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Appendix S. Fugitive Dust Control Plan

Mesabi Metallics Company LLC

Fugitive Dust Control Plan



April 2007
Revised August 2009
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Mesabi Metallics Company LLC

Fugitive Dust Control Plan

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Tables

Table 1: List of Fugitive Sources

1.0 Introduction

The Mesabi Metallics Company LLC (MMCL) facility is located on the Mesabi Iron Range in Nashwauk, Itasca County, Minnesota. Their predecessor, Essar Steel Minnesota, L.L.C. (Essar) purchased Minnesota Steel Industries (MSI) in October 2007. Air Permit 06100067 was issued to Essar in October 2007. On August 4, 2009, MPCA issued Air Emissions Permit No. 06100067-003 to Essar. The permit authorizes construction of a new facility and a Part 70 operating permit, which will authorize MMCL to mine iron ore and to produce finished steel near Nashwauk, Minnesota.

The purpose of this document is to comply with the requirements set forth in 40 CFR 63 Subparts A (General Provisions), RRRRR (Taconite Maximum Achievable Control Technology), BACT and, case-by-case MACT for developing and implementing a Fugitive Emissions Control Plan. The following Fugitive Dust Control Plan meets these requirements and is based on the dust control best management practices (BMPs) used by the mining industry on the Mesabi Iron Range of Northern Minnesota.

2.0 Plan Objectives

The Fugitive Dust Control Plan identifies MMCL control measures and practices to minimize and control fugitive dust as required by the Title V permit. The plan defines the following:

- Procedures that MMCL personnel will follow to control emissions
- Fugitive dust levels requiring corrective actions
- Steps that will be followed to bring emissions within appropriate ranges
- Steps that MMCL will take to demonstrate that corrective procedures are followed and to verify the facility is controlling avoidable fugitive emissions

To meet these objectives, the Fugitive Dust Control Plan:

- Identifies all fugitive emission sources listed in the Title V permit application.
- Identifies the primary and contingent control measures and practices to control and minimize fugitive emissions.
- Identifies visible emissions observation and corrective action requirements.
- Identifies fugitive dust control recordkeeping requirements.
- Identifies fugitive dust control notification requirements.
- Describes fugitive dust control training elements.

3.0 Fugitive Emissions Sources

Table 1 lists the fugitive emission sources identified in the Title V permit, briefly describes the measures and practices employed to control fugitive emissions at each source, and identifies the fugitive emission sources that require visible emission observation. These sources are further described below.

3.1 *Haul Roads and Service Roads*

Haul road sources subject to the plan include:

- Haul Road Emissions (FUGI 13). This source involves 240-ton trucks hauling materials on unpaved roads. The materials being hauled include surface overburden and waste rock/lean taconite (hauled between the pit and their respective discharge areas), taconite ore (hauled between the pit and the primary crusher) and cobber reject (hauled from the crushers to its designated stockpile). The haul roads on the site will be approximately 10 miles long with fifty foot wide lanes.
- Service Road Emissions (FUGI 20). This source involves light vehicles traveling on unpaved roads between the main plant area and the crusher, mining and tailings basin facilities. The service road will be approximately 13 miles long and fifty feet wide.
- Controlling haul road fugitive dust is important for employee safety and equipment maintenance as well as protecting the air quality of the area. MMCL is committed to minimizing haul road emissions. Haul road dust suppression activities are described in Section 4.

3.2 *Paved Roads*

Paved road emissions (FUGI 6) occur on the access road to the concentrator plant parking lot and on the east and west entrances to the main plant area. 2.5 miles of paved road are included in the emission inventory and are assumed to be traveled by cars, light trucks, and freight trucks.

3.3 *Stockpiles*

Stockpile sources covered by the dust plan include:

- Oxide Product Stockpile Wind Erosion (FUGI 27)
- Overburden/Waste Rock Area Wind Erosion (FUGI 29)
- Cobber Rejects Pile Wind Erosion (FUGI 36)
- Cobber Rejects Stockpile Wind Erosion (FUGI 39)
- 120K ton Concentrate Stockpile Wind Erosion (FUGI 41)
- DRI Stockpile Wind Erosion (FUGI 44)
- DRI Remet Bunker Wind Erosion (FUGI 49)
- Oversize CDRI Bunker Wind Erosion (FUGI 52)
- Grizzly Stockpile Wind Erosion (FUGI 61)
- Processed Slag Piles Wind Erosion (FUGI 82)
- Non-metallic Slag Stockpile Wind Erosion (FUGI 83)
- Limestone and Dolomite Small Stockpile Wind Erosion (FUGI 85)

- Limestone and Dolomite Large Stockpile Wind Erosion (FUGI 86)
- Mine Emergency Primary Crusher Feed Pile Wind Erosion (FUGI 87)
- Oxide Fines Stockpile Wind Erosion (FUGI 91)

3.4 Materials Transfer Points

Several fugitive dust sources are related to the transfer of materials in the mining and crushing, concentrator, pelletizer, direct reduced iron, steel mill, and slag processing areas. These sources include:

- Railcar Loading (FUGI 11) – FEL railcar loading of DRI product for periodic sale to off-site customers.
- Drop onto Cobber Rejects Pile (FUGI 35) – transferring of taconite ore from a conveyor onto the Cobber rejects pile.
- Drop onto 120K ton Concentrate Pile (FUGI 40) – conveyor transfer onto the 120K ton concentrate pile.
- DRI Stockpile Stacking Conveyor (FUGI 43) – conveyor transfer of DRI from a conveyor onto the periodic DRI stockpile.
- Oxide Fines Bin Discharge (FUGI 46) – conveyor transfer of oxide fines into the oxide fines bunker.
- Oxide Fines Return to Re grind Mill (FUGI 47) – transfer of oxide fines to the re grind mill by use of a loader.
- DRI Drop into Remet Bunker (FUGI 48) – conveyor transfer of off-spec DRI from a conveyor into the Remet Bunker.
- DRI Remet Return to DRI Reclaim Hopper (FUGI 50) - transfer of off-spec DRI from the remet bunker to the oxide feed system by use of a loader.
- Oversize CDRI Drop into Bunker (FUGI 51) – conveyor transfer of cold DRI from a conveyor into a bunker.
- Oversize CDRI to EAF by Scrap Bucket (FUGI 53) – transfer of oversize cold DRI to the EAF by use of a loader/scrap bucket.
- CDRI Drop into Line I EAF Feed Collection Chute (FUGI 54) – conveyor transfer of CDRI into the EAF feed collection chute.
- Lime/Carbon Bucket Elevator (FUGI 56) – transfer of material from the bucket elevator to a conveyor.
- Lime/Carbon Tripper Conveyor Drop (FUGI 57) – conveyor transfer of melt shop additives from a conveyor into day bins.
- Slag Dumping (FUGI 58) – molten slag transfer from slag pots to the slag pits.
- Digging Pits/Breaking Slag (FUGI 59) – retrieval and breaking of solidified slag prior to processing.
- Loading Grizzly Stockpile (FUGI 60) – loader activity to move slag material from the slag dumping station to the grizzly stockpile.

- Grizzly Stockpile Loadout (FUGI 62) and Grizzly Loading (FUGI 63) – loading slag material from the grizzly stockpile into the grizzly.
- Grizzly Oversize to Slag Dumping (FUGI 64) – transfer of material from the grizzly back to the slag dumping area for additional size reduction.
- Grizzly/Feeder (FUGI 65) – transfer of broken slag material from the grizzly onto a conveyor.
- Slag Transfer Conveyor (FUGI 66) – transfer of slag material from a conveyor to the slag screen.
- Slag Screen (FUGI 67) – transfer of slag material from the slag screen to either a conveyor or the slag crusher.
- Screened Slag Conveyor (FUGI 68) – conveyor to conveyor transfer of screened slag.
- Screened Slag Cobber (FUGI 69) – separation of screened slag into metallic and non-metallic fractions.
- Non-metallics Stacker No.1 (FUGI 70) and Non-metallics Stacker No. 2 (FUGI 71) – conveyor transfer of non-metallic slag materials to a stockpile.
- Metallics Stacker No.1 (FUGI 72) and Metallics Stacker No. 2 (FUGI 73) – conveyor transfer of metallic slag materials from two conveyors to a stockpile.
- Slag Crusher (FUGI 74) – transfer of crushed slag from the slag crusher to a conveyor.
- Crusher By-pass Conveyor (FUGI 75) – conveyor to conveyor transfer of slag material.
- Crushed Slag Cobber (FUGI 76) – separation of crushed slag into metallic and non-metallic fractions.
- Crushed Metallics Stacker (FUGI 77) – transfer of metallic material from a conveyor to a stockpile.
- Crushed Non-metallics Screen (FUGI 78) - transfer of non-metallic slag material from the screen to a conveyor.
- Crushed Non-metallics Stacker No.1 (FUGI 79) and Crushed Non-metallics Stacker No. 2 (FUGI 80) – transfer of crushed non-metallic materials from two conveyors to a stockpile.
- Metallics Return to EAF (FUGI 81) – transfer by loader of crushed metallic slag from a stockpile to the EAF feed collection chutes.
- Mine Emergency Primary Crusher Feed Load (FUGI 88)
- Oxide Fines Stockpile Loadout (FUGI 92)
- Limestone and Dolomite Small Stockpile Loading (FUGI 94)
- Emergency product conveyor (FUGI 98)
- Oxide Product Stockpile Stacking Conveyor (FUGI 99) – conveyor transfer of oxide product onto the oxide product stockpile.

3.5 Truck Loading and Unloading

There are multiple fugitive sources associated with Truck Loading and Unloading:

- Non-metallics Loadout (FUGI 5) – transfer by loader of crushed non-metallic slag material from a stockpile to trucks.
- Crude Ore Loadout (FUGI 16) – transfer of blasted ore by shovel to ore trucks.
- Non-metallics Unloading to Off-site Sale or On-site Stockpile (FUGI 17) - the unloading of non-metallic material from a truck to an on-site stockpile.
- Overburden Loadout (FUGI 31) – transfer of blasted waste rock by shovel to trucks.
- Overburden Unloading (Truck) (FUGI 32) – transfer of blasted overburden by shovel to ore trucks.
- Waste Rock Loadout (FUGI 33) – transfer of blasted waste rock by shovel to ore trucks.
- Waste Rock Unloading (Truck) (FUGI 34) – ore truck unloading of waste rock at the stockpiles.
- Cobber Rejects Pile Loadout (FUGI 37) – use of a loader and truck to haul the cobber rejects to the cobber rejects stockpile.
- Cobber Rejects Unloading (Truck) (FUGI 38) – unloading of cobber rejects from a truck to the stockpile.
- Lump Lime/Carbon Unloading (FUGI 55) - unloading of meltshop additives from a truck onto a conveyor.
- DRI Reclaim to Meltshop/Railcar (FUGI 19) – DRI product pickup from stockpile by front end loader.
- 120K ton Concentrate Stockpile Loadout (FUGI 42) – transfer of concentrate to a conveyor by use of a loader.
- Oxide Product Stockpile Loading (FUGI 90)
- Limestone and Dolomite Small Stockpile Loadout (FUGI 95)
- Limestone and Dolomite Large Stockpile Loading (FUGI 96)
- Limestone and Dolomite Large Stockpile Loadout (FUGI 97)

3.6 Tailings Basin

There are three fugitive sources associated with the tailings basin:

- Grading at Tailings Basin (FUGI 24) – dike building and maintenance.
- Dozer activity at Tailings Basin (FUGI 25) – dike building and maintenance.
- Tailings Basin Wind Erosion (FUGI 26) – tailings basin beach area that is exposed to wind erosion prior to dust control measures.

3.7 Miscellaneous Sources

There are some fugitive sources listed below that do not fall under the categories described above:

- Drilling (FUGI 30)
- Overburden/Waste Rock Bulldozer (FUGI 28)

4.0 Operating Practices and Control Measures

The operating practices and control measures that will be implemented and recorded for the fugitive dust sources identified in Section 3 are described below. MMCL will train and assign appropriate personnel the responsibility to control fugitive emissions in their areas of responsibility.

4.1 Haul Roads and Service Roads (FUGI 13, FUGI 20)

Primary Controls: Watering and other dust suppressant application, limited vehicle speed, road maintenance including crushed rock surfacing, grading, and scarifying as needed depending on road conditions.

Contingent Controls: Increased application of primary controls, further slowing of vehicle speeds, limiting vehicle movements and/or stopping vehicle movements on-site altogether at the affected area.

Practices: The operating practices MMCL will use include, but are not limited to the following:

- MMCL will check the weather forecast and meteorological conditions and perform daily visible emissions checks on all active haul roads during daylight hours. Haul truck drivers will also observe for visible emissions during the shift and report by radio as needed. If visible emissions are observed during the visible emissions check or are reported by an equipment operator, MMCL will record the observation in the daily visible emissions report, investigate the condition, and take appropriate corrective action including contingent controls to address the visible emissions. The observation of visible emissions does not, in and of itself, demonstrate noncompliance with any applicable requirement but is a signal to trigger investigation and, if necessary, reasonable and appropriate corrective action.
- MMCL will maintain daily visible emission check reports based on the visible emissions checks. An exception report will be filed if visible emissions cannot be controlled by usual control strategies. Examples of such exceptions may be water wagon breakdown or extraordinary weather events (extremely hot, dry, freeze-drying, etc.). Employees will inform their supervisor of an exception condition upon discovery so that the report can be filled out.
- In non-freezing conditions, dust will be controlled by the following strategies:
 - Water will be applied to the active haul roads during the day and afternoon shifts, as required by weather, traffic, and road conditions. Water trucks will be dispatched and unpaved roads will be watered if excessive dusting is encountered. Some weather conditions during the summer months, such as low humidity and high winds, require a higher water frequency. The frequency and amount of water application is adjusted depending on weather conditions.
 - Haul roads will be graded as required.
 - Crushed and screened rock will be added to the road surface to minimize fugitive dust generation.
 - Chemical dust suppressant may also be applied to some high traffic areas for dust control as needed.
 - Slowing of vehicle speeds, limiting vehicle movements and/or stopping vehicle movements altogether at the affected area.

- In freezing conditions, dust will be controlled by the following strategies:
 - Solid or liquid chemical dust suppressant will be applied to the haul road in late fall prior to freeze up.
 - Haul roads will be scarified as necessary.
 - New haul road material will be applied as needed.
 - Slowing of vehicle speeds, limiting vehicle movements and/or stopping vehicle movements altogether at the affected area.
- MMCL will maintain adequate watering capacity, including backup in the event of breakdown, to control dust during typical summer conditions.
- MMCL will maintain daily watering records and chemical application records. The records will include the watering truck identification number, the number of water loads applied per shift, the location of applied water loads, and the operator name. MMCL will equip each watering truck with the same GPS monitoring system used by the other haul trucks.
- MMCL will rely on National Weather Service (NWS) reports from the Hibbing Airport to provide a record of daily precipitation and humidity, high and low temperature, wind speed and direction readings, and dew point.
- Vehicle miles traveled (VMT) will be calculated annually based on mine production and a record will be kept on site. This information will be sent to the MPCA annually for incorporating into the annual emissions inventory.
- MMCL will evaluate new technologies or methods in dust suppression for their technical and economic feasibility as they become commercially available.
- Haul Road FUGI 13 has an 80% control efficiency and Service Road FUGI 20 has an 80% control efficiency due to the availability of watering activities and addition of chemical dust suppressant during freezing conditions.

Recordkeeping: MMCL will maintain the following records on site for a minimum of five years:

- Haul Road Fugitive Emissions Exception Report
- Daily Water Truck Reports
- Daily weather information as reported by the NWS at the Hibbing Airport.
- The application of chemical dust suppressants will be recorded based on the amount of chemical applied.
- Daily Visible Emissions Checklists
- An exception report if needed

4.2 In Pit Haul Roads (FUGI 100)

Primary Controls: Watering and other dust suppressant application, road maintenance including crushed rock surfacing, grading, and scarifying as needed depending on road conditions.

Contingent Controls: Increased application of primary controls, further slowing of vehicle speeds, limiting vehicle movements and/or stopping vehicle movements on-site altogether at the affected area.

Practices: The operating practices MMCL will use include, but are not limited to the following:

To insure MMCL is meeting the 90% control efficiency MMCL will use the following calculation to insure adequate water is applied to the in pit haul roads. Watering is not required if 0.25 inches of precipitation were received during the previous day, and that watering may be discontinued during precipitation. Watering may also be discontinued to ensure worker safety during adverse weather conditions. However, if visible emissions are observed from haul truck traffic, or if the road bed is visibly dry after a precipitation event, additional watering will be completed. Watering is not required for any day with no haul truck operation, even if dry road bed conditions are observed.

$$C (\% \text{ efficiency}) = 100 - 0.8 * P * d * t / i$$

Where:

P = Potential average hourly daytime evaporation rate (mm/hr). A value of 0.195 mm/hr is identified for P.

d = Average hourly daytime traffic rate (1/hr)

i = Watering intensity (L/m²)

t = Time between applications (hr)

EPA notes that this equation can be simplified to a minimum daily watering rate for a selected control efficiency as shown below:

$$i/t = (P * d) / (100 - C) \text{ (L/m}^2 \text{ per hour)} * 24 \text{ hr/day}$$

- MMCL proposes to review the facility's mine plan weekly to identify hauling cycle times and number of haul trucks in service for past, and proposed operations within the next month of operation.
- The in-pit haul road locations and surface area will be reviewed weekly, for the past week as well as projections for the next calendar month.
- The haul road water applied will be recorded daily for in-pit haul roads for each in-pit haul road segment.
- MMCL will confirm on a weekly basis that the minimum watering intensities required for 90% control were met. Equation 3-2 from "Control of Open Fugitive Dust Sources," USEPA Office of Air Quality Planning and Standards, EPA-450/3-88-308, Sept. 1988 will be used to identify the control efficiency.
- The minimum watering intensity may be recalculated on a weekly basis for proposed operations. MMCL may also choose to use a high, worst case, daily traffic rate to avoid frequent recalculation of the minimum watering rate.
- If the minimum watering intensity for 90% control, identified from Equation 3-2 of "Control of Open Fugitive Dust Sources", USEPA Office of Air Quality Planning and Standards, EPA-450/3-88-308, Sept. 1988 is not met on more than three percent of days where watering is required, for each semiannual period, MMCL will perform a follow-up investigation to determine the cause of the deviations, as well as identify procedures to avoid future deviations. Semiannual periods will include the January 1 through June 30th, and July 1st through December 31st calendar blocks. The control efficiency will be road segments.

- MMCL proposes to complete a verification study correlating the daily watering intensity and the unpaved road daily moisture level. The completed study will be submitted nine months after MPCA approval of the test plan. Freezing weather occurs for more than six months of the year at MMCL and affects when watering can be completed safely. The nine-month schedule allows MMCL to complete the study in late spring if the test plan is approved in late fall. The test plan will be submitted within six months of operation of the primary crusher for production purposes. Preliminary mining activities may be completed prior to crusher operation but these preliminary levels will not generate the traffic intensities needed to support the verification analysis.
- MMCL will also evaluate whether a continuous sprinkler system is feasible for in-pit haul roads that are expected to remain in the same location for an extended period of time.
- MMCL will check the weather forecast and meteorological conditions and perform daily visible emissions checks on all active haul roads during daylight hours. Haul truck drivers will also observe for visible emissions during the shift and report by radio as needed. If visible emissions are observed during the visible emissions check or are reported by an equipment operator, MMCL will record the observation in the visible emissions report, investigate the condition and take appropriate corrective action including contingent controls to address the visible emissions. The observation of visible emissions does not, in and of itself, demonstrate noncompliance with any applicable requirement but is a signal to trigger investigation and, if necessary, reasonable and appropriate corrective action.
- MMCL will maintain daily visible emission check reports based on the visible emissions checks. An exception report will be filed if visible emissions cannot be controlled by usual control strategies. Examples of such exceptions may be water wagon breakdown or extraordinary weather events (extremely hot, dry, freeze-drying, etc.). Employees will inform their supervisor of an exception condition upon discovery so that the report can be filled out.
- In non-freezing conditions, dust will be controlled by the following strategies:
 - Water will be applied to the active haul roads during the day and afternoon shifts, as required by weather, traffic, and road conditions. Water trucks will be dispatched and unpaved roads will be watered if excessive dusting is encountered. Some weather conditions during the summer months, such as low humidity and high winds, require a higher water frequency. The frequency and amount of water application is adjusted depending on weather conditions.
 - Haul roads will be graded as required.
 - Crushed and screened rock will be added to the road surface to minimize fugitive dust generation.
 - Chemical dust suppressant may also be applied to some high traffic areas for dust control as needed.
 - Slowing of vehicle speeds, limiting vehicle movements and/or stopping vehicle movements altogether at the affected area.
- In freezing conditions, dust will be controlled by the following strategies:
 - MMCL will apply a dust suppressant in the fall or early winter as freezing conditions prevent watering.
 - MMCL will also apply a dust suppressant in the spring, after the snow has melted, if watering cannot be restarted due to intermittent freezes.

- MMCL will apply a dust suppressant if visible emissions are observed from haul trucks during freezing conditions.
- Watering may be completed periodically during freezing conditions, in areas where watering is deemed to be safe by MMCL staff, if visible emissions are observed.
- Haul roads will be scarified as necessary.
- New haul road material will be applied as needed.
- Slowing of vehicle speeds, limiting vehicle movements and/or stopping vehicle movements altogether at the affected area.
- MMCL will maintain adequate watering capacity, including backup in the event of breakdown, to control dust during typical summer conditions.
- MMCL will maintain daily watering records and chemical application records. The records will include the watering truck identification number, the number of water loads applied per shift, the location of applied water loads, and the operator name. MMCL will equip each watering truck with the same GPS monitoring system used by the other haul trucks.
- MMCL will rely on National Weather Service (NWS) reports from the Hibbing Airport to provide a record of daily precipitation and humidity, high and low temperature, wind speed and direction readings, and dew point.
- MMCL will evaluate new technologies or methods in dust suppression for their technical and economic feasibility as they become commercially available.

Recordkeeping: MMCL will maintain the following records on site for a minimum of five years:

- Haul Road Fugitive Emissions Exception Report
- Daily Water Truck Reports
- Daily weather information as reported by the NWS at the Hibbing Airport
- Record of any days when haul roads are not watered and reasons why
- Records of weekly mine plan reviews, haul road location and surface area reviews, and confirmations of watering intensity required for 90% control efficiency
- Records of any follow-up investigations to determine causes of deviations
- Daily Visible Emissions Checklists
- An exception report if needed

4.3 Paved Roads (FUGI 6)

Primary Controls: Washing or street sweeping as needed.

Contingent Controls: Increased application of primary controls.

Practices: The operating practices MMCL will use include, but are not limited to the following:

- Daily visible emissions checks on paved roads during daylight hours. Plant staff will also observe for visible emissions during the shift and report as needed. If visible emissions are observed during the visible emissions check or are reported by a plant staff, MMCL will record the

observation in the visible emissions report, investigate the condition and take appropriate corrective action including contingent controls to address the visible emissions. The observation of visible emissions does not, in and of itself, demonstrate noncompliance with any applicable requirement but is a signal to trigger investigation and, if necessary, reasonable and appropriate corrective action.

- MMCL will maintain daily visible emission check reports based on the visible emissions checks. An exception report will be filed if visible emissions cannot be controlled by usual control strategies. Examples of such exceptions may be water wagon breakdown or extraordinary weather events (extremely hot, dry, freeze-drying, etc.). Employees will inform their supervisor of an exception condition upon discovery so that the report can be filled out.
- Washing of the paved roads will be done as needed to prevent fugitive emissions. Daily visible emission checks will be utilized to document daily road conditions. In the event that visible emissions are observed, additional washing or sweeping of the paved roads will be conducted.
- Paved road FUGI 6 has a 60% control efficiency due to the availability of watering activities and addition of chemical dust suppressant during freezing conditions.

Recordkeeping: MMCL will maintain the following records on site for a minimum of five years:

- Daily Visible Emissions Checklists
- Daily Watering Reports
- An exception report if needed

4.4 Stockpiles (FUGI 27, FUGI 29, FUGI 36, FUGI 39, FUGI 41, FUGI 44, FUGI 49, FUGI 52, FUGI 61, FUGI 82, FUGI 83, FUGI 85, FUGI 86, FUGI 87, FUGI 91)

Primary Controls: Natural moisture content and material size of the stockpiles. Natural moisture contents range from 0.92% (slag) to 5.4% (limestone) depending on the material and the size of the material. Additionally, moisture contents may be higher due to watering of materials prior to unloading at the stockpiles or due to weather activities.

Contingent Controls: Water spray as needed during non-freezing conditions or use of chemical dust suppressant during freezing conditions. Inactive areas and side slopes of mine stockpiles (FUGI 29) will be reclaimed.

Practices: The operating practices MMCL will use include, but are not limited to the following:

- MMCL will perform visible emissions checks on all stockpiles listed above once per day during daylight hours.
- Plant staff will also observe for visible emissions during the shift and report as needed. If visible emissions are observed during the visible emissions check or are reported by a plant staff, MMCL will record the observation in the visible emissions report, investigate the condition and take appropriate corrective action including contingent controls to address the visible emissions.
- During non-freezing conditions while stockpiles are being developed, water will be applied to stockpile roadways and side slopes, as needed.

- During freezing conditions while stockpiles are being developed, chemical dust suppressants will be applied to stockpile roadways and side slopes, as needed.
- An exception report will be filed if visible emissions cannot be controlled by usual control strategies. Examples of such exceptions may be water wagon breakdown or extraordinary weather events (extremely hot, dry, freeze-drying, etc.). Employees will inform their supervisor of an exception condition upon discovery so that the report can be filled out.

Recordkeeping: MMCL will maintain the following records on site for a minimum of five years:

- Daily Visible Emissions Checklists
- An exception report if needed

4.5 Material Transfer Points (FUGI 11, FUGI 19, FUGI 35, FUGI 40, FUGI 42, FUGI 43, FUGI 99, FUGI 46, FUGI 47, FUGI 48, FUGI 50, FUGI 51, FUGI 53, FUGI 54, FUGI 56, FUGI 57, FUGI 58, FUGI 59, FUGI 60, FUGI 62, FUGI 63, FUGI 64, FUGI 65, FUGI 66, FUGI 67, FUGI 68, FUGI 69, FUGI 70, FUGI 71, FUGI 72, FUGI 73, FUGI 74, FUGI 75, FUGI 76, FUGI 77, FUGI 78, FUGI 79, FUGI 80, FUGI 81, FUGI 88, FUGI 89, FUGI 98, FUGI 90, FUGI 92)

Primary Controls: Natural moisture content of materials and watering as needed, along with minimized drop distances from all conveyors and loaders. Natural moisture contents range from 0.92% (slag) to 10.0% (fresh concentrate) depending on the material and the size of the material. Additionally, moisture contents may be higher due to watering of materials at different transfer points.

Contingent Controls: Water spray as needed during non-freezing conditions

Practices: The operating practices MMCL will use include, but are not limited to the following:

- MMCL will perform visible emissions checks on all active material transfer points once per day during daylight hours.
- MMCL will minimize the drop distances onto each stockpile as far as practicable.
- Plant staff will also observe for visible emissions during the shift and report as needed. If visible emissions are observed during the visible emissions check or are reported by a plant staff, MMCL will record the observation in the visible emissions report, investigate the condition, and take appropriate corrective action including contingent controls to address the visible emissions.
- An exception report will be filed if visible emissions cannot be controlled by usual control strategies. Examples of such exceptions may be water wagon breakdown or extraordinary weather events (extremely hot, dry, freeze-drying, etc.). Employees will inform their supervisor of an exception condition upon discovery so that the report can be filled out.
- Material Transfer Points FUGI 40, FUGI 42, FUGI 99, FUGI 58, FUGI 59, FUGI 60, FUGI 62, FUGI 64, FUGI 65, FUGI 66, FUGI 68, FUGI 69, FUGI 70, FUGI 71, FUGI 72, FUGI 73, FUGI 74, FUGI 75, FUGI 76, FUGI 77, FUGI 78, FUGI 79, FUGI 80, and FUGI 81 have a 60% control efficiency due to the availability of watering activities and addition of chemical dust suppressant during freezing conditions.

Recordkeeping: MMCL will maintain the following records on site for a minimum of five years:

- Daily Visible Emissions Checklists

- An exception report if needed

4.6 Truck Loading and Unloading (FUGI 5, FUGI 16, FUGI 17, FUGI 31, FUGI 32, FUGI 33, FUGI 34, FUGI 37, FUGI 38, FUGI 55, FUGI 94, FUGI 95, FUGI 96, FUGI 97)

Primary Controls: Natural moisture content and size of materials along with watering as needed. The drop distance during truck loading and unloading will also be minimized. Natural moisture contents range from 1.5% (crude ore) to 7.9% (overburden) depending on the material and the size of the material.

Contingent Controls: Operations may temporarily cease until conditions improve if primary controls do not reduce fugitive emissions. FUGI 5 does have the availability of dust suppression if necessary as a contingent control.

Practices: The operating practices MMCL will use include, but are not limited to the following:

- MMCL will perform visible emissions checks on all active truck loading and unloading points once per day during daylight hours.
- FUGI 5 has a 60% control efficiency due to the availability of watering activities and addition of chemical dust suppressant during freezing conditions.
- Plant staff will also observe for visible emissions during the shift and report as needed. If visible emissions are observed during the visible emissions check or are reported by a plant staff, MMCL will record the observation in the visible emissions report, investigate the condition, and take appropriate corrective action including contingent controls to address the visible emissions.
- An exception report will be filed if visible emissions cannot be controlled by usual control strategies. Examples of such exceptions may be water wagon breakdown or extraordinary weather events (extremely hot, dry, freeze-drying, etc.). Employees will inform their supervisor of an exception condition upon discovery so that the report can be filled out.

Recordkeeping: MMCL will maintain the following records on site for a minimum of five years:

- Daily Visible Emissions Checklists
- An exception report if needed

4.7 Tailings Basin (FUGI 26)

Primary Controls: Beach area minimization, mulching, vegetation, systematic dumping.

Contingent Controls: Change tailings discharge points.

Practices: The operating practices MMCL will use include, but are not limited to the following:

- During freezing months (typically late November through early April), especially when snow is present, mulching will be done to reduce fugitive dust lift-off. When the snow melts, the mulch forms a mat on the tailings thereby minimizing emissions.
- Tailings deposited during winter will be vegetated in early spring before the tailings completely thaw.
- Beach areas developed during non-freezing months (typically early April through late November) will be treated (i.e. mulch applied, vegetated, or application of dust suppressants) as soon as

practical to prevent large areas of exposed beach from drying out, especially during freeze drying conditions or hot, windy conditions. Dike construction techniques and water level management will help minimize exposed beach areas, which will be treated in a timely manner to limit the risk of dry conditions on the beaches. Ideally fresh beach will be treated within two weeks, but these activities are dependent on weather conditions and basin configurations. Mulch will be staged on-site to minimize the time necessary for it to be applied once conditions are suitable.

- During construction and, to the extent possible during operations, berms and benches will be graded to gentle slopes to reduce wind resistance, which will limit the potential for fugitive dust emissions.
- MMCL will maintain a systematic discharge schedule. The tailings basin will be designed with multiple cells. Tailings will typically be discharged to only one cell at a time. The idle cells will be vegetated and will remain undisturbed for long periods of time (up to 2 years) thereby minimizing dust emissions from those portions of the tailings basin. The idle cells will be re-vegetated, if necessary, to maintain adequate vegetation for dust control purposes.
- In addition, the dust suppressing objectives for the active cell include:
 - Maintenance of adequate freeboard around the dike perimeter
 - High interior water levels by maintaining unobstructed gravity flow of slurry toward the decant pool (interior)
 - Adequate pumping capacity allowing for discharge to completely encircle the dike perimeter creating a strong dike and adequate beach to protect the dike.
 - If high winds are forecast during the non-freezing months, either the tailings discharge will be moved or clear water will be pumped onto beach areas that are exposed and are determined to be dry.
- As needed, MMCL will apply water or chemical dust suppression materials to the tailings basin to control dust during other activities such as dozing and grading of the tailings basin if the natural moisture content is not high enough to reduce dust emissions.
- Plant staff will also observe for visible emissions during the shift and report as needed. If visible emissions are observed during the visible emissions check or are reported by a plant staff, MMCL will record the observation in the visible emissions report, investigate the condition, and take appropriate corrective action including contingent controls to address the visible emissions.
- An exception report will be filed if visible emissions cannot be controlled by usual control strategies. Examples of such exceptions may be water wagon breakdown or extraordinary weather events (extremely hot, dry, freeze-drying, etc.). Employees will inform their supervisor of an exception condition upon discovery so that the report can be filled out.

Recordkeeping: MMCL will maintain the following records on site for a minimum of five years:

- Daily Visible Emissions Checklists
- An exception report if needed

4.8 Grading and Dozing (FUGI 24, FUGI 25, FUGI 28)

Primary Controls: Natural moisture content and size of materials along with watering as needed. Natural moisture contents range from **5%** (tailings) to **20%** (overburden) depending on the material and the size of the material.

Contingent Controls: Operations may temporarily cease until conditions improve if primary controls do not reduce fugitive emissions. FUGI 24 does have the availability of dust suppression watering roads before grading if necessary as a contingent control.

Practices: The operating practices MMCL will use include, but are not limited to the following:

- MMCL will perform visible emissions checks on all active dozing and grading once per day during daylight hours.
- During non-freezing conditions while roads are being graded, water will be applied to roadways as needed.
- During construction and, to the extent possible during operations, berms and benches will be graded to gentle slopes to reduce wind resistance, which will limit the potential for fugitive dust emissions.
- Plant staff will also observe for visible emissions during the shift and report as needed. If visible emissions are observed during the visible emissions check or are reported by a plant staff, MMCL will record the observation in the visible emissions report, investigate the condition and take appropriate corrective action including contingent controls to address the visible emissions.
- An exception report will be filed if visible emissions cannot be controlled by usual control strategies. Examples of such exceptions may be water wagon breakdown or extraordinary weather events (extremely hot, dry, freeze-drying, etc.). Employees will inform their supervisor of an exception condition upon discovery so that the report can be filled out.

Recordkeeping: MMCL will maintain the following records on site for a minimum of five years:

- Daily Visible Emissions Checklists
- An exception report if needed

4.9 Drilling Source (FUGI 30)

Practices: The source associated with drilling do not have any primary or contingent controls that eliminate all dust at this time. The drill does have a watering system that lubricates the drill head and as a byproduct it reduces dust production from the drilling operation.

- When MMCL is performing drilling operations the watering system will be in use in both freezing and non-freezing conditions.
- An exception report will be filed if the drill watering system fails to function during a drilling operation. Employees will inform their supervisor of an exception condition upon discovery so that the report can be filled out.
- In extreme meteorological conditions where drilling fugitive emissions are leaving the property, operations will temporarily cease until conditions improve.

5.0 Construction

The construction practices and control measures that will be implemented and recorded are listed below. MMCL will train and assign appropriate personnel the responsibility to control fugitive emissions in their areas of responsibility.

5.1 Construction Roads and Service Roads

Primary Controls: Watering and other dust suppressant application, road maintenance including crushed rock surfacing, grading, and scarifying as needed depending on road conditions.

Contingent Controls: Increased application of primary controls, further slowing of vehicle speeds, limiting vehicle movements and/or stopping vehicle movements altogether at the affected area.

Practices: The operating practices MMCL will use include, but are not limited to the following:

- MMCL will check the weather forecast and meteorological conditions and perform daily visible emissions checks on all active haul roads during daylight hours. Haul truck drivers will also observe for visible emissions during the shift and report by radio as needed. If visible emissions are observed during the visible emissions check or are reported by an equipment operator, MMCL will record the observation in the visible emissions report, investigate the condition and take appropriate corrective action including contingent controls to address the visible emissions. The observation of visible emissions does not, in and of itself, demonstrate noncompliance with any applicable requirement but is a signal to trigger investigation and, if necessary, reasonable and appropriate corrective action.
- MMCL will maintain daily visible emission check reports based on the visible emissions checks. An exception report will be filed if visible emissions cannot be controlled by usual control strategies. Examples of such exceptions may be water wagon breakdown or extraordinary weather events (extremely hot, dry, freeze-drying, etc.). Employees will inform their supervisor of an exception condition upon discovery so that the report can be filled out.
- In non-freezing conditions, dust will be controlled by the following strategies:
 - Water will be applied to the construction roads during the day and afternoon shifts, as required by weather, traffic, and road conditions. Water trucks will be dispatched and unpaved construction roads will be watered if excessive dusting is encountered. Some weather conditions during the summer months, such as low humidity and high winds, require a higher water frequency. The frequency and amount of water application is adjusted depending on weather conditions.
 - Haul roads will be graded as required.
 - Crushed and screened rock will be added to the road surface to minimize fugitive dust generation.
 - Chemical dust suppressant may also be applied to some high traffic areas for dust control as needed.
 - Slowing of vehicle speeds, limiting vehicle movements and/or stopping vehicle movements altogether at the affected area.

- In freezing conditions, dust will be controlled by the following strategies:
 - Solid or liquid chemical dust suppressant will be applied to the haul road in late fall prior to freeze up.
 - Haul roads will be scarified as necessary.
 - New haul road material will be applied as needed.
 - Slowing of vehicle speeds, limiting vehicle movements and/or stopping vehicle movements altogether at the affected area.
- MMCL will maintain adequate watering capacity, including backup in the event of breakdown, to control dust during typical summer conditions.
- MMCL will maintain daily watering records and chemical application records. The records will include the watering truck identification number, the number of water loads applied per shift, the location of applied water loads, and the operator name. MMCL will equip each watering truck with the same GPS monitoring system used by the other haul trucks.
- MMCL will rely on National Weather Service (NWS) reports from the Hibbing Airport to provide a record of daily precipitation and humidity, high and low temperature, wind speed and direction readings, and dew point.
- Vehicle miles traveled (VMT) will be calculated annually based on mine production and a record will be kept on site. This information will be sent to the MPCA annually for incorporating into the annual emissions inventory.
- MMCL will evaluate new technologies or methods in dust suppression for their technical and economic feasibility as they become commercially available.

Recordkeeping: MMCL will maintain the following records on site for a minimum of five years:

- Haul Road Fugitive Emissions Exception Report
- Daily Water Truck Reports
- Daily weather information as reported by the NWS at the Hibbing Airport.
- The application of chemical dust suppressants will be recorded based on the amount of chemical applied.
- Daily Visible Emissions Checklists
- An exception report if needed

5.2 Construction Excavations and spoilage Stockpiles

Primary Controls: Natural moisture content and material size of the stockpiles. Natural moisture in native soils typically 20%. Additionally, moisture contents may be higher due to watering of materials prior to unloading at the stockpiles or due to weather activities.

Contingent Controls: Water spray as needed during non-freezing conditions. Inactive areas and side slopes of construction piles and excavations will be reclaimed.

Practices: The operating practices MMCL will use include, but are not limited to the following:

- MMCL will perform visible emissions checks on all construction excavations and construction stockpiles once per day during daylight hours when operations are active.
- Plant staff will also observe for visible emissions during the shift and report as needed. If visible emissions are observed during the visible emissions check or are reported by construction staff, MMCL will record the observation in the visible emissions report, investigate the condition and take appropriate corrective action including contingent controls to address the visible emissions.
- During non-freezing conditions while stockpiles are being developed, water will be applied to stockpile roadways and side slopes, as needed.
- During freezing conditions while stockpiles are being developed, chemical dust suppressants will be applied to stockpile roadways and side slopes, as needed.
- An exception report will be filed if visible emissions cannot be controlled by usual control strategies. Examples of such exceptions may be water wagon breakdown or extraordinary weather events (extremely hot, dry, etc.). Employees will inform their supervisor of an exception condition upon discovery so that the report can be filled out.

Recordkeeping: MMCL will maintain the following records on site for a minimum of five years:

- Daily Visible Emissions Checklists
- An exception report if needed

5.3 Tailing Basin Construction

Primary Controls: Natural moisture content and size of materials along with watering as needed. Natural moisture contents range from **5%** (tailings) to **20%** (overburden) depending on the material and the size of the material.

Contingent Controls: Operations may temporarily cease until conditions improve if primary controls do not reduce fugitive emissions.

Practices: The operating practices MMCL will use include, but are not limited to the following:

- MMCL will perform visible emissions checks on all active dozing and basin construction once per day during daylight hours during construction.
- During non-freezing conditions while roads are being graded, water will be applied to roadways as needed.
- During construction and, to the extent possible during operations, berms and benches will be graded to gentle slopes to reduce wind resistance, which will limit the potential for fugitive dust emissions.
- Plant staff will also observe for visible emissions during the shift and report as needed. If visible emissions are observed during the visible emissions check or are reported by a plant staff, MMCL will record the observation in the visible emissions report, investigate the condition and take appropriate corrective action including contingent controls to address the visible emissions.
- An exception report will be filed if visible emissions cannot be controlled by usual control strategies. Examples of such exceptions may be water wagon breakdown or extraordinary

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weather events (extremely hot, dry, freeze-drying, etc.). Employees will inform their supervisor of an exception condition upon discovery so that the report can be filled out.

Recordkeeping: MMCL will maintain the following records on site for a minimum of five years:

- Daily Visible Emissions Checklists
- An exception report if needed

6.0 Recordkeeping

The following records will be maintained at MMCL for the period specified by the Title V permit:

- Daily Visible Emissions Checks. MMCL commits to retaining these records for 5 years as required by the existing permit and Minn. R. 7007.0800, subp. 5(C).
- Daily Watering Reports
- Haul Road Fugitive Emissions Exception Reports*
- Haul Road & Service Road Fugitive Emissions Exception Reports*
- Paved Road Fugitive Emissions Exception Reports*
- Stockpiles Fugitive Emissions Exception Reports*
- Material Transfer Points Fugitive Emissions Exception Reports*
- Truck Loading and Unloading Fugitive Emissions Exception Reports*
- Tailings Basin (FUGI 26) Fugitive Emissions Exception Reports*
- Grading and Dozing Fugitive Emissions Exception Reports*
- Drilling Fugitive Emissions Exception Reports*
- Daily Weather Information Reports (from National Weather Service at Hibbing Airport)*
- Employee Training Records*

*These records are anticipated to be electronic reports generated from the plant process control systems.

7.0 Training

An integral part of the implementation of the Fugitive Dust Control Plan is appropriate training for the personnel whose jobs involve ensuring fugitive dust is adequately controlled. Training will be provided to all personnel at the facility whose jobs directly involved ensuring fugitive dust is adequately controlled. The training will cover a subset of the following subjects as needed:

- Employee Responsibilities
- Forms and Record Keeping
- Reporting
- Corrective Actions
- Maintenance
- Work Orders
- Dust Observation and Visibility Training
- Weather Observations
- Location of Information

In addition to the job-specific training listed above, all MMCL employees will receive general fugitive dust awareness as part of their annual environmental training. Refresher training will be provided on an annual basis.

8.0 Reporting

MMCL will notify MPCA if any deviations are made from the plan or if corrective action is required to address fugitive emissions that may adversely impact the general public.

The following information will be included in the semi-annual compliance report required by the permit:

- Deviations from the plan
- Instances where fugitive emissions leave the site
- Corrective actions that were not taken consistent with the plan

All records described in this plan will be available for review during inspections or will be provided upon request.

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Tables

Table 1
List of Fugitive Sources

Fugitive Source ID	Fugitive Source Description	Area	Operating/Control Practice	Daily Visible Emissions Check Required?
FUGI 30	Drilling	Mining and Crushing	None	Yes
FUGI 31	Overburden Loadout	Mining and Crushing	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 32	Overburden Unloading (Truck)	Mining and Crushing	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 33	Waste Rock Loadout	Mining and Crushing	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 34	Waste Rock Unloading (Truck)	Mining and Crushing	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 16	Crude Ore Loadout	Mining and Crushing	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 13	Haul Road Emissions	Mining and Crushing	Watering and other dust suppressant application; road maintenance	Yes
FUGI 100	In Pit Haul Road Emissions	Mining and Crushing	Watering and other dust suppressant application; road maintenance	Yes
FUGI 20	Service Road Emissions	Mining and Crushing	Watering and other dust suppressant application; road maintenance	Yes
FUGI 6	Paved Road Emissions	Mining and Crushing	Watering and other dust suppressant application; road maintenance	Yes
FUGI 29	Overburden/Waste Rock Area Wind Erosion	Mining and Crushing	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 28	Overburden/Waste Rock Bulldozer	Mining and Crushing	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 35	Drop onto Cobber Rejects Pile	Concentrator	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 36	Cobber Rejects Pile Wind Erosion	Concentrator	Limit drop height; natural moisture; water spray as needed during non-freezing conditions	Yes

Fugitive Source ID	Fugitive Source Description	Area	Operating/Control Practice	Daily Visible Emissions Check Required?
FUGI 37	Cobber Rejects Pile Loadout	Concentrator	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 38	Cobber Rejects Unloading (Truck)	Concentrator	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 39	Cobber Rejects Pile Wind Erosion	Concentrator	Limited pile size; natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 26	Tailing Basin Wind Erosion	Concentrator	Natural moisture of tailings; revegetation	Yes
FUGI 25	Dozer Activity at Tailings Basin	Concentrator	Natural moisture of tailings	Yes
FUGI 24	Grading at Tailings Basin	Concentrator	Natural moisture of tailings	Yes
FUGI 40	Drop onto 120K ton Concentrate Stockpile	Pelletizer	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 41	120K ton Concentrate Stockpile Wind Erosion	Pelletizer	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 42	120K ton Concentrate Stockpile Loadout	Pelletizer	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 27	Oxide Product Stockpile Stacking Conveyor	Pelletizer	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 99	Oxide Product Stockpile Wind Erosion	Pelletizer	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 46	Oxide Fines Bin Discharge	Direct Reduced Iron (DRI)	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 47	Oxide Fines Return to Re grind Mill	Direct Reduced Iron (DRI)	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 48	DRI Drop into Remet Bunker	Direct Reduced Iron (DRI)	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 49	DRI Remet Bunker Wind Erosion	Direct Reduced Iron (DRI)	Limited pile size; natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 50	DRI Remet Return to DRI Reclaim Hopper	Direct Reduced Iron (DRI)	Natural moisture; water spray as needed during non-freezing conditions	Yes

Fugitive Source ID	Fugitive Source Description	Area	Operating/Control Practice	Daily Visible Emissions Check Required?
FUGI 51	Oversize CDRI Drop into Bunker	Direct Reduced Iron (DRI)	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 52	Oversize CDRI Bunker Wind Erosion	Direct Reduced Iron (DRI)	Limited pile size; natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 53	Oversize CDRI to EAF by scrap bucket	Direct Reduced Iron (DRI)	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 43	DRI Stockpile Stacking Conveyor	Direct Reduced Iron (DRI)	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 44	DRI Stockpile Wind Erosion	Direct Reduced Iron (DRI)	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 19	DRI Reclaim to Meltshop/Railcar	Direct Reduced Iron (DRI)	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 11	Railcar Loading	Direct Reduced Iron (DRI)	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 54	CDRI Drop into Line I EAF Feed Collection Chute	Direct Reduced Iron (DRI)	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 55	Lump Lime/Carbon Unloading	Steel Mill	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 56	Lime/Carbon Bucket Elevator	Steel Mill	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 57	Lime/Carbon Tripper Conveyor Drop	Steel Mill	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 58	Slag Dumping	Slag Processing	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 59	Digging Pits/Breaking Slag	Slag Processing	Watering	Yes
FUGI 60	Loading Grizzly Stockpile	Slag Processing	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 61	Grizzly Stockpile Wind Erosion	Slag Processing	Limited pile size; natural moisture; water spray as needed during non-freezing conditions	Yes

Fugitive Source ID	Fugitive Source Description	Area	Operating/Control Practice	Daily Visible Emissions Check Required?
FUGI 62	Grizzly Stockpile Loadout	Slag Processing	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 63	Grizzly Loading	Slag Processing	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 64	Grizzly Oversize to Slag Dumping	Slag Processing	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 65	Grizzly/Feeder	Slag Processing	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 66	Slag Transfer Conveyor	Slag Processing	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 67	Slag Screen	Slag Processing	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 68	Screened Slag Conveyor	Slag Processing	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 69	Screened Slag Cobber	Slag Processing	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 70	Non-metallics Stacker No.1	Slag Processing	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 71	Non-metallics Stacker No.2	Slag Processing	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 72	Metallics Stacker No.1	Slag Processing	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 73	Metallics Stacker No.2	Slag Processing	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 74	Slag Crusher	Slag Processing	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 75	Crusher By-pass Conveyor	Slag Processing	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 76	Crushed Slag Cobber	Slag Processing	Natural moisture; water spray as needed during non-freezing conditions	Yes

Fugitive Source ID	Fugitive Source Description	Area	Operating/Control Practice	Daily Visible Emissions Check Required?
FUGI 77	Crushed Metallics Stacker	Slag Processing	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 78	Crushed Non-metallics Screen	Slag Processing	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 79	Crushed Non-metallics Stacker No. 1	Slag Processing	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 80	Crushed Non-metallics Stacker No. 2	Slag Processing	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 81	Metallics Return to EAF	Slag Processing	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 5	Non-metallics Loadout	Slag Processing	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 82	Processed Slag Piles Wind Erosion	Slag Processing	Limited pile size; natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 17	Non-metallics Unloading to Off-site Sale or On-Site Stockpile	Slag Processing	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 83	Non-metallic Slag Stockpile Wind Erosion (in permit area)	Slag Processing	Limited pile size; natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 85	Small Limestone and Dolomite Stockpile Wind Erosion	Pellet Plant	Limited pile size; natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 86	Large Limestone and Dolomite Stockpile Wind Erosion	Pellet Plant	Limited pile size; natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 87	Mine Emergency Primary Crusher Feed Pile Wind Erosion	Mining and Crushing	Limited pile size; natural moisture; water spray as needed during non-freezing conditions	Yes

Fugitive Source ID	Fugitive Source Description	Area	Operating/Control Practice	Daily Visible Emissions Check Required?
FUGI 88	Mine Emergency Primary Crusher Stockpile Feed Loading	Mining and Crushing	Limited pile size; natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 90	Oxide Product Stockpile Loadout	Pelletizer	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 91	Oxide Fines Stockpile Wind Erosion	Direct Reduced Iron (DRI)	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 92	Oxide Fines Stockpile Loadout	Direct Reduced Iron (DRI)	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 94	Small Limestone and Dolomite Stockpile Loading	Pellet Plant	Limited pile size; natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 95	Small Limestone and Dolomite Stockpile Loadout	Pellet Plant	Limited pile size; natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 96	Large Limestone and Dolomite Stockpile Loading	Pellet Plant	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 97	Large Limestone and Dolomite Stockpile Loadout	Pellet Plant	Natural moisture; water spray as needed during non-freezing conditions	Yes
FUGI 98	Emergency Product Conveyor from Pellet Discharge	Pellet Plant	No controls, process is only used in an emergency	Yes

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Inspection Forms

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Mine Site Fugitive Emission Check Form

Inspector's Name & Title: _____

Signature: _____

Date: _____

Time: _____

Weather

Conditions: _____

Fugitive Emission source		Equipment Operating	Fugitive Emissions Observed	If Fugitive Emissions observed, was corrective action taken	List corrective action taken if any and why	Is there a plan Exception*
FUGI 30	Drilling	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 31	Overburden Loadout	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 32	Overburden Unloading (Truck)	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 33	Waste Rock Loadout	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 34	Waste Rock Unloading (Truck)	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 16	Crude Ore Loadout	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 13	Haul Road Emissions	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 100	In Pit Haul Road Emissions	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 20	Service Road Emissions through mine and Pit 5	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 6	Paved Road Emissions PCB to End of Road	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 29	Overburden/Waste Rock Area Wind Erosion	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 28	Overburden / Waste Rock Bulldozer	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No

*If yes then an Exception report must be filled out

Permit issued: [month day, year]
 Permit expires: [month day, year]

Concentrator & Crusher Fugitive Emission Check Form

Inspector's Name & Title: _____

Signature: _____

Date: _____

Time: _____

Weather

Conditions: _____

Fugitive Emission source		Equipment Operating	Fugitive Emissions Observed	If Fugitive Emissions observed, was corrective action taken	List corrective action taken if any and why	Is there a plan Exception*
FUGI 35	Drop onto Cobber Rejects Pile	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 36	Cobber Rejects Pile Wind Erosion	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 37	Cobber Rejects Pile Loadout	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 38	Cobber Rejects Unloading (Truck)	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 39	Cobber Rejects Pile Wind Erosion	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 20	Service Road Emissions Plant area	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 20	Service Road Emissions Tailing Pipe Corridor	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 6	Paved Road Emissions (Pellet Plant Warehouse to Crusher)	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No

*If yes then an Exception report must be filled out

Permit issued: [month day, year]
 Permit expires: [month day, year]

Pellet Plant Fugitive Emission Check Form

Inspector's Name & Title: _____

Signature: _____

Date: _____

Time: _____

Weather

Conditions: _____

Fugitive Emission source		Equipment Operating	Fugitive Emissions Observed	If Fugitive Emissions observed, was corrective action taken	List corrective action taken if any and why	Is there a plan Exception*
FUGI 40	Drop onto 120K ton Concentrate Stockpile	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 41	120K ton Concentrate Stockpile Wind Erosion	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 42	120K ton Concentrate Stockpile Loadout	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 27	Oxide Product Stockpile Stacking Conveyor	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 99	Oxide Product Stockpile Wind Erosion	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 20	Service Road Emissions (Plant Area)	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 6	Paved Road Emissions (Co 58)	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 6	Paved Road Emissions (Corridor from 58 to Pellet warehouse)	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No

*If yes then an Exception report must be filled out

Permit issued: [month day, year]
 Permit expires: [month day, year]

Tailing Basin Fugitive Emission Check Form

Inspector's Name & Title: _____

Signature: _____

Date: _____

Time: _____

Weather

Conditions: _____

Fugitive Emission source		Equipment Operating	Fugitive Emissions Observed	If Fugitive Emissions observed, was corrective action taken	List corrective action taken if any and why	Is there a plan Exception*
FUGI 26	Tailing Basin Wind Erosion	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 25	Dozer Activity at Tailings Basin	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 24	Grading at Tailings Basin	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 20	Service Road Emissions (entrances and Pipe bridge)	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 20	Service Road Emissions (North Dam)	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 20	Service Road Emissions (East Dam)	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 20	Service Road Emissions (South Dam)	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 20	Service Road Emissions (Water Reclaim Dam)	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No

*If yes then an Exception report must be filled out

Permit issued: [month day, year]
 Permit expires: [month day, year]

DRI Fugitive Emission Check Form

Inspector's Name & Title: _____

Signature: _____

Date: _____

Time: _____

Weather

Conditions: _____

Fugitive Emission source		Equipment Operating	Fugitive Emissions Observed	If Fugitive Emissions observed, was corrective action taken	List corrective action taken if any and why	Is there a plan Exception*
FUGI 46	Oxide Fines Bin Discharge	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 47	Oxide Fines Return to Re grind Mill	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 48	DRI Drop into Remet Bunker	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 49	DRI Remet Bunker Wind Erosion	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 50	DRI Remet Return to DRI Reclaim Hopper	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 51	Oversize CDRI Drop into Bunker	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 52	Oversize CDRI Bunker Wind Erosion	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 53	Oversize CDRI to EAF by scrap bucket	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 43	DRI Stockpile Stacking Conveyor	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 44	DRI Stockpile Wind Erosion	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 19	DRI Reclaim to Meltshop/Railcar	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 11	Railcar Loading	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 54	CDRI Drop into Line I EAF Feed Collection Chute	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No

*If yes then an Exception report must be filled out

Permit issued: [month day, year]
 Permit expires: [month day, year]

Steel Fugitive Emission Check Form

Inspector's Name & Title: _____

Signature: _____

Date: _____

Time: _____

Weather

Conditions: _____

Fugitive Emission source		Equipment Operating	Fugitive Emissions Observed	If Fugitive Emissions observed, was corrective action taken	List corrective action taken if any and why	Is there a plan Exception*
FUGI 55	Lump Lime/Carbon Unloading	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 56	Lime/Carbon Bucket Elevator	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 57	Lime/Carbon Tripper Conveyor Drop	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 58	Slag Dumping	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 59	Digging Pits/Breaking Slag	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 60	Loading Grizzly Stockpile	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 61	Grizzly Stockpile Wind Erosion	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 62	Grizzly Stockpile Loadout	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 63	Grizzly Loading	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 64	Grizzly Oversize to Slag Dumping	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 65	Grizzly/Feeder	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 66	Slag Transfer Conveyor	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 67	Slag Screen	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 68	Screened Slag Conveyor	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 69	Screened Slag Cobber	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No

Permit issued: [month day, year]
 Permit expires: [month day, year]

FUGI 70	Non-metallics Stacker No.1	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 71	Non-metallics Stacker No.2	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 72	Metallics Stacker No.1	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 73	Metallics Stacker No.2	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 74	Slag Crusher	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 75	Crusher By-pass Conveyor	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 76	Crushed Slag Cobber	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 77	Crushed Metallics Stacker	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 78	Crushed Non-metallics Screen	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 79	Crushed Non-metallics Stacker No. 1	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 80	Crushed Non-metallics Stacker No. 2	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 81	Metallics Return to EAF	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 5	Non-metallics Loadout	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 82	Processed Slag Piles Wind Erosion	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 17	Non-metallics Unloading to Off-site Sale or On-Site Stockpile	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 83	Non-metallic Slag Stockpile Wind Erosion (in permit area)	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No

*If yes then an Exception report must be filled out

Permit issued: [month day, year]
 Permit expires: [month day, year]

Construction Check Form

Inspector's Name & Title: _____

Signature: _____

Date: _____

Time: _____

Weather

Conditions: _____

Fugitive Emission source		Equipment Operating	Fugitive Emissions Observed	If Fugitive Emissions observed, was corrective action taken	List corrective action taken if any and why	Is there a plan Exception*
FUGI 20	Service Road Emissions (Contractor Parking lot)	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 20	Service Road Emissions (Snowball Entrance)	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 20	Service Road Emissions (Corridor road while not Paved)	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 20	Service Road Emissions	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
FUGI 6	Paved Road Emissions Co 58	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
	Constriction Excavations Crusher Concentrator	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
	Construction Excavations Pellet Plant	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No
	Construction Excavations DRI/Steel Plant	Yes/ No/ NA	Yes/ No/ NA	Yes/ No/ NA		Yes/ No

*If yes then an Exception report must be filled out

Daily Water Truck Log



**MESABI
METALLICS
COMPANY
LLC**

Instructions on How to Fill out Water truck Log

- 1) Fill out date, time, and your name in the provided fields
- 2) Check the boxes of the areas that you watered
- 3) If you watered a stock pile or a transfer point enter the pile code in the space provided.
The codes are listed on the following page.
- 4) If you watered areas not listed describe in comments section
- 5) Enter approximate gallons used

Daily Water Truck Log (Revised 2018)

Tempo ID	Description
FUGI 31	Overburden Loadout
FUGI 32	Overburden Unloading (Truck)
FUGI 33	Waste Rock Loadout
FUGI 34	Waste Rock Unloading (Truck)
FUGI 16	Crude Ore Loadout
FUGI 29	Overburden / Waste Rock Area Wind Erosion
FUGI 28	Overburden / Waste Rock Bulldozer
FUGI 35	Drop onto Cobber Rejects Pile
FUGI 36	Cobber Rejects Pile Wind Erosion
FUGI 37	Cobber Rejects Pile Loadout
FUGI 39	Cobber Rejects Stockpile Wind Erosion
FUGI 26	Tailings Basin Wind Erosion
FUGI 25	Dozer Activity at Tailings Basin
FUGI 24	Grading at Tailings Basin
FUGI 40	120K ton Concentrate Stockpile Loading
FUGI 41	120K ton Concentrate Stockpile Wind Erosion
FUGI 42	120K ton Concentrate Stockpile Loadout
FUGI 43	DRI Stockpile Stacking Conveyor
FUGI 44	DRI Stockpile Wind Erosion
FUGI 19	DRI Stockpile Reclaim To Melt Shop
FUGI 27	Oxide Product Stockpile Wind Erosion
FUGI 99	Oxide Product Stockpile Stacking Conveyor
FUGI 46	Oxide Fines Bin Discharge
FUGI 47	Oxide Fines Return to Re grind Mill
FUGI 48	DRI Drop into Remet Bunker
FUGI 49	DRI Remet Bunker Wind Erosion
FUGI 50	DRI Remet Return to DRI Reclaim Hooper
FUGI 51	Oversize CDRI Drop Into Bunker
FUGI 20	Service Roads
FUGI 52	Oversize CDRI Bunker Wind Erosion

FUGI 53	Oversize CDRI To EAF By Scrap Bucket
FUGI 11	DRI Railcar Loading
	CDRI Drop Into EAF Feed Collection Chute Line 1
FUGI 54	
FUGI 55	Lump Lime / Carbon Unloading
FUGI 56	Lime / Carbon Bucket Elevator
FUGI 57	Lime / Carbon Tripper Conveyor Drop
FUGI 58	Slag Dumping
FUGI 59	Digging Pits / Breaking Slag
FUGI 60	Grizzly Stockpile Loading
FUGI 61	Grizzly Stockpile Wind Erosion
FUGI 62	Grizzly Stockpile Loadout
FUGI 63	Grizzly Loading
FUGI 64	Grizzly Oversize to Slag Dumping
FUGI 65	Grizzly / Feeder
FUGI 66	Slag Transfer Conveyor
FUGI 67	Slag Screen
FUGI 68	Screened Slag Conveyor
FUGI 69	Screened Slag Cobber
FUGI 70	Non-Metallics Stacker 1
FUGI 71	Non-Metallics Stacker 2
FUGI 72	Metallics Stacker 1
FUGI 73	Metallics Stacker 2
FUGI 74	Crusher
FUGI 75	Crusher By-pass Conveyor
FUGI 76	Crushed Slag Cobber
FUGI 77	Crushed Metallics Stacker
FUGI 78	Crushed Non-Metallics Screen
FUGI 79	Crushed Non-Metallics Stacker 1
FUGI 80	Crushed Non-Metallics Stacker 2
FUGI 81	Metallics Return to EAF

FUGI 5	Non-Metallics Loadout
FUGI 82	Processed Slag Piles Wind Erosion
FUGI 17	Non-Metallics Unloading to Off-Site Sale or On-Site Stockpile
FUGI 83	Non-Metallics Slag Stockpile Wind Erosion
FUGI 6	Paved Road Emissions
	Limestone and Dolomite Small Stock Pile Overflow/Loadout
FUGI 85	Limestone and Dolomite Large Stock Pile Overflow/Loadout
FUGI 86	
FUGI 87	Mine Emergency Primary Crusher Feed Pile Wind Erosion
	Mine Emergency Primary Crusher Stockpile Feed Loading
FUGI 88	Mine Emergency Primary Crusher Stockpile Feed Loadout
FUGI 90	Oxide Product Stockpile Loadout
FUGI 91	Oxide Fines Stockpile Wind Erosion
FUGI 92	Oxide Fines Stockpile Loadout
FUGI 94	Small Limestone and Dolomite Stockpile Loading
FUGI 95	Small Limestone and Dolomite Stockpile Loadout
FUGI 96	Large Limestone and Dolomite Stockpile Loading
FUGI 97	Large Limestone and Dolomite Stockpile Loadout
FUGI 6	Paved Roads
FUGI 13	Haul Roads
FUGI 100	In Pit Haul Roads

Permit issued: [month day, year]
 Permit expires: [month day, year]

Daily Water Truck Log (Revised 2018)

Date: _____		Driver Name: _____ Driver Signature: _____							
Time: _____									
Area	In Pit Haul Roads	Out of Pit Haul Roads	Crusher & Concentrator Roads	Main Corridor Road	Plant roads	County RD 58 inside of plant	Construction Roads	Stock pile	Other / Transfer points
Stock pile Code / Transfer point code if Watered: _____									
Comments: _____									
Approximate Gallons used: _____									

Date: _____		Driver Name: _____ Driver Signature: _____							
Time: _____									
Area	In Pit Haul Roads	Out of Pit Haul Roads	Crusher & Concentrator Roads	Main Corridor Road	Plant roads	County RD 58 inside of plant	Construction Roads	Stock pile	Other / Transfer points
Stock pile Code / Transfer point code if Watered: _____									
Comments: _____									
Approximate Gallons used: _____									

Permit issued: [month day, year]
Permit expires: [month day, year]

Mesabi Metallics Company LLC

Fugitive Emission Exception report

Name: _____
Date: _____

Signature: _____
Time: _____

Reason for Exception Condition

- | | | |
|---|---|---|
| <input type="checkbox"/> Water truck break down | <input type="checkbox"/> Freeze-drying conditions | <input type="checkbox"/> Sprinkler system failure |
| <input type="checkbox"/> Extreme Heat and Dry | <input type="checkbox"/> Drill Water system failure | <input type="checkbox"/> Other |

If other explain:

Sources Affected

- | | | |
|---|--|---|
| <input type="checkbox"/> Paved Roads | <input type="checkbox"/> Stockpiles | |
| <input type="checkbox"/> Sprinkler system failure | <input type="checkbox"/> Truck loading/unloading | |
| <input type="checkbox"/> Tailing Basin | <input type="checkbox"/> Grading / Dozing | <input type="checkbox"/> Drilling |
| <input type="checkbox"/> Haul Roads | <input type="checkbox"/> Service roads | <input type="checkbox"/> Material Transfer Points |
| <input type="checkbox"/> Other _____ | | |

Enter fugitive (FUGI) ID if known: _____

note FUGI IDs are located in Fugitive Dust Control Plan*