



CONSULTING ENGINEERS
& SCIENTISTS

Minto Mine Phase V/VI Expansion Project
Fugitive Dust Best Management Practices
RWDI#1300542
June 13, 2013

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Draft Fugitive Dust Best Management Practices Version 1

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1. INTRODUCTION

1.1 Objectives of this Best Management Practices Plan

This proposed Best Management Practices (BMP) Plan is to provide an overview for fugitive dust emissions management at the Minto Mine site. It is an overview document that outlines the expected dust emissions sources at the site and describes measures used to manage emissions from these sources. Most sections of this document take the general form of standard operating procedures that are geared towards clearly defining roles, responsibilities, and courses of action.

1.2 Contents of this Best Management Practices Plan

This BMP contains:

- Descriptions of the targeted activities and emission sources;
- Measures to be applied in addressing potential emissions;
- Contingency activities to be implemented should dust become a severe issue;
- Details regarding the site monitoring practices, and;
- Details regarding record keeping practices.

1.3 Layout of this Best Management Practices Plan

This document is structured such that each activity expected to occur at the mine site that generates significant emissions is given a separate section. Each section includes a description of emission sources, complete with control measures applicable to that source.



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2. SITE PREPARATION, DRILLING & BLASTING

2.1 Activities Included

- Earthworks (soil stripping and clearing, and excavation) using an excavator or loader and haul trucks, and;
- Drilling.

2.2 Earthworks

- Stabilize and re-vegetate soil stockpiles, and;
- Reclaim exposed land from soil stripping and clearing as soon as possible.

2.3 Drilling

- Equip drilling rigs with dust-collection devices, and;
- Apply water to cuttings discharged adjacent to the drilling rig.



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3. STORAGE PILES & MATERIAL TRANSFER AND HANDLING

3.1 Activities Included

- Outdoor piles of materials; and,
- Material handling and transferring activities including conveyor and crushing operations.

3.2 Outdoor Stockpiles

- Maintain a suitable moisture content in surface material and as well as to depths to which handling might occur;
- Additional water application to problematic areas;
- Construction of berms upwind to reduce wind speed in the lee of the stockpiles, and;

3.3 Material Handling, Transferring & Processing

- Minimize drop heights;
- Use of enclosures or skirting at conveyor transfer points;
- Belt sweepers installed on the conveyor system, and;
- Baghouse dust collector at crusher.

3.4 Contingency Measures

- Covers on all conveyors, and;
- Additional water or chemical dust suppression for problematic areas.



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4. HAUL ROADS

4.1 Activities Included

- Ore Hauling/Transfer routes

4.2 General Controls

- Restricting vehicle speed to less than 50 km/h;
- Grading snow into top surface of road;
- Water application;
- Chemical dust suppression, and;
- Minimize vehicle idling

4.3 Contingency Measures

- Increased frequency of watering problematic roadway sections;
- Increased frequency in application of chemical dust suppressants, and;
- Further reduction in speed limits.



5. COMBUSTION EMISSIONS

5.1 Activities Included

- Heavy equipment such as excavators, graders, scrapers, bulldozers, haul trucks, etc.

5.2 General Controls

- Use ultra-low sulphur diesel (<15 ppm sulphur content);
- Use equipment with exhaust gas treatment systems:
 - Particulate filters (diesel);
 - Oxidation catalysts (diesel); and,
 - Catalytic Converters (gasoline).
- Ensure combustion equipment and exhaust systems are properly maintained;
- Reduce vehicle idling;
- Minimize cold starts by using:
 - Engine block heaters, and;
 - Electrically pre-heated catalytic converters.



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6. ADMINISTRATION

6.1 Implementation Schedule

- All control measures should be in place before activities commence.

6.2 Implementation Plan

- Formal training on new and existing operating procedures should be provided to relevant new and existing staff at a minimum of once every 3 years, and in the event of changes to the BMP;
- Management should communicate the BMP to responsible supervisors, who shall ensure personnel are following operating procedures defined in the BMP;
- Responsibility should be assigned for ensuring the BMP is followed;
- Management should ensure the BMP is reviewed annually; and,
- The BMP shall be kept in an easily accessible location.



7. MONITORING & RECORD KEEPING

7.1 Monitoring

During mining activities, the following parameters should be monitored and recorded as required:

General Measures

- Water trucks operating.
- Water applied to dust sources.
- Dust suppressants other than water applied to dust sources.

Access/Haul Roads

- Road visibly moist.
- Dust suppressants other than water applied to surface.

Weather Conditions

- Planning for high wind events based on observation thresholds.

7.2 Record Keeping

- A standardized site inspection form should be prepared to document each of the above listed parameters, as well as:
 - When unpaved roads and regularly travelled portions of the site are re-graded;
 - Quantity of water used on-site as a dust suppressant;
 - Type of chemical dust suppressant applied (if applicable), vendor name, and method, frequency, concentration and quantity of application; and,
 - On-site fuel usage.
- A standardized form should be prepared to document information pertaining to high dust emission events or activities, and;
- Responsibility should be assigned to ensure that record keeping is being performed at the prescribed frequency.