MATERIAL LIMIT(S)**

NA

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

NA

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

- The permittee shall not operate EUMVAR unless the dust suppression systems in the mine are installed, maintained, and operated in a satisfactory manner. **(R 336.1224, R 336.1225, R 336.1331, R 336.1910, 40 CFR 52.21 (c) & (d))**



**V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Upon request of the AQD District Supervisor, the permittee shall verify the PM, nickel, and copper emission rates from EUMVAR by testing at owner's expense, in accordance with Department requirements. The permittee shall use 40 CFR Part 60, Appendix A, Method 5 or an equivalent method approved by the AQD, to verify the PM emission rate. No less than 45 days prior to testing, the permittee shall submit a complete test plan to the AQD. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. **(R 336.1224, R 336.1225, R 336.1331, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21 (c) & (d))**

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall keep a daily record of water applications on underground roadways. The permittee shall keep all records on file for a period of at least five years and make them available to the Department upon request. **(R 336.1224, R 336.1225, R 336.1331, R 336.1910, 40 CFR 52.21 (c) & (d))**

**VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter / Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SVMVAR	128	65.0	R 336.1225, 40 CFR 52.21 (c) & (d)

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

## **EUEUCOSA EMISSION UNIT CONDITIONS**

### **DESCRIPTION**

The Coarse Ore Storage Area (COSA) is an enclosed building with short-term capacity to store production ore. Trucks from underground unload through plastic curtains in a partially enclosed unloading bay on the south side of the building. Road trucks are loaded by a front-end loader on the north side of the building, with the building doors closed during truck loading. The COSA contains a mobile rockbreaker.

**Flexible Group ID:** NA

### **POLLUTION CONTROL EQUIPMENT**

Plastic curtains and partially enclosed unloading bay and enclosed storage building and truck loading.

#### **I. EMISSION LIMIT(S)**

1. Visible emissions from EUCOSA shall not exceed a six-minute average of 5 percent opacity. **(R 336.1301, R 336.1331)**

#### **II. MATERIAL LIMIT(S)**

NA

#### **III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The permittee shall not unload ore into EUCOSA unless the unloading is conducted in the partially enclosed unloading bay. **(R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21 (c) & (d))**
2. The permittee shall not load ore into trucks in EUCOSA unless the doors are closed. **(R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21 (c) & (d))**
3. The permittee shall not store ore outside of the enclosed EUCOSA building. **(R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21 (c) & (d))**

#### **IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The permittee shall not unload ore into EUCOSA unless the plastic curtains are installed and maintained in a satisfactory manner. **(R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21 (c) & (d))**

#### **V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

#### **VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

**VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter / Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SVCOSA1 <sup>A</sup>	48	20	R 336.1225, 40 CFR 52.21 (c) & (d)
2. SVCOSA2 <sup>A</sup>	48	20	R 336.1225, 40 CFR 52.21 (c) & (d)
3. SVCOSA3 <sup>A</sup>	48	20	R 336.1225, 40 CFR 52.21 (c) & (d)
4. SVCOSA4 <sup>A</sup>	48	20	R 336.1225, 40 CFR 52.21 (c) & (d)

<sup>A</sup> This stack is not required to be discharged unobstructed vertically upwards.

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

## **EUFUGITIVES EMISSION UNIT CONDITIONS**

### **DESCRIPTION**

Fugitive emissions are produced by aboveground vehicle traffic, handling and storage of development rock in the Temporary Development Rock Storage Area (TDRSA), and handling and storage of aggregate and sand in the Aggregate Storage Area.

**Flexible Group ID:** NA

### **POLLUTION CONTROL EQUIPMENT**

Emissions will be minimized through paving of most plant roads, sweeping or watering of paved roads, watering of unpaved roads, and complying with the fugitive dust control plan.

#### **I. EMISSION LIMIT(S)**

1. Visible emissions from all wheel loaders and all truck traffic shall not exceed five (5) percent opacity. Compliance shall be demonstrated using Test Method 9D as defined in Section 324.5525(j) of Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451). **(R 336.1224, R 336.1225, R 336.1301)**
2. Visible emissions from each storage pile shall not exceed five (5) percent opacity. Compliance shall be demonstrated using Test Method 9D as defined in Section 324.5525(j) of Part 55, Air Pollution Control, of the Natural Resources and Act 451. **(R 336.1224, R 336.1225, R 336.1301)**

#### **II. MATERIAL LIMIT(S)**

NA

#### **III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The permittee shall not operate the facility unless the program for continuous fugitive emissions control for all plant roadways, the plant yard, all material storage piles, and all material handling operations specified in Appendix A, or an alternate plan approved by the AQD District Supervisor, has been implemented and is maintained. **(R 336.1224, R 336.1225, R 336.1301, R 336.1371, R 336.1372, 40 CFR 52.21 (c) & (d))**
2. The permittee shall not exceed a maximum equivalent of 17,140 50-ton ore trucks leaving the facility for each calendar year. **(R 336.1224, R 336.1225, R 336.1301, R 336.1371, R 336.1372, 40 CFR 52.21 (c) & (d))**
3. The permittee shall pass each truck through the Part 632 approved truck wash facility prior to the truck leaving the areas of the plant where contact with ore is possible, known as "contact areas." **(R 336.1224, R 336.1225, R 336.1301, R 336.1910, 40 CFR 52.21 (c) & (d))**
4. The permittee shall cover or apply a dust suppressant to all product haul trucks travelling on site, in accordance with the fugitive dust plan, to reduce fugitive dust emissions. **(R 336.1224, R 336.1225, R 336.1301, R 336.1371, R 336.1372, 40 CFR 52.21 (c) & (d))**

#### **IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The maximum area of uncovered development rock storage piles that the permittee may maintain at any one time is 8.6 acres. **(R 336.1224, R 336.1225, R 336.1371, R 336.1372, 40 CFR 52.21 (c) & (d))**

2. The maximum area of uncovered aggregate and sand storage piles that the permittee may maintain at any one time is 5.0 acres. **(R 336.1224, R 336.1225, R 336.1371, R 336.1372, 40 CFR 52.21 (c) & (d))**
3. The permittee shall pave the plant roadways routinely travelled by production trucks and product haul trucks. Routinely travelled roadways include the facility access road (beginning at the facility gate) and roads connecting to the portal, the backfill plant, the COSA, the mine services building, the TDRSA, the aggregate building, and the truck wash. This condition does not require paving of temporary/transient travelways within the Aggregate Storage Area or TDRSA or roadways that will not routinely be travelled by production trucks and product haul trucks, such as the perimeter security road. **(R 336.1224, R 336.1225, R 336.1301, R 336.1371, R 336.1372, 40 CFR 52.21 (c) & (d))**

**V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor and make them available by the 15th day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition. **(R 336.1224, R 336.1225, R 336.1371, R 336.1372, 40 CFR 52.21 (c) & (d))**
2. The permittee shall keep a daily record of the type, size (weight) and number of ore transport trucks leaving the facility. Each month, in a manner acceptable to the AQD District Supervisor, the permittee shall calculate an equivalent number of 50-ton ore transport loads leaving the facility based on that month's daily records. Each calendar year, in a manner acceptable to the AQD District Supervisor, the permittee shall calculate an equivalent number of 50-ton ore transport trucks leaving the facility based on that year's monthly records. The permittee shall keep all records and calculations on file for a period of at least five years and make them available to the Department upon request. **(R 336.1224, R 336.1225, R 336.1371, R 336.1372, 40 CFR 52.21 (c) & (d))**

**VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTION(S)**

NA

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

## **EUAGGSTOR EMISSION UNIT CONDITIONS**

### **DESCRIPTION**

Aggregate storage building for handling pre-crushed stone and development rock unloaded from trucks in an enclosed storage bay. Aggregate/development rock is transferred by enclosed conveyor to the backfill plant.

**Flexible Group ID:** NA

### **POLLUTION CONTROL EQUIPMENT**

Emissions from indoor unloading are controlled by a fabric filter dust collector.

#### **I. EMISSION LIMIT(S)**

1. Visible emissions from EUAGGSTOR shall not exceed a six-minute average of 5 percent opacity. **(R 336.1301, R 336.1331)**

#### **II. MATERIAL LIMIT(S)**

NA

#### **III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The permittee shall not operate EUAGGSTOR unless a malfunction abatement plan (MAP) as described in Rule 911(2), for all air pollution control equipment, has been submitted within 365 days of permit issuance, and is implemented and maintained. The MAP shall, at a minimum, specify the following:
  - a) A complete preventative maintenance program including identification of the supervisory personnel responsible for overseeing the inspection, maintenance, and repair of air-cleaning devices, a description of the items or conditions that shall be inspected, the frequency of the inspections or repairs, and an identification of the major replacement parts that shall be maintained in inventory for quick replacement.
  - b) An identification of the source and air-cleaning device operating variables that shall be monitored to detect a malfunction or failure, the normal operating range of these variables, and a description of the method of monitoring or surveillance procedures.
  - c) A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.

If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days, if new equipment is installed or upon request from the AQD District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1910, R 336.1911, 40 CFR 52.21 (c) & (d))**

2. The permittee shall not unload aggregate in EUAGGSTOR unless the doors are closed. **(R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21 (c) & (d))**

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The permittee shall not operate EUAGGSTOR unless the fabric filter dust collector is installed, maintained, and operated in a satisfactory manner. **(R 336.1331, R 336.1910, 40 CFR 52.21 (c) & (d))**

**V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

**VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter / Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SVAGGFAN1 <sup>A</sup>	48	27.5	R 336.1225, 40 CFR 52.21 (c) & (d)
2. SVAGGFAN2 <sup>A</sup>	48	27.5	R 336.1225, 40 CFR 52.21 (c) & (d)
3. SVAGGFAN3 <sup>A</sup>	48	27.5	R 336.1225, 40 CFR 52.21 (c) & (d)
4. SVAGGFAN4 <sup>A</sup>	48	27.5	R 336.1225, 40 CFR 52.21 (c) & (d)
5. SVAGGBH <sup>A</sup>	30	30	R 336.1225, 40 CFR 52.21 (c) & (d)

<sup>A</sup> This stack is not required to be discharged unobstructed vertically upwards.

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

## **EUBACKFILL EMISSION UNIT CONDITIONS**

### **DESCRIPTION**

Cement is discharged from the silos to the backfill plant, where it is blended with sand, aggregate, and/or development rock and water. Once blended, the mixture is loaded into mine trucks to be transported underground. In addition to cemented backfill, a limited amount of shotcrete will be produced in the backfill plant.

**Flexible Group ID:** NA

### **POLLUTION CONTROL EQUIPMENT**

The backfill plant is enclosed within a building and emissions are controlled by a fabric filter dust collector.

#### **I. EMISSION LIMIT(S)**

1. Visible emissions from EUBACKFILL shall not exceed a six-minute average of 5 percent opacity. **(R 336.1301, R 336.1331)**

#### **II. MATERIAL LIMIT(S)**

NA

#### **III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The permittee shall not operate EUBACKFILL unless a malfunction abatement plan (MAP) as described in Rule 911(2), for all air pollution control equipment, has been submitted within 365 days of permit issuance, and is implemented and maintained. The MAP shall, at a minimum, specify the following:
  - a) A complete preventative maintenance program including identification of the supervisory personnel responsible for overseeing the inspection, maintenance, and repair of air-cleaning devices, a description of the items or conditions that shall be inspected, the frequency of the inspections or repairs, and an identification of the major replacement parts that shall be maintained in inventory for quick replacement.
  - b) An identification of the source and air-cleaning device operating variables that shall be monitored to detect a malfunction or failure, the normal operating range of these variables, and a description of the method of monitoring or surveillance procedures.
  - c) A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.

If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days, if new equipment is installed or upon request from the AQD District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1910, R 336.1911, 40 CFR 52.21 (c) & (d))**

2. The permittee shall not operate EUBACKFILL unless it is located inside an enclosed building. **(R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21 (c) & (d))**



3. The permittee shall transfer aggregate, development rock, sand, and cement to EUBACKFILL using enclosed conveyors/augers. (R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21 (c) & (d))

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The permittee shall not operate EUBACKFILL unless the fabric filter dust collector is installed, maintained, and operated in a satisfactory manner. (R 336.1331, R 336.1910, 40 CFR 52.21 (c) & (d))

**V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. (R 336.1201(3))

NA

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. (R 336.1201(3))

NA

**VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVBACKFILL <sup>A</sup>	25	25	R 336.1225, 40 CFR 52.21 (c) & (d)

<sup>A</sup> This stack is not required to be discharged unobstructed vertically upwards.

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

**EUGENERATOR1**  
**EMISSION UNIT CONDITIONS**

**DESCRIPTION**

A 2000 kW diesel fueled generator, model year 2008. (This engine is subject to NESHAP ZZZZ and to NSPS IIII.)

**Flexible Group ID:** NA

**POLLUTION CONTROL EQUIPMENT**

NA

**I. EMISSION LIMIT(S)**

<b>Pollutant</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Monitoring / Testing Method</b>	<b>Underlying Applicable Requirements</b>
1. NMHC + NOx	6.4 g/kW-hr	Test Method	EUGENERATOR 1	SC VI.2	40 CFR 60.4205, R 336.1702(b)
2. CO	3.5 g/kW-hr	Test Method	EUGENERATOR 1	SC VI.2	40 CFR 60.4205
3. PM	0.20 g/kW-hr	Test Method	EUGENERATOR 1	SC VI.2	40 CFR 60.4205

**II. MATERIAL LIMIT(S)**

1. The permittee shall burn only diesel fuel, in EUGENERATOR1, with the maximum sulfur content of 15 ppm (0.0015 percent) by weight. **(R 336.1205(1)(a), R 336.1402(1), 40 CFR 60.4207, 40 CFR 80.510)**

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The permittee shall not operate EUGENERATOR1 for more than 500 hours per year on a 12-month rolling time period basis as determined at the end of each calendar month. **(R 336.1205(1)(a) & (3), R 336.1225, R 336.1702(a), 40 CFR 52.21 (c) & (d))**
2. The permittee may operate EUGENERATOR1 for no more than 100 hours per 12-month rolling time period as determined at the end of each calendar month for the purpose of necessary maintenance checks and readiness testing, provided that the tests are recommended by Federal, State, or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Permittee may petition the Department for approval of additional hours to be used for maintenance checks and readiness testing. A petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency internal combustion engines beyond 100 hours per year. **(40 CFR 60.4211)**
3. The permittee shall install, maintain, and operate EUGENERATOR1 according to the manufacturer written instructions, or procedures developed by the owner/operator and approved by the engine manufacturer, over the entire life of the engine. **(R 336.1205(1)(a) & (3), R 336.1225, R 336.1702(b), R 336.1911, 40 CFR 52.21 (c) & (d), 40 CFR 60.4206, 40 CFR 60.4211)**

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The permittee shall equip and maintain EUGENERATOR1 with a non-resettable hours meter to track the operating hours. **(R 336.1205(1)(a) & (3), R 336.1225, 40 CFR 60.4209)**

2. The nameplate capacity of EUGENERATOR1 shall not exceed 2000 kW-hr. **(R 336.1205(1)(a) & (3))**

#### **V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Upon request of the AQD District Supervisor, the permittee shall verify NMHC + NO<sub>x</sub>, CO and PM emission rates from EUGENERATOR1, by testing at owner's expense, in accordance with Department requirements or by providing manufacturer certification documentation as required in SC VI.2. No less than 60 days prior to testing, the permittee must submit a complete stack-testing plan to the AQD. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. **(R 336.1702(b), R 336.2001, R 336.2003, R 336.2004, 40 CFR 60.4211)**

#### **VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1205(1)(a) & (3), 40 CFR 52.21 (c) & (d))**
2. The permittee shall keep, in a satisfactory manner, a record of testing required in SC V.1 or manufacturer certification documentation indicating that EUGENERATOR1 meets the applicable emission limitations contained in the federal Standards of Performance for New Stationary Sources 40 CFR Part 60 Subpart IIII. The permittee shall keep all records on file and make them available to the Department upon request. **(40 CFR 60.4211)**
3. The permittee shall monitor and record the hours of operation of EUGENERATOR1 during emergencies and non-emergencies, on a monthly and 12-month rolling time period basis, in a manner acceptable to the District Supervisor, Air Quality Division. The permittee shall record the time of operation of EUGENERATOR1 and the reason it was in operation during that time. **(R 336.1205(1)(a) & (3), 40 CFR 60.4211, 40 CFR 60.4214)**
4. The permittee shall keep, in a satisfactory manner, fuel supplier certification records for EUGENERATOR1 for each delivery of the diesel fuel oil. The certification shall include the name of the oil supplier, sulfur content, and a statement that the fuel complies with the specifications under the definition of distillate oil in 40 CFR 60.41c. **(R 336.1205(1)(a) & (3), 40 CFR 80.510)**

#### **VII. REPORTING**

NA

#### **VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter / Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SVGENERATOR1	16	20	R 336.1225, 40 CFR 52.21 (c) & (d)

**IX. OTHER REQUIREMENT(S)**

1. The permittee shall comply with all provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60 Subparts A and IIII, as they apply to EUGENERATOR1. **(40 CFR Part 60 Subparts A & IIII, 40 CFR 63.6590)**
2. The permittee shall comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants, 40 CFR Part 63, Subpart ZZZZ for Stationary Reciprocating Internal Combustion Engines, as they apply to EUGENERATOR1. **(40 CFR Part 63 Subpart ZZZZ)**

**Footnotes:**

<sup>1</sup>This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

## **EUSCREENPLANT EMISSION UNIT CONDITIONS**

### **DESCRIPTION**

Development rock screening plant located in the TDRSA consisting of one grizzly hopper, one transfer conveyor from the grizzly hopper to the screen, one vibrating double-deck screen, and three stacking conveyors.

**Flexible Group ID:** NA

### **POLLUTION CONTROL EQUIPMENT**

The vibrating double-deck screen is equipped with water spray.

### **I. EMISSION LIMIT(S)**

1. Visible emissions from EUSCREENPLANT shall not exceed a six-minute average of 5 percent opacity. **(R 336.1224, R 336.1225, R 336.1331)**

### **II. MATERIAL LIMIT(S)**

1. The permittee shall not process more than 440,920 tons of development rock in EUSCREENPLANT per 12-month rolling time period as determined at the end of each calendar month. **(R 336.1224, R 336.1225, 40 CFR 52.21 (c) & (d))**
2. The permittee shall not process any asbestos tailing or asbestos containing waste materials in EUSCREENPLANT pursuant to the National Emission Standards for Hazardous Air Pollutants, 40 CFR Part 61 Subpart M. **(40 CFR Part 61 Subpart M)**

### **III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The permittee shall not operate EUSCREENPLANT unless the program for continuous fugitive emissions control for all plant roadways, the plant yard, all material storage piles, and all material handling operations specified in Appendix A, or an alternate plan approved by the AQD District Supervisor, has been implemented and is maintained. **(R 336.1224, R 336.1225, R 336.1301, R 336.1371, R 336.1372, 40 CFR 52.21 (c) & (d))**

### **IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The permittee shall not operate EUSCREENPLANT unless the water spray on the vibrating double-deck screen is installed, maintained, and operated in a satisfactory manner. The water spray shall be operated as necessary to comply with applicable emission limits. **(R 336.1224, R 336.1225, 40 CFR 52.21 (c) & (d))**

### **V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor and make them available by the 15th day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition. **(R 336.1224, R 336.1225, 40 CFR 52.21 (c) & (d))**
2. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period, as determined at the end of each calendar month, records of the amount of material processed in EUSCREENPLANT. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1224, R 336.1225, 40 CFR 52.21 (c) & (d))**

**VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTION(S)**

NA

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

## FLEXIBLE GROUP SPECIAL CONDITIONS

### FLEXIBLE GROUP SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

<b>Flexible Group ID</b>	<b>Flexible Group Description</b>	<b>Associated Emission Unit IDs</b>
FGSILOS	Two 250-ton capacity cement silos, each equipped with a bin vent fabric filter. The silos are loaded via pneumatic conveyors. Cement is screw augured from the silos to the backfill plant.	EUCEMENTSILO1 EUCEMENTSILO2

## **FGSILOS**

### **FLEXIBLE GROUP CONDITIONS**

#### **DESCRIPTION**

Two 250-ton capacity cement silos. The silos are loaded via pneumatic conveyors. Cement is screw augured from the silos to the backfill plant.

**Emission Unit:** EUCEMENTSILO1, EUCEMENTSILO2

#### **POLLUTION CONTROL EQUIPMENT**

Bin vent fabric filters

#### **I. EMISSION LIMIT(S)**

1. Visible emissions from FGSILOS shall not exceed a six-minute average of 5 percent opacity. **(R 336.1301, R 336.1331)**

#### **II. MATERIAL LIMIT(S)**

NA

#### **III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The permittee shall not operate FGSILOS unless a malfunction abatement plan (MAP) as described in Rule 911(2), for all air pollution control equipment, has been submitted within 365 days of permit issuance, and is implemented and maintained. The MAP shall, at a minimum, specify the following:
  - a) A complete preventative maintenance program including identification of the supervisory personnel responsible for overseeing the inspection, maintenance, and repair of air-cleaning devices, a description of the items or conditions that shall be inspected, the frequency of the inspections or repairs, and an identification of the major replacement parts that shall be maintained in inventory for quick replacement.
  - b) An identification of the source and air-cleaning device operating variables that shall be monitored to detect a malfunction or failure, the normal operating range of these variables, and a description of the method of monitoring or surveillance procedures.
  - c) A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.

If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days, if new equipment is installed or upon request from the AQD District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1910, R 336.1911, 40 CFR 52.21 (c) & (d))**

#### **IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The permittee shall not operate EUCEMENTSILO1 or EUCEMENTSILO2 unless the respective bin vent filter is installed, maintained, and operated in a satisfactory manner. **(R 336.1331, R 336.1910, 40 CFR 52.21 (c) & (d))**



**V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. (R 336.1201(3))

NA

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. (R 336.1201(3))

NA

**VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter / Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SVCEMENTSILO1 <sup>A</sup>	20.0 x 20.0	55	R 336.1225, 40 CFR 52.21 (c) & (d)
2. SVCEMENTSILO2 <sup>A</sup>	20.0 x 20.0	55	R 336.122540 CFR 52.21 (c) & (d)

<sup>A</sup> This stack is not required to be discharged unobstructed vertically upwards.

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

**APPENDIX A: Fugitive Dust Control Plan**

Eagle Mine LLC

Fugitive Dust Control Plan

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## 1 Introduction

This Fugitive Dust Control Plan has been prepared as part of the Air Permit to Install Application for proposed mining operations at the Eagle Project Site located in Marquette County. As proposed, the surface portion of the mining operations will be conducted at two locations that are situated approximately within one half mile from each other. The larger main site will incorporate most of the surface operations, including management of ore from underground and the backfill plant. The smaller auxiliary site will include the ventilation raise. The potential sources of fugitive dust that will be associated with the operations will include the following:

- ◆ Temporary Development Rock Storage Area
- ◆ Aggregate Storage Area
- ◆ Roadways

The remainder of this Plan describes in more detail important aspects of the Fugitive Dust Control Plan.

## 2 Traffic Patterns Within the Facility

All on-site roadways routinely travelled by ore production trucks and ore product haul trucks will be paved. A portion of the on-site roadway travelled by off-site aggregate and sand delivery trucks will be unpaved.

A control program will be instituted to minimize fugitive dust generated from on-site truck traffic. A street sweeper may be used to clean the paved roadways. Paved roads may also be washed using water trucks during drier times of the year and when freezing conditions are not occurring. Unpaved roads may be watered using water trucks or have dust suppressants applied during drier times of year and when freezing conditions are not occurring.

On site staff will continually monitor roadways. Paved road areas will be swept as necessary to meet applicable opacity requirements. The goal is to minimize visible dust emissions from roadways when wind speeds do not exceed 25 mph. Attached is the Roadway Dust Suppression Form, which will be completed on a daily basis.

The materials being transported at the Eagle Mine facility are expected to have silt content routinely less than 1%. Trucks transporting coarse ore off-site will be routinely covered with a hard cover for general reduction of fugitive dust. In general, for any material having silt contents as listed below, the appropriate measures will be employed:

- For materials having silt contents of 20% or more, completely enclosed trucks, tarps, or other covers will be used.
- For materials having silt content between 5% and 20%, tarps, chemical dust suppressants, or watering to maintain a wet surface condition will be employed.
- For materials having silt content between 1% and 5%, trucks will be loaded such that no part of the load in contact with any sideboard, side panel, or rear part of the load comes within six inches of the top part of the truck enclosure.

## 3 Locations of Storage Piles and Controls

### Temporary Development Rock Storage

The TDRSA is one of only two storage areas that will be exposed to ambient conditions. It is located in the northwestern portion of the main site. During early portions of the operations, the TDRSA will store development rock from development of mine drifts, ramps, decline and excavation of stope areas underground to access the ore body. However, once the underground facility is developed and certain stope areas are mined out, development rock will be removed from the storage pile and returned underground for use in backfilling secondary stope areas.

#### 4 Routine Maintenance

##### Street Sweeper

Sufficient replacement parts and supplies will also be retained on-site for the street sweeper used for on-site roadways. The street sweeper will be serviced on a regular schedule and inspected to ensure equipment is in operable condition.

#### 5 Recordkeeping

To ensure the Fugitive Dust Control Plan is effective, records will be maintained for the following activities:

- ◆ Log sheets will be maintained that will record the on-site roadway sweeping and wetting schedules. If sweeping or wetting is not conducted due to precipitation, snowpack, freezing weather, or because it is not necessary to meet applicable opacity limits, this information should also be recorded on the form. While the intent is for log sheets to be completed on a daily basis for each road segment, it is recognized that during times of the year when snow cover is on the ground, the sweeping and/or watering programs may not be in effect.



